Memorandum of Understanding
Between
Krishna Institute of Medical Sciences Deemed University, Karad
And
Saint George's University Limited, Grenada

This Memorandum of Understanding ("MOU"), made this 1st day of March 2014 ("Effective Date"), by and between Krishna Institute of Medical Sciences Deemed University, Karad ("KIMSDU"), located in Karad, India and Saint George's University Limited ("SGU"), located in Grenada, each referred to as "Party" and collectively as the "Parties".

PREAMBLE

Whereas, KIMSDU is an independent institution in India; and

Whereas, SGU is an independent university in Grenada, West Indies; and

Whereas, each party appreciates the contribution that each party has made in the field of academics; and

Whereas, the parties are of the opinion that academic collaboration between the two shall be of mutual benefit to the individual institutions and its students; and

Be it now resolved that these parties propose to develop an academic and cultural interchange through mutual assistance in the areas of education and research as follows:

SCOPE OF COOPERATION

The parties will encourage educational experiences, as well as research and faculty development as deemed beneficial by both parties.

This collaboration aims to promote and facilitate the creation and advancement of knowledge through activities and/or programs that may include, but are not limited to, the following:

1. Mutual visits by faculty and students.
2. Participation in academic activities of the other party.

3. Organizing CMEs, seminars, conferences and workshops of mutual interest.
4. Exchange of academic material.
5. Special short term academic programs for students.
6. Professional Development Programs for faculty.
7. Joint research activities.

Detailed terms and conditions for any activity and/or program shall be decided by mutual written consent prior to the planning & execution of the activity.

COORDINATION

Such programs and activities shall be approved, and periodically reviewed, by authorized individuals from each party. Each party shall designate a Liaison Officer to develop and coordinate any joint activities and/or programs.

COSTS

There will be no financial obligations from either party for any activities and/or programs developed under this agreement.

TERM AND TERMINATION

This MOU begins on the Effective Date and shall remain in effect for five (5) years. Either party may terminate the MOU by giving three (3) months written notice to the other party.

This MOU is not intended to create enforceable legal rights on the part of either party.

MISCELLANEOUS

This MOU constitutes the entire agreement between the parties concerning the subject matter of this MOU. All prior written agreements respecting the subject matter of this MOU are void.

Successors/Assigns: This MOU will be binding on and inure to the benefit of the parties' respective successors and assigns. Neither party may assign this agreement without the other's written consent except as

part of an assignment of substantially all of the assignor's assets and business.

Indemnification: Each party shall defend, indemnify and hold harmless, the other party, its trustees, directors, officers, employees, staff, agents and independent contractors from and against any and all claims, liability, losses, damages, demands, lawsuits, settlements, judgments and expenses (including reasonable attorneys' fees) arising directly or indirectly from any acts or omissions of a party, it's employees, agents and/or assigns, including, but not limited to, negligence, personal injury, breach of contract, misrepresentation and fraud.

Governing Law: This Agreement shall be made and delivered in the Country of Grenada and shall be governed by and construed in accordance with the laws of Grenada applicable to Agreements made and to be performed entirely within the Country of Grenada, excluding any rule or principle of the conflict of laws that might otherwise refer the interpretation of construction of this Agreement to the laws of any other jurisdiction. It is expressly agreed that any judgment obtained by either party against the other arising out of a breach of this agreement shall be enforceable in Grenada and India. Jurisdiction and venue for any and all disputes which may arise under this Agreement shall reside in the Country of Grenada.

Independent Contractors, Non-Exclusivity: Each of the parties hereto is an independent contractor, and nothing herein is intended or shall be construed to create a relationship of joint venture, partnership or otherwise. Neither of the parties hereto shall be bound to refer or accept students on an exclusive basis to or from the other.

Contact Information:

SGU:

Dr. Shivayogi Bhusnurmath
Dean of Academic Affairs
Chair, Department of Pathology
St. George's University School of Medicine
St. George's, Grenada, West Indies

Copy to:

Charles J. Adams, Esq.

General Counsel
St. George's University
c/o Patrick F. Adams, P.C.
3500 Sunrise Highway
Building 300
Great River, New York 11739

KIMSDU:

Dr. M.V. Ghorpade
Kims Deemed University
Malkapur, Karad 415110
Maharashtra, India
kimsuregistrar@gmail.com
Telefax +91-2164-243273

IN WITNESS WHEREOF, the parties have caused this MOU to be executed by their duly authorized representatives on the date first written above.

Saint George's University, Limited

Charles R. Modica

Charles R. Modica, Chancellor

May 12, 2014
Date

Krishna Institute of Medical Sciences Deemed University, Karad

Dr. M.V. Ghorpade
Registrar

1st March 2014.
Date

APPROVED AS TO FORM
OFFICE OF GENERAL COUNSEL
BY:
DATE: May 9, 2014
GGC#: SG-CL-AFFIL-UG-125

AMENDMENT TO MEMORANDUM OF UNDERSTANDING DATED THE 1ST DAY OF MARCH 2014 BETWEEN KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, KARAD AND SAINT GEORGE'S UNIVERSITY LIMITED

This Amendment to the Memorandum of Understanding referenced above is made the 1st day of July, 2019, between Saint George's University Limited, a limited liability company formed and registered in Grenada, West Indies, under the provisions of the companies ordinance CAP. 47 of the revised laws of Grenada ("SGU"), and Springfield College a corporation located in the State of Massachusetts, U.S.A. with its principal place of business located in Springfield, Massachusetts.

WHEREAS, the parties desire to continue the agreement already in place and amend certain sections of that agreement;

The agreement is amended as follows:

FIRST: All terms and conditions as set forth in the Memorandum of Understanding dated March 1, 2014, except as modified herein are incorporated herein and made a part hereof as if fully set forth at length herein.

SECOND: The term of this Memorandum of Understanding shall be extended for an additional five (5) year period, terminating on March 1, 2024.

THIRD: All of the other terms and conditions of the Memorandum of Understanding dated March 1, 2014 will remain the same and in full force and effect.

IN WITNESS WHEREOF, the parties hereby agree to the terms, covenants and conditions of this amendment as of the date first above-mentioned.

SAINT GEORGE'S UNIVERSITY LIMITED

Corporate Seal

APPROVED AS TO FORM
OFFICE OF THE GENERAL COUNSEL
By:
Date: July 15, 2019
SGGC#: SG-CL-AFIL-UG-135

By:
Name: Dawne Buckmire
Title: VP, Business Administration

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, KARAD

Corporate Seal

Krishna Institute of Medical Sciences "Deemed To Be University" Karad

By:
Name:
Title: REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
UNIVERSITY, KARAD.
Karad, Dist. Satara (Maharashtra State) Pin: 415 539
Tel : 02164 –241555-8, ext. 307, Fax : 02164 243272, 242170
Website : www.kimsdeemeduniversity.in E mail : contact@kimsdeemeduniversity.in

Date: - 06-07-15

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last tenth sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The eleventh batch is scheduled from 13th July 2015 to 25th July 2015.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

It may be desirable to select the case before hand to be shown or discussed with the students. The stress has to be on demonstration and allowing them to do (only wherever feasible).

I am sure you will not let down my confidence in you and will take all the necessary steps at your end to make the program successful.

Kindly cover the name and contact number of the person assigned to course coordinator of selective Mr. Anup S. Hendre, department of Biochemistry KIMS.

With best regards

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

Cc: Hon'ble Principal Advisor, KCT
Hon'ble Vice-Chancellor
Director of Health Sciences
Director of Research
Medical Director, KH
Principal, KIMS
Principal, KINS

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 13.07.15 TO 25.07.15

DAY	TIME	BATCH-A	BATCH-B
13.07.15 Monday	9.00 am to 11.00 am	Introduction/Orientation/Campus tour	
	11.00 am to 1.00 pm	Microbiology Dept.	
	2.30 pm to 5.00 pm	Pathology Dept.	
14.07.15 Tuesday	9.00 am to 12.30 pm	Surgery Round & OPD	Ophthalmology OPD
	2.30 pm to 5.00 pm	Anatomy Dept.	
15.07.15 Wednesday	9.00 am to 1.00 pm	OBG Round & OPD	Dermatology OPD
	2.30 pm to 5.00 pm	Sim Lab	
16.07.15 Thursday	9.00 am to 1.00 pm	Ophthalmology OPD	Surgery Round & OPD
	2.30 pm to 5.00 pm	Radiology	
17.07.15 Friday	9.00 to 1.00 pm	Medicine Round & OPD	Pediatrics Round & OPD
	3.00 pm to 5.00 pm	Radiotherapy	
18.07.15 Saturday	Holiday		
19.07.15 Sunday			
20.07.15 Monday	9.00 am to 1.00 pm	Community Medicine & Rural Health Care	
	2.30 pm to 5.00 pm	Surgery	Labour Room
21.07.15 Tuesday	9.00 am to 1.00 pm	ENT OPD	Ortho Round & OPD
	2.30 pm to 5.00 pm	Pediatrics	Medicine
22.07.15 Wednesday	9.30 am to 1.00 pm	Dermatology OPD	OBG Round & OPD
	2.30 pm to 5.00 pm	Medicine	Pediatrics
23.07.15 Thursday	9.00 am to 1.00 pm	Ortho Round & OPD	ENT OPD
	2.30 pm to 5.00 pm	Labour Room	Surgery
24.07.15 Friday	9.00 AM TO 1.00 PM	Pediatrics Round & OPD	Medicine Round & OPD
	2.30 PM TO 5.00 PM	Labour Room	
25.07.15 Saturday	9.00 am to 1.00 pm	Breast Clinic and Oncology	
	2.30 pm to 5.00 pm	Area of Interest	
	6.00 pm	Valedictory Function	

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

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Date: - 18-12-15

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 11th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 12th batch is scheduled from 21st Dec 2015 to 2nd Jan 2016.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

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Kindly cover the name and contact number of the person assigned to course coordinator of selective Mr. Anup S. Hendre, department of Biochemistry KIMS.

With best regards

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Medical Administrator
KH, Karad

Cc: Hon'ble Principal Advisor, KCT
Hon'ble Vice-Chancellor
Director of Health Sciences
Director of Research
Medical Director, KH
Principal, KIMS
Principal, KINS

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 22.12.15 TO 02.01.16

DAY	TIME	BATCH
22.12.15 Tuesday	9.00 am to 11.00 am	Introduction/Orientation/Campus tour
	11.00 am to 1.00 pm	Microbiology Dept.
	2.30 pm to 5.00 pm	Pathology Dept.
23.12.15 Wednesday	9.00 am to 12.30 pm	OBG Round & OPD
	2.30 pm to 5.00 pm	Anatomy Dept.
24.12.15 Thursday	Holiday	
25.12.15 Friday		
26.12.15 Saturday	9.00 to 1.00 pm	Breast Clinic Oncology and OT
	3.00 pm to 5.00 pm	Sim & Skill Lab (Pharmacy College)
27.12.15 Sunday	9.00 am onwards	Labour Room
28.12.15 Monday	9.00 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Community Medicine & Rural Health Care
29.12.15 Tuesday	9.00 am to 1.00 pm	Surgery
	2.30 pm to 5.00 pm	Ophthalmology OPD
30.12.15 Wednesday	9.30 am to 1.00 pm	Pediatrics
	2.30 pm to 5.00 pm	ENT OPD
31.12.15 Thursday	9.00 am to 1.00 pm	Ortho Round & OPD
	2.30 pm to 5.00 pm	Sim Lab (Nursing College)
01.01.16 Friday	9.00 AM TO 1.00 PM	Dermatology
	2.30 PM TO 5.00 PM	Radiology
02.01.16 Saturday	9.00 am to 1.00 pm	Area of Interest
	2.30 pm to 5.00 pm	
	6.00 pm	Valedictory Function

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

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Website : www.kimsdeemeduniversity.in E mail : contact@kimsdeemeduniversity.in

Date: - 01-07-16

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 12th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 13th batch is scheduled from 18th July 2016 to 30th July 2016.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

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Kindly cover the name and contact number of the person assigned to course coordinator of selective Mr. Anup S. Hendre, department of Biochemistry KIMS.

With best regards

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

Cc: Hon'ble Principal Advisor, KCT
Hon'ble Chancellor
Hon'ble Vice-Chancellor
Registrar
Director of Health Sciences
Director of Research
Finance Officer
Medical Director, KH
Asst Registrar (Academics)
Asst Registrar (Estate & Security)
Principal, KIMS
Principal, KINS
Guest House
Photography

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 18.07.16 TO 30.07.16

DAY	TIME	BATCH-A	BATCH-B
18.07.16 Monday	10.00 am to 1.00 pm	Introduction/Orientation/Campus tour	
	2.30 pm to 5.00 pm	Sim Lab (Nursing College Building)	
19.07.16 Tuesday	9.00 am to 1.00 pm	Surgery Round & OPD	Medicine Round & OPD
	2.30 pm to 5.00 pm	Anatomy Dept.	
20.07.16 Wednesday	9.00 am to 1.00 pm	Community Medicine & Rural Health Care	
	2.30 pm to 5.00 pm	Microiology	
21.07.16 Thursday	9.00 am to 1.00 pm	Medicine Round & OPD	Surgery Round & OPD
	2.30 pm to 5.00 pm	Pathology	
22.07.16 Friday	9.00 to 1.00 pm	Ob/Gy OT **(8.00 am)**	Ob/Gy Round & OPD
	2.30 pm to 5.00 pm	Radiotherapy	
23.07.16 Saturday	10.00 am to 1.00 pm	Breast Clinic & Oncology	
	2.30 pm to 5.00 pm	Radiology	
24.07.16 Sunday	Holiday		
25.07.16 Monday	9.00 am to 1.00 pm	Ob/Gy Round & OPD	Ortho Round & OPD
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	Labour Room
26.07.16 Tuesday	9.00 am to 1.00 pm	Ortho Round & OPD	Ob/Gy OT **(8.00 am)**
	2.30 pm to 5.00 pm	Labour Room	Sim Lab (Pharmacy College)
27.07.16 Wednesday	9.00 am to 1.00 pm	Surgery OT **(8.00 am)**	Dermatology OPD
	2.30 pm to 5.00 pm	ENT	Ophthalmology
28.07.16 Thursday	9.00 am to 1.00 pm	Dermatology OPD	Pediatrics Round & OPD
	2.30 pm to 5.00 pm	Ophthalmology	ENT
29.07.16 Friday	9.00 AM to 1.00 pm	Pediatrics Round & OPD	Surgery OT **(8.00 am)**
	2.30 PM to 5.00 pm	Cath Lab/CVTS	Pediatrics
30.07.16 Saturday	9.00 am to 1.00 pm	Pediatrics	Cath Lab/CVTS
	2.30 pm to 5.00 pm	Area of Interest	
	5.00 pm onwards	Valedictory Function	

Dr. R. G. Naniwadekar
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Date: - 11-07-17

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 13th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 14th batch is scheduled from 17th July 2017 to 28th July 2017.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

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Asst Registrar (Academics)
Asst Registrar (Estate & Security)
Principal, KIMS
Director of Research
Finance Officer
All Concern HOD

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 17.07.17 TO 28.07.17

DAY	TIME	BATCH-A	BATCH-B
17.07.17 Monday	10.00 am to 12.30 pm	Introduction/Orientation/Campus tour	
	2.00 pm to 5.00 pm	Sim Lab (Nursing College Building)	
18.07.17 Tuesday	8.30 am to 1.00 pm	Surgery Round & OPD	Medicine Round & OPD
	2.30 pm to 5.00 pm	Anatomy Dept.	
19.07.17 Wednesday	10.00 am to 1.00 pm	Community Medicine & Rural Health Care	
	2.30 pm to 5.00 pm	Microbiology	
20.07.17 Thursday	8.30 am to 1.00 pm	Medicine Round & OPD	Ob/Gy Round & OPD
	2.30 pm to 5.00 pm	Pathology	
21.07.17 Friday	8.30 to 1.00 pm	Ob/Gy OT **(8.00 am)**	Surgery Round & OPD
	2.30 pm to 5.00 pm	Radiotherapy	
22.07.17 Saturday	10.00 am to 1.00 pm	Breast Clinic & Oncology	
	2.30 pm to 5.00 pm	Radiology	
23.07.17 Sunday	Holiday		
24.07.17 Monday	8.30 am to 1.00 pm	Ob/Gy Round & OPD	Ortho Round & OPD
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	Labour Room
25.07.17 Tuesday	8.30 am to 1.00 pm	Ortho Round & OPD	Surgery OT **(8.00 am)**
	2.30 pm to 5.00 pm	Labour Room	Sim Lab (Pharmacy College)
26.07.17 Wednesday	9.00 am to 1.00 pm	Surgery OT **(8.00 am)**	Dermatology OPD
	2.30 pm to 5.00 pm	ENT	Ophthalmology
27.07.17 Thursday	9.00 am to 1.00 pm	Dermatology OPD	Pediatrics Round & OPD
	2.30 pm to 5.00 pm	Ophthalmology	ENT
28.07.17 Friday	9.00 AM to 1.00 pm	Pediatrics Round & OPD	Ob/Gy OT **(8.00 am)**
	2.30 PM to 5.00 pm	Cath Lab/CVTS/ Area of Interest	
	5.00 pm onwards	Valedictory Function	

Dr. R. G. Naniwadekar
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Date: - 09-07-18

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 14th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 15th batch is scheduled from 16th July 2018 to 27th July 2018.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

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Asst Registrar (Estate & Security)
Principal, KIMS
Director of Research
Finance Officer
All Concern HOD

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 16.07.18 TO 27.07.18

DAY	TIME	BATCH-A	BATCH-B	BATCH-C
16.07.18 Monday	10.30 am to 12.30 am	Introduction/Orientation/Campus tour		
	2.30 pm to 5.00 pm	Sim Lab (Nursing College Building)		
17.07.18 Tuesday	8.30 am to 1.00 pm	Ophthalmology	ENT	Dermatology OPD
	2.30 pm to 5.00 pm	Anatomy	Pathology	Microbiology
18.07.18 Wednesday	10.00 am to 1.00 pm	Community Medicine & Rural Health Care		
	2.30 pm to 5.00 pm	CathLab	Pediatrics	Surgery
19.07.18 Thursday	8.30 am to 12.30 am	Surgery	Medicine	Ob/Gy OT **(8.00 am)** Round/OPD
	2.30 pm to 5.00 pm	Pathology	Microbiology	Anatomy
20.07.18 Friday	8.30 am to 12.30 am	Medicine	Ob/Gy OT **(8.00 am)** Round/OPD	Surgery OT **(8.00 am)** Round/OPccD
	2.30 pm to 5.00 pm	Radiotherapy		
21.07.18 Saturday	8.30 am to 12.30 am	Breast Clinic **(10.00 am)**	Radiology	Pediatrics
	2.30 pm to 5.00 pm	Microbiology	Anatomy	Pathology
22.07.18 Sunday		Holiday		
23.07.18 Monday	8.30 am to 12.30 am	Ob/Gy OT **(8.00 am)** Round/OPD	Surgery OT **(8.00 am)** Round/OPD	Medicine
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	Labour Room	Radiology
24.07.18 Tuesday	8.30 am to 12.30 am	Surgery OT **(8.00 am)**	Dermatology OPD	Ophthalmology
	2.30 pm to 5.00 pm	Radiology	Sim Lab (Pharmacy College)	Labour Room
25.07.18 Wednesday	8.30 am to 12.30 am	Pediatrics	Breast Clinic **(10.00 am)**	Ortho
	2.30 pm to 5.00 pm	Labour Room	Cathlab	Sim Lab (Pharmacy College)
26.07.18 Thursday	8.30 am to 12.30 am	Ortho	Surgery	Breast Clinic **(10.00 am)**
	2.30 pm to 5.00 pm	ENT	Ophthalmology	Cathlab
27.07.18 Friday	8.30 am to 12.30 am	Dermatology OPD	Ortho	ENT
	2.30 pm to 5.00 pm	Area of Interest		
	5.00 pm onwards	Valedictory Function		

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

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Website: www.kimskarad.in E mail : contact@kimskarad.in

Date: - 20-12-18

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 15th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 16th batch is scheduled from 24th Dec 2018 to 4th Jan 2019.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

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Hon'ble Chancellor
Hon'ble Vice-Chancellor
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Guest House
Photography
Mr. Tushar Kadam, OS, KH & MRC
Medical Director, KH
Asst Registrar (Academics)
Asst Registrar (Estate & Security)
Dean, KIMS
Director of Research
Finance Officer
All Concern HOD
Transport In-charge

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 24.12.18 TO 04.01.19

DAY	TIME	BATCH-A	BATCH-B	BATCH-C
24.12.18 Monday	10.30 am to 12.30 am	Introduction/Orientation/Campus tour		
	2.30 pm to 5.00 pm	Sim Lab (Nursing College Building)		
25.12.18 Tuesday	Christmas Holiday			
26.12.18 Wednesday	8.30 am to 1.00 pm	Pediatrics	Cathlab	Dermatology OPD
	2.30 pm to 5.00 pm	Anatomy		
27.12.18 Thursday	10.00 am to 1.00 pm	Community Medicine & Rural Health Care		
	2.30 pm to 5.00 pm	Microbiology		
28.12.18 Friday	8.30 am to 12.30 am	Surgery Round/OPD	Medicine OPD	Ob/Gy OPD Labour Room
	2.30 pm to 5.00 pm	Pathology		
29.12.18 Saturday	8.30 am to 12.30 am	Medicine	Ob/Gy OPD Labour Room	Surgery OT **(8.00 am)**
	2.30 pm to 5.00 pm	Radiology		
30.12.18 Sunday	Holiday			
31.12.18 Monday	10.00 am to 1.00 pm	Breast Clinic **(10.00 am)**		
	2.30 pm to 5.00 pm	Radiotherapy		
01.01.19 Tuesday	8.30 am to 1.00 pm	Ob/Gy OPD Labour Room	Surgery OT **(8.00 am)**	Medicine OPD
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	ENT	Cathlab
02.01.19 Wednesday	8.30 am to 12.30 am	Surgery OT **(8.00 am)**	Pediatrics	Surgery Round/OPD
	2.30 pm to 5.00 pm	Dermatology OPD	Sim Lab (Pharmacy College)	ENT
03.01.19 Thursday	8.30 am to 12.30 am	Cathlab	Surgery Round/OPD	Ortho
	2.30 pm to 5.00 pm	Ophthalmology	Ortho	Sim Lab (Pharmacy College)
04.01.19 Friday	8.30 am to 12.30 am	Ortho	Ophthalmology	Pediatrics
	2.30 pm to 5.00 pm	ENT	Dermatology OPD	Ophthalmology
	5.00 pm onwards	Valedictory Function		

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY" KARAD.
Karad, Dist. Satara (Maharashtra State) Pin: 415 539
Tel: 02164 –241555-8, ext. 307, Fax : 02164 243272, 242170
Website: www.kimskarad.in E mail : contact@kimskarad.in

Date: - 10-07-19

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 16th sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 17th batch is scheduled from 15th July 2019 to 26th July 2019.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

It may be desirable to select the case before hand to be shown or discussed with the students. The stress has to be on demonstration and allowing them to do (only wherever feasible).

I am sure you will not let down my confidence in you and will take all the necessary steps at your end to make the program successful.

Kindly cover the name and contact number of the person assigned to course coordinator of selective Mr. Anup S. Hendre, department of Biochemistry KIMS.

With best regards

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

Cc:
Hon'ble Chancellor, KIMSDU
Hon'ble Chief Advisor to Chancellor & KIMSDU
Hon'ble Pro Chancellor
Hon'ble Vice-Chancellor
Registrar
Director of Research
Finance Officer
Medical Director, KH
Asst Registrar (Academics)
Asst Registrar (Estate & Security)
Principal, KIMS
Principal, KINS
All Concern HODs
Mr. Tushar Kadam, OS, KH & MRC
Guest House
Photography

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 15.07.19 TO 26.07.19

DAY	TIME	BATCH-A	BATCH-B	BATCH-C
15.07.19 Monday	10.30 am to 12.30 pm	Introduction/Orientation/Campus tour		
	2.30 pm to 5.00 pm	Anatomy		
16.07.19 Tuesday	8.30 am to 1.00 pm	Ophthalmology	ENT	Dermatology OPD
	2.30 pm to 5.00 pm	Radiotherapy		
17.07.19 Wednesday	10.00 am to 1.00 pm	Community Medicine & Rural Health Care		
	2.30 pm to 5.00 pm	CathLab	Pediatrics	Surgery
18.07.19 Thursday	8.30 am to 12.30 pm	Surgery	Medicine	Ob/Gy **(8.00 am)** Round/OPD/OT
	2.30 pm to 5.00 pm	Microbiology		
19.07.19 Friday	8.30 am to 12.30 pm	Medicine	Ob/Gy **(8.00 am)** Round/OPD/OT	Surgery OT **(8.00 am)** Round/OPD
	2.30 pm to 5.00 pm	Pathology		
20.07.19 Saturday	8.30 am to 12.30 pm	Ortho	Radiology	Pediatrics
	2.30 pm to 5.00 pm	Sim Lab (Nursing College Building)		
21.07.19 Sunday		Holiday		
22.07.19 Monday	8.30 am to 12.30 pm	Ob/Gy **(8.00 am)** Round/OPD/OT	Surgery OT **(8.00 am)** Round/OPD	Medicine
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	Labour Room	Radiology
23.07.19 Tuesday	8.30 am to 12.30 pm	Surgery OT **(8.00 am)**	Dermatology OPD	Ophthalmology
	2.30 pm to 5.00 pm	Radiology	Sim Lab (Pharmacy College)	Labour Room
24.07.19 Wednesday	10.00 am to 1.00 pm	Breast Clinic		
	2.30 pm to 5.00 pm	Labour Room	Cathlab	Sim Lab (Pharmacy College)
25.07.19 Thursday	8.30 am to 12.30 pm	Pediatrics	Surgery	Ortho
	2.30 pm to 5.00 pm	ENT	Ophthalmology	Cathlab
26.07.19 Friday	8.30 am to 12.30 pm	Dermatology OPD	Ortho	ENT
	2.30 pm to 5.00 pm	Area of Interest		
	5.00 pm onwards	Valedictory Function		

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY" KARAD.
Karad, Dist. Satara (Maharashtra State) Pin: 415 539
Tel: 02164 –241555-8, ext. 307, Fax : 02164 243272, 242170
Website: www.kimskarad.in E mail : contact@kimskarad.in

Date: - 19-12-19

To
Head, Department of_____

Subject: - India Medical Selective for students from Saint Georges University, Granada

Dear Sir/Madam,

Last 17 sessions of India Medical Selective for students from Saint Georges University, Grenada was a huge success. The 18th batch is scheduled from 23rd Dec 2019 to 3rd Jan 2020.

I would appreciate your cooperation for the same for this session. Please find enclosed herewith the schedule for this session.

You are requested to assign one person from your department as done last time for this activity (who is communicative, competent and involved) who will ensure that the activity is carried out regularly and punctually and the students are properly engaged during their period of posting with you. If a junior person is assigned, a senior person may cover him/her so that all the necessary facilities are made available.

It may be desirable to select the case before hand to be shown or discussed with the students. The stress has to be on demonstration and allowing them to do (only wherever feasible).

I am sure you will not let down my confidence in you and will take all the necessary steps at your end to make the program successful.

Kindly cover the name and contact number of the person assigned to course coordinator of selective Mr. Anup S. Hendre, department of Biochemistry KIMS.

With best regards

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

Cc:
- Hon'ble Chancellor, KIMSDU
- Hon'ble Chief Advisor to Chancellor & KIMSDU
- Hon'ble Pro Chancellor
- Hon'ble Vice-Chancellor
- Registrar
- Director of Research
- Finance Officer
- Medical Director, KH
- Asst Registrar (Academics)
- Asst Registrar (Estate & Security)
- Principal, KIMS
- Principal, KINS
- All Concern HODs
- Mr. Tushar Kadam, OS, KH & MRC
- Guest House
- Photography

KIMS-INDIA MEDICAL SELECTIVE COURSE SCHEDULE: 23.12.19 TO 03.01.20

DAY	TIME	BATCH-A	BATCH-B	BATCH-C
23.12.19 Monday	10.30 am to 12.30 am	Introduction/Orientation/Campus tour		
	2.30 pm to 5.00 pm	Anatomy		
24.12.19 Tuesday	8.30 am to 1.00 pm	Pediatrics	Dermatology OPD	Ophthalmology
	2.30 pm to 5.00 pm	ENT	Cathlab	Dermatology OPD
25.12.19 Wednesday	Christmas Holiday			
26.12.19 Thursday	8.30 am to 1.00 pm	**Breast OT (8.00 am) (Group of 6 Students)** Lecture by Hon'ble Dr. Shingare (Pro-Chancellor) **(9.00am)**		
	2.30 pm to 5.00 pm	Microbiology		
27.12.19 Friday	10.00 am to 1.00 pm	Community Medicine & Rural Health Care		
	2.30 pm to 5.00 pm	Dermatology OPD	Sim Lab (Pharmacy College)	ENT
28.12.19 Saturday	11.00 am	Ortho	Ophthalmology	Pediatrics
	2.30 pm to 5.00 pm	Radiology		
29.12.19 Sunday	Holiday			
30.12.19 Monday	8.30 am to 12.30 am	Medicine	Ob/Gy OPD Labour Room	Surgery OT **(8.00 am)**
	2.30 pm to 5.00 pm	Sim Lab (Nursing College Building)		
31.12.19 Tuesday	8.30 am to 12.30 am	Surgery Round/OPD	Medicine	Ob/Gy OPD Labour Room
	2.30 pm to 5.00 pm	Radiotherapy		
01.01.20 Wednesday	8.30 am to 1.00 pm	Ob/Gy OPD Labour Room	Surgery OT **(8.00 am)**	Medicine
	2.30 pm to 5.00 pm	Sim Lab (Pharmacy College)	ENT	Cathlab
02.01.20 Thursday	8.30 am to 12.30 am	Surgery OT **(8.00 am)**	Pediatrics	Surgery Round/OPD
	2.30 pm to 5.00 pm	Pathology		
03.01.20 Friday	8.30 am to 12.30 am	Cathlab	Surgery Round/OPD	Ortho
	2.30 pm to 5.00 pm	Ophthalmology	Ortho	Sim Lab (Pharmacy College)
	5.00 pm onwards	Valedictory Function		

Dr. R. G. Naniwadekar
Medical Administrator
KH, Karad

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4712
www.usuhs.mil

August 6, 2015

Dr. Ram K. Ayachit
Director, Health Sciences,
Krishna Institute of Medical Sciences, Deemed University
Malkapur, Karad (Dist.Satara)
415539 Maharashtra, India.
Phone: (02164) 241555/6/7/8

Email: arc2756@gmail.com, drayachit@yahoo.co.in

Dear Dr. Ayachit:

Thank you very much for your assistance in developing and facilitating the proposed memorandum of agreement between the Uniformed Services University of the Health Sciences ("USU") and the Krishna Institute of Medical Sciences, Deemed University ("KIMSDU").

As discussed, the *Memorandum of Understanding between the Uniformed Services of the Health Sciences, Bethesda, MD, USA and the Krishna Institute of Medical Sciences Deemed University, Karad, Maharastra State, India*, is attached in duplicate and signed by our President.

We ask that you review the attached memorandum and if it meets your approval, sign the MOU and return one (1) signed copy to my attention

Once again, thank you for your helpful and timely assistance in preparing this Memorandum. We look forward to a good cooperative relationship between USU and KIMSDU.

If you have any questions or concerns about the documents, please do not hesitate to contact me at (301) 295-6646 or by email at Bridget.Beswick-Escanlar.ctr@usuhs.edu.

Sincerely,

Bridget Beswick-Escanlar
Program Administrative Specialist
Uniformed Services University of the Health Sciences

Learning to Care for Those in Harm's Way

MEMORANDUM OF UNDERSTANDING FOR TRAINING AFFILIATION

BETWEEN

THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES, BETHESDA, MD, USA

AND

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, KARAD, MAHARASTRA STATE, INDIA

ARTICLE 1. BACKGROUND

1. The Uniformed Services University of the Health Sciences (hereinafter, "USU"), a Department of Defense academic institution, is a fully-accredited University which includes, the F. Edward Hébert School of Medicine, and has approved health professional education programs that require bona fide University students enrolled therein to participate in clinical learning experiences, research, or training as set forth in the program curricula. USU does not include any clinical facilities. University students are commissioned officers on active duty in the U.S. Army, Navy, Air Force and/or Public Health Service.

2. Krishna Institute of Medical Sciences Deemed University, Karad, is a public, civilian, educational institution, situated in Karad, Maharastra State, India, (hereinafter, "KIMSDU"). KIMSDU includes all of its components, teaching facilities, and affiliated clinical facilities.

3. KIMSDU and the USU are jointly referred to as the "Parties" to this Memorandum of Agreement (hereinafter "MOU"), or "Institutions", as appropriate.

4. The Parties are each committed to the educational preparation of health care professionals, and specifically, to the education of medical students and graduate students. The Parties are engaged in certain activities in which bona fide students and faculty in their respective professional programs may attain part of their required learning experiences through education, training, teaching, or research.

5. It is accordingly to the benefit of the Parties to contribute to the educational preparation of health care professionals by enabling faculty and students of USU School of Medicine to obtain part of their required learning experiences through participation in education, training, observation of patient care, and research, at KIMSDU; and to enable faculty and students of KIMSDU to participate in research at USU.

6. In order to implement the foregoing, the Parties desire to enter into this MOU as follows:

ARTICLE 2. GENERAL PROVISIONS

Educational and Research Programming and Attendance:

7. By mutual understanding, students and faculty of USU's School of Medicine may undertake education, training and participate in research opportunities at KIMSDU.

8. By mutual understanding, students and faculty of KIMSDU may participate in research and undertake teaching opportunities at USU.

9. Students and faculty who wish to participate in education, training, research, and/or teaching opportunities must satisfy the applicable education and/or training requirements of the respective host institution prior to arrival at the host institution, and may participate in additional experience at the sole discretion of the host institution.

Obligations:

10. The Parties, including their faculty, staff, students, and all instructional sites, acknowledge a shared responsibility for creating and maintaining an explicit and appropriate learning environment for students that promotes the development of appropriate professional attributes in the students. This environment will be addressed through formal learning activities, and through the modeling of professional attitudes, values, and informal lessons conveyed by individuals who interact with students including faculty, and staff.

11. The learning environment for USU students may be assessed by USU's School of Medicine upon completion of the experience. KIMSDU will assist USU's School of Medicine in remedying deficiencies in the learning environment, identified through various means.

12. KIMSDU may provide elective or advanced educational training opportunities in accordance with its existing commitments. The assignments and number of students to be assigned to and retained in such experiences in any year, or fraction thereof, shall be determined collaboratively by the Parties.

13. KIMSDU reserves the right to refuse acceptance of any student for education, training and/or to bar any student from entrance and access to KIMSDU facilities when it is determined by KIMSDU that further participation would not be in the best interest of KIMSDU. USU will facilitate the return of their student(s), including the reasonable costs of such return, if the student's training is ended in accordance with this section.

14. Neither Party will compensate nor reimburse the other on account of any of the activities, services, nor facilities provided by the other in accordance with the terms set out in this MOU.

15. Emergency health care shall be provided to USU students and faculty at KIMSDU, except as otherwise directed by USU's designated Office of Student Affairs. KIMSDU will not be responsible for the costs of emergency health care provided to USU students during their time at KIMSDU.

16. The Parties will ensure that their respective faculty, staff, and/or students carry sufficient coverage for all health care expenses that they may incur while at the Host Institution.

17. KIMSDU will ensure that students and faculty who are accidentally exposed to environmental hazards and/or infectious diseases and/or other occupational injury are treated appropriately and in a timely manner. KIMSDU also will notify the Office of Student Affairs at USU, which may arrange for follow–up care as needed.

Contact Information for Office of Student Affairs

Uniformed Services University of the Health Sciences
Office of Student Affairs
Col Lisa Moores, MD
Phone: 301.295.3185
Email: lisa.moores@usuhs.edu

18. In addition to the academic and administrative accountability of USU students and faculty to KIMSDU, USU students and faculty will comply with U.S. State Department and U.S. Department of Defense notification and security requirements and be accountable to U.S. Embassy officials in India. Any applicable, current, Status of Forces Agreement between the United States and India will be the document to address any governing authorities for issues not addressed directly within this MOU.

19. Publication of any materials by the students or faculty of either Institution associated with training or research under this MOU must be approved for release, in writing, by both Parties.

USU and KIMSDU Obligations:

20. The status of implementation of individual student education programs will be reviewed by the Dean of USU's School of Medicine, as reported to the school by the faculty at KIMSDU, in collaboration with the KIMSDU's Director of Medical Education (or his/her equivalent).

21. The Parties understand that USU students and faculty are prohibited from receiving pay, contributions, or gifts other than the pay and allowances they receive from the United States Government as active duty, commissioned officers, unless specifically authorized by USU officials.

Academic and Administrative:

22. Students and faculty shall be instructed to follow the instructions of their host faculty. USU students and faculty shall follow the instructions of their host institutions insofar as they are reasonably consistent with the regulations and customs of USU. To the extent that inconsistent academic instructions are identified, the Parties agree to change the inconsistent academic instruction in a manner that is acceptable to both Parties.

23. Students and faculty shall be required to:
    a. Respect the laws and customs of the host country and, while in the host country, and abstain from any political activity inconsistent with the objectives of this MOU;
    b. Be in possession of appropriate documentation, issued by their government, required by the host country for entry and exit;
    c. Be in possession of appropriate documentation, issued by either University, required for identification or other purposes; and
    d. Comply with regulations and customs of the host institution and host country in regard to civilian attire, as applicable.

24. Allegations of infractions of civil laws by USU students or faculty shall be reported immediately to the student's Defense Attaché at the United States Embassy in India, and to USU's Office of Student Affairs. Allegations of infractions of civil laws by KIMSDU students or faculty shall be reported immediately to the Dean's Office of KIMSDU.

ARTICLE 3. INSTITUTIONAL RELATIONSHIP

25. It is understood that the Parties will require relationships with other hospitals and universities to carry out their purposes, and that each Institution shall determine the number and content of their relationships.

26. Under this MOU the Parties shall continue to be autonomous and shall be governed independently by their respective governing bodies and administrations except insofar as this MOU specifically states to the contrary.

27. USU's Vice President for External Affairs and KIMSDU's Director of Medical Education, or his/her equivalent(s), will conduct an annual review of this MOU for appropriateness, currency, and the purposes of continuing improvement of this MOU.

ARTICLE 4. CLINICAL EDUCATION ENVIRONMENT AT THE HOST INSTITUTIONS

28. KIMSDU shall assume responsibility for obtaining any necessary consent from, and/or issuing any necessary notices to, patients or patients' parents or guardians regarding patients at their affiliated hospital or healthcare facility, and their participation in their respective teaching programs.

29. Professional responsibility for the care and management of all patients will remain with KIMSDU and its staff.

30. The respective originating institution will exercise primary program authority and obligation over academic affairs and education/assessment of their students.

31. KIMSDU will be responsible for the Institutional Human Use Review(s), or its equivalent, for all human research protocols at their respective facilities, involving their respective staff members, including those who may have also been appointed to the USU's faculty under the provisions of this MOU.

32. USU, through its Institutional Review Board (IRB) will be responsible for the review and approval of all research proposals proposed by, or involving USU staff or students. This includes but is not limited to, all human research protocols at USU or KIMSDU facilities, involving their respective staff members, including those who may have also been appointed to the USU's faculty under the provisions of this MOU.

33. KIMSDU's patient safety policies will be sent to USU, and students and faculty of USU, who will be attending KIMSDU, in advance of their arrival at KIMSDU. The hosting department of KIMSDU will

orient all USU students and faculty, upon arrival, concerning the Hospital's requirements for patient safety.

34. KIMSDU will permit the inspection of their clinical and related facilities by government agencies or other agencies charged with the responsibility for accreditation of USU education programs.

35. USU student and faculty contact with patients at or through KIMSDU shall be under the direction of KIMSDU's faculty, house staff, or assigned teaching attending staff who hold faculty appointments.

36. Members of KIMSDU's house staff shall participate under the supervision and direction of KIMSDU's appropriate Chief of Service in the teaching program to be carried out at KIMSDU's affiliated hospital or clinical facility. USU students and faculty assigned to KIMSDU will work directly under members of KIMSDU's faculty.

37. Under no circumstances will USU students or faculty be in contact with patients without the supervision and direction of KIMSDU faculty or house staff. When under KIMSDU's supervision and direction, USU students and faculty may observe patient care by reviewing medical histories; observing physical examinations; recording differential diagnoses; making (for educational purposes), recommendations for diagnostic and therapeutic procedures; making recommendations for disposition of patients after discharge from the host institution; and participation in other activities as requested by KIMSDU's Service Chief (or equivalent). All of these activities, with every patient, must be supervised by, and under the direction of, a member of KIMSDU's staff or faculty, who is responsible for that patient's care.

38. Patients' histories, observation of physical examination, and other notes recorded by students and faculty participating in KIMSDU's teaching program will become part of the patient's record in accordance with KIMSDU's regulations and other applicable guidelines.

39. Subject to mutual agreement between Deans of the Parties, the KIMSDU affiliated Hospital will provide necessary education facilities and access to appropriate resources for student education for all students participating in educational experiences within the Hospital.

ARTICLE 5. CLINICAL EXPOSURE/SUPERVISION AT HOST INSTITUTIONS

40. Students and faculty shall abide by all of the policies, rules, and regulations of the host institution.

41. Host Institutions shall provide originating Institution with all applicable policies, procedures and regulations relating to the protection of personal health information in effect in the jurisdiction of the host Institution. The host Institution will undertake to train students and faculty on all applicable policies, procedures, and regulations relating to the protection of health information.

ARTICLE 6. LIABILITY/CONTINGENCY

Parties' Faculty, Staff, and Medical Students

USU Faculty, Staff and Students:

42. The Parties recognize that faculty, staff, and medical and graduate students of USU performing pursuant to this MOU remain employees of their respective services and of the United States Government, performing duties within the course and scope of their Federal employment. Consequently, the provisions of the Federal Tort Claims Act (FTCA) (28 U.S.C. 2671 et seq.), Military Claims Act (MCA) (10 U.S.C. 2733 et seq.), and the Foreign Claims Act (FCA) (10 U.S.C. 2734 et seq.) will apply only and exclusively to allegations of negligence or wrongful acts or omissions by faculty, staff and students while acting within the scope of their duties as Federal employees, pursuant to this MOU; and which provides that the United States may pay claims presented for negligent or wrongful acts or omissions of United States Federal employees during the scope of their employment. Title 10, US Code, section 1089, provides that any action for malpractice brought against military/federal personnel within the scope of his/her duties will be treated as an action brought against the United States Government. Employees will be covered for the period that they were an employee of the United States' Government if claims are filed after they leave the Military Service. Only the United States, therefore, is a proper party for which a claim may be filed.

43. Please forward all requests for malpractice information regarding USU students, faculty, and/or employees to: USU General Counsel, 301.295.3028, 4301 Jones Bridge Road, A1030, Bethesda, Maryland 20814-4799.

KIMSDU Faculty, Staff and Students:

44. KIMSDU Faculty, Students, and Staff who participate in research at USU are required to carry liability insurance from a US provider, in an amount between $1 million - $5 million, as agreed upon between the Parties. Copies of the insurance policy will be provided on an annual basis, on June 30th of each year, or when coverage changes, whichever is first.

All Parties:

45. KIMSDU will investigate complaints regarding unprofessional behavior by the student(s). The host institution will forward any findings, conclusions, or recommendations to the sponsoring academic department of USU, and to the Office of Student Affairs, or its equivalent, for appropriate action.

46. The Parties agree to cooperate fully in any investigation necessary for medical, disciplinary, or legal reasons.

ARTICLE 7. TERMS, RENEWAL, AND AMENDMENTS

47. The terms of this MOU shall be effective for a period of five (5) years from the date of execution (date of last signature). In the event of an administrative delay in renewing the agreement, there shall be a one-time automatic one (1) year renewal, unless either Party notifies the other Party, in writing, not less than six (6) months prior to this MOU's termination date that either Party does not wish to renew this MOU.

48. Either Party may terminate this MOU by giving six (6) months written notice of such intention to the other Party.

49. This MOU may be modified or amended, in writing, by mutual consent of both Parties.

50. The contacts given below shall be the addresses of the representative parties to whom all notices and reports required by this MOU shall be sent:

POINTS OF CONTACT

Dr. Jeffrey Longacre
Vice President for External Affairs
Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814
301-295-1917
Email : jlongacre@usuhs.mil

Dr. Ram K. Ayachit
Director, Health Sciences,
Krishna Institute of Medical Sciences, Deemed University
Malkapur, Karad, 415 539, Maharashtra State, India
+91 2164 241555/6/7/8 extn 454
Email : dhs@kimsuniversity.in

For the Krishna Institute of Medical Sciences Deemed University:

12 August. 2015

Dr. A. V. Nadkarni
Date
Vice Chancellor
Krishna Institute of Medical Sciences Deemed University, Karad

For the Uniformed Services University of the Health Sciences:

8 August 2015

Charles L. Rice, MD
Date
President
Uniformed Services University of the Health Sciences

References: Public Law 92-426, Title 10 Section 2112, 2113, 2114; DoD Instruction 5105.45

List of Tropical Medicine Students from February, 2017 to March, 2020

Sr. No.	Name	Subject	Period
1.	Ms. Cynthia Philip	Tropical Medicine	01/02/2017 to 25/02/2017
2.	Mr. Michael Lee Light	Tropical Medicine	01/02/2017 to 25/02/2017
3.	Ms. Ellis Oriana Venniese	General Surgery	31/07/2017 to 25/08/2017
4.	Ms. Kathryn Fekete	Pediatrics	19/08/2017 to 12/09/2017
5.	Mr. Aaron Peter Montgomery	Tropical Medicine	23/10/2017 to 18/11/2017
6.	Mr. Carlson Scott James	Occupational Medicine	27/11/2017 to 22/12/2017
7.	Ms. Holly Harris Berkley	GYN	02/01/2018 to 26/01/2018
8.	Mr. Robert Burnham Laverty	General Surgery	25/03/2018 to 20/04/2018
9.	Emadh Suleman Madha	General Surgery	19/11/2018 To 14/12/2018
10.	Tarah Ruth Mayer Woodle	General Surgery	19/11/2018 To 14/12/2018
11.	Samone Franzese	Medicine	01/12/2018 to 07/01/2019
12.	Morgan C. Gettle	Medicine	29/01/2019 to 23/02/2019
13.	Elena Shahbazi	Medicine	29/01/2019 to 23/02/2019
14.	Mary B. Ford	Medicine	29/01/2019 to 23/02/2019
15.	Ms. Bechtold Mercy Lynn	Tropical Medicine	05/08/2019 to 14/08/2019
16.	Ms. Forrester Angelique Stacey Ann	Tropical Medicine	05/08/2019 to 14/08/2019
17.	Ms. Tran Stephanie Quynh Giao Bangkrasor	Tropical Medicine	05/08/2019 to 14/08/2019
18.	Mr. Kavanaugh Michael Joseph	Tropical Medicine	05/08/2019 to 14/08/2019

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

19.	Mr. Spiro Jeffrey Daniel	Tropical Medicine	05/08/2019 to 14/08/2019
20.	Mr. Mc Cullough Jeremy David	Tropical Medicine	05/08/2019 to 14/08/2019
21.	Mr. Conboy Christopher Lee	Tropical Medicine	05/08/2019 to 14/08/2019
22.	Mr. Washington Eric Ralan	Tropical Medicine	05/08/2019 to 14/08/2019
23.	Mr. Breuer James Elliot Tane	Tropical Medicine	05/08/2019 to 14/08/2019
24.	Mr. Paul Michael Robben	Medicine	06/01/2020 to 06/02/2020
25.	Mr. Shumar John Nicholas	Medicine	03/02/2020 to 07/03/2020
26.	Mr. Blickle John Griffis	Medicine	03/02/2020 to 07/03/2020
27.	Ms. Conte Lisa Maria	Medicine	03/02/2020 to 07/03/2020
28.	Ms. Casey Erwin	Surgery	02/03/2020 to 14/03/2020
29.	Ms. Ama Winland	Surgery	02/03/2020 to 14/03/2020

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KIMS "Deemed To Be University" Karad

List of Tropical Medicine Students for the month of February, 2017

Sr. No.	Name	Subject	Period
1.	Ms. Cynthia Philip	Tropical Medicine	01/02/2017 to 25/02/2017
2.	Mr. Michael Lee Light	Tropical Medicine	01/02/2017 to 25/02/2017

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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref. : KIMSDU/AR.Acd/02/005/2017 Date : 03.01.2017

To,

Cynthia Philip, MD
CPT, MC, USA
Internal Medicine Walter Reed National Military Medical Center : PGY-3
Bethesda, MD
347-257-1578, Cynthia.philip.mil@mail.mil

SUBJECT : Invitation Letter for Dr. Cynthia Philip, Internal Medicine PGY-3, Walter Reed National Military Medical Center, Bethesda, Maryland.

Dr. Cynthia Philip is a Medical Doctor in training at Walter Reed National Military Medical Center. She is to participate in the Uniformed Services University of Health Sciences (USUHS), Tropical Medicine Training Program. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Dr. Cynthia will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29 January 2017 to 28 February 2017.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
9822288008
www.kimsuniversity.in

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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref. : KIMSDU/AR.Acd/02/006/2017 Date : 03.01.2017

To,

Michael L. Light II, DO
LTC, MC, USA
Internal Medicine Naval Medical Centre Portsmouth : PGY-3
Portsmouth, VA
Clinic L
(207) -505-0701, Michael.Light5.mil@mail.mil

SUBJECT : Invitation Letter for Dr. Michael L. Light II, Internal Medicine PGY-3, Naval Medical Center, Portsmouth, Virginia.

Dr. Michael L. Light II is a Medical Doctor in training at Naval Medical Center Portsmouth, Virginia. He is to participate in the Uniformed Services University of Health Sciences (USUHS), Tropical Medicine Training Program. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Dr. Light will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29 January 2017 to 28 February 2017.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
9822288008
www.kimsuniversity.in

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COURSE ON TROPICAL MEDICINE

Duration : 01/02/2017 to 25/02/2017

Cynthia Philip & Micahel Light

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Wednesday, 01.02.2017	8.30 am onwards	PSM Pre Test Introduction and Orientation to Tropical Medicine
Thursday, 02.02.2017	8.30 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Microbiology
Friday, 03.02.2017	8.30 am to 1.00 pm	Cardiology
	2.30 pm to 5.00 pm	Ob./Gyn
Saturday, 04.02.2017	8.30 am to 10.30 am	Surgery
	10.45 am to 1.00 pm	ENT
	2.30 pm to 5.00 pm	Pathology
Sunday, 05.02.2017	**Holiday**	
Monday, 06.02.2017	8.30 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Paediatrics
Tuesday, 07.02.2017	8.30 am to 1.00 pm	Cardiology
	2.30 pm to 5.00 pm	Dermatology
Wednesday, 08.02.2017	**Visit to Bel-Air - Panchgani**	
Thursday, 09.02.2017	8.30 am to 1.00 pm	Paediatrics
	2.30 pm to 5.00 pm	Microbiology
Friday, 10.02.2017	8.30 am to 10.30 am	Medicine
	10.45 am to 1.00 pm	ENT
	2.30 pm to 5.00 pm	Opthalmology
Saturday, 11.02.2017	8.30 am to 10.30 am	Medicine
	10.45 am to 1.00 pm	ENT
	2.30 pm to 5.00 pm	Opthalmology
Sunday, 12.02.2017	**Holiday**	

Tea Break : 10.30 pm to 10.45 am

Lunch Break : 1.00 pm to 2.30 pm

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KIEM'S DEEMED UNIVERSITY, KARAD

COURSE ON TROPICAL MEDICINE

Duration : 01/02/2017 to 25/02/2017

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Monday, 13.02.2017	8.30 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Paediatrics
Tuesday, 14.02.2017	8.30 am to 1.00 pm	Dermatology
	2.30 pm to 5.00 pm	Pathology
Wednesday, 15.02.2017	**Visit to Richardson Leprosy Center - Miraj**	
Thursday, 16.02.2017	8.30 am to 1.00 pm	Paediatrics
	2.30 pm to 5.00 pm	Microbiology
Friday, 17.02.2017	8.30 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Ob./Gyn
Saturday, 18.02.2017	**CME on Tropical Medicine**	
Sunday, 19.02.2017	**Holiday**	
Monday, 20.02.2017	8.30 am to 1.00 pm	Medicine
	2.30 pm to 5.00 pm	Pulmonology
Tuesday, 21.02.2017	8.30 am to 1.00 pm	Surgery
	2.30 pm to 6.00 pm	Pathology
Wednesday, 22.02.2017	8.30 am to 10.30 am	Paediatrics and PSM
	Visit to Village at Rethare/ Shenoli	
Thursday, 23.02.2017	8.30 am to 1.00 pm	Paediatrics
	2.30 pm to 5.00 pm	Microbiology
Friday, 24.02.2017	8.30 am to 10.30 am	Gastroenterology
	10.45 am to 1.00 pm	Interaction
	2.30 pm to 5.00 pm	Open Forum
	6.30 pm	Valedictory Function
Saturday, 25.02.2017	8.30 am to 5.00 pm	Medicine

Tea Break : 10.30 pm to 10.45 am
Lunch Break : 1.00 pm to 2.30 pm

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

Tropical Medicine Student For the month of July, 2017

Sr. No.	Name	Subject	Period
1.	Ms. Ellis Oriana Venniese	General Surgery	31/07/2017 to 25/08/2017

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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref.: KIMSDU/AR.Acd./02/132/ 2017 Date: 19/06/2017

To,
Oriana Ellis
2LT, MS
Uniformed Services University of Health Sciences,
Bethesda, Maryland, USA.
(954) 643-6640;oriana.ellis@usuhs.edu

SUBJECT : Invitation Letter for Oriana Ellis, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Oriana Ellis is a Medical Doctor in training at Uniformed Services University of Health Sciences. She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Oriana Ellis will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29 July 2017 to 26 August 2017.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
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Krishna Institute of Medical Sciences, Deemed University, Karad

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KIMS MEDICAL ELECTIVE

Duration : 31/07/2017 to 25/08/2017

Oriana Ellis

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 1		
31.07.2017 Monday	11.00 am to 01.00 pm	Introduction & Orientation of the campus
	03.00 pm to 05.00 pm	Dept. of Anatomy
01.08.2017 Tuesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm 06.00 pm	Evening OPD, PG discussions & ward round
02.08.2017 Wednesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Microbiology
	05.00 pm to 06.00 pm	PG discussions & ward round
03.08.2017 Thursday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
04.08.2017 Friday	08.00 am01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Pathology
	05.00 pm to 06.00 pm	PG discussions & ward round
05.08.2017 Saturday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	PG discussions & ward round
06.08.2017 Sunday	Free day / Recreation	

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

KIMS MEDICAL ELECTIVE

Duration : 31/07/2017 to 25/08/2017

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 2		
07.08.2017 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
08.08.2017 Tuesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Radiology
	05.00 pm to 06.00 pm	PG discussions & ward round
09.08.2017 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
10.08.2017 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Ob/Gyn
	05.00 pm to 06.00 pm	PG discussions & ward round
11.08.2017 Friday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
12.08.2017 Saturday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	PG discussions & ward round
13.08.2017 Sunday	Free day / Recreation	

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

KIMS MEDICAL ELECTIVE

Duration : 31/07/2017 to 25/08/2017

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 1		
14.08.2017 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of ENT
	05.00 pm to 06.00 pm	PG discussions & ward round
15.08.2017 Tuesday	08.00 am onwards	Independence Day Celebrations
16.08.2017 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Orthopedics
	05.00 pm to 06.00 pm	PG discussions & ward round
17.08.2017 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Cardiology
	05.00 pm to 06.00 pm	PG discussions & ward round
18.08.2017 Friday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Radiotherapy
	05.00 pm to 06.00 pm	PG discussions & ward round
19.08.2017 Saturday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	PG discussions & ward round
20.08.2017 Sunday	Free day / Recreation	

REGISTRAR (Academics)

KIMS MEDICAL ELECTIVE

Duration : 31/07/2017 to 25/08/2017

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 2		
21.08.2017 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Ophthalmology
	05.00 pm to 06.00 pm	PG discussions & ward round
22.08.2017 Tuesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dental hospital
	05.00 pm to 06.00 pm	PG discussions & ward round
23.08.2017 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dental hospital
	05.00 pm to 06.00 pm	PG discussions & ward round
24.08.2017 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dental hospital
	05.00 pm to 06.00 pm	PG discussions & ward round
25.08.2017 Friday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 04.00 pm	Valedictory program

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

Tropical Medicine Student For the month of August, 2017

Sr. No.	Name	Subject	Period
1.	Ms. Kathryn Fekete	Pediatrics	19/08/2017 to 12/09/2017

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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref.: KIMSDU/AR.Acd./02/139/ 2017 Date: 01/07/2017

To,
KATHRYN FEKETE,
DO, CPT, MC, USA
Pediatrics, PGY-2
Tripler Army Medical Center

SUBJECT: Invitation Letter for Kathryn Fekete, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Kathryn Fekete is a Medical Doctor in training at Uniformed Services University of Health Sciences. She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Kathryn Fekete will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29 July, 2017 to 26 August, 2017.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
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KIMS MEDICAL ELECTIVE
Duration : 19/08/2017 to 12/09/2017

Kathryn Fekete

COURSE SCHEDULE

DAY	TIME	ACTIVITY
Posting – Pediatrics Unit II		
19/08/2017 Saturday	Introduction & Orientation	
20/08/2017 Sunday	Recreation/Free day	
21/08/17 Monday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & Ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
22/08/17 Tuesday	09.00 am - 11.00 am	Journal Reading
	11.00 am - 01.00 pm	OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
23/08/17 Wednesday	09.00 am - 10.00 am	Ward rounds & teaching
	10.00 am - 01.00 pm	Camp
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Tb project
	05.00 pm - 06.00 pm	Ward & NICU rounds
24/08/17 Thursday	09.00 am - 11.00 am	Seminar- Paed. Pain Management
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
25/08/17 Friday	Holiday	

ASST. REGISTRAR (Academics)
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KIMS MEDICAL ELECTIVE
Duration : 19/08/2017 to 12/09/2017

COURSE SCHEDULE

DAY	TIME	ACTIVITY
Posting – Pediatrics Unit II		
26/08/17 Saturday	08.00 am - 09.00 am	Neurology Class
	9.00 am - 12.00 pm	Ward rounds & teaching
	12.00 pm - 02.00 pm	Lunch break
	02.00 pm - 04.00 pm	Neurology OPD
	04.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
27/08/17 Sunday	Recreation/Free day	
28/08/17 Monday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Dept.of Radiology I
	05.00 pm - 06.00 pm	Ward & NICU rounds
29/08/17 Tuesday	09.00 am - 11.00 am	Journal Reading
	11.00 am - 01.00 pm	OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Dept.of Radiology II
	05.00 pm - 06.00 pm	Ward & NICU rounds
30/08/17 Wednesday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Camp
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Tb project
	05.00 pm - 06.00 pm	Ward & NICU rounds
31/08/17 Thursday	09.00 am - 11.00 am	Seminar- Paed. Pain Management
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds

KIMS MEDICAL ELECTIVE
Duration : 19/08/2017 to 12/09/2017

COURSE SCHEDULE

DAY	TIME	ACTIVITY
1/9/2017 Friday	09.00 am - 11.00 am	Case presentation
	11.00 am - 01.00 pm	OPD/Camp
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Dept.of ENT
	05.00 pm - 06.00 pm	Ward & NICU rounds
2/9/2017 Saturday	Holiday	
3/9/2017 Sunday	Recreation/Free day	
Posting – Pediatrics Unit I		
4/9/2017 Monday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
5/9/2017 Tuesday	09.00 am - 11.00 am	Journal Reading
	11.00 am - 01.00 pm	OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Dept.of Dermatology
	05.00 pm - 06.00 pm	Ward & NICU rounds
6/9/2017 Wednesday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Camp
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Tb project
	05.00 pm - 06.00 pm	Ward & NICU rounds

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

KIMS MEDICAL ELECTIVE
Duration : 19/08/2017 to 12/09/2017

COURSE SCHEDULE

DAY	TIME	ACTIVITY
Posting – Pediatrics Unit I		
7/9/2017 Thursday	09.00 am - 11.00 am	Seminar- Approach to PEM case
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
8/9/2017 Friday	09.00 am - 11.00 am	Case presentation
	11.00 am - 01.00 pm	OPD/Camp
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	Dept.of Ophthalmology
	05.00 pm - 06.00 pm	Ward & NICU rounds
9/9/2017 Saturday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
10/9/2017 Sunday	Recreation/Free day	
11/9/2017 Monday	09.00 am - 11.00 am	Ward rounds & teaching
	11.00 am - 01.00 pm	Immunization OPD
	01.00 pm - 03.00 pm	Lunch Break
	03.00 pm - 05.00 pm	PG discussion & ward procedures
	05.00 pm - 06.00 pm	Ward & NICU rounds
12/9/2017 Tuesday	Synopsis & Valedictory program	

- Project - The Proportion of pulmonary Tuberculosis among severely acute malnourished / moderateacute malnourished Children Registered With Anganwadi Centers In Karad TU.

Tropical Medicine Student For the month of October, 2017

Sr. No.	Name	Subject	Period
1.	Mr. Aaron Peter Montgomery	Tropical Medicine	23/10/2017 to 18/11/2017

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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref.: KIMSDU/AR.Acd./02/150/ 2017

Date: 07/07/2017

To,

Aaron Montgomery
2LT, MS
United States Army
Class of 2018
F. Edward Hébert School of Medicine
Uniformed Services University of the Health Sciences

SUBJECT : Invitation Letter for Aaron Montgomery , Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Aaron Montgomery is a Medical Doctor in training at Uniformed Services University of Health Sciences. He is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Aaron Montgomery will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 23 October to 17 Nov 2017.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
9822288008
www.kimsuniversity.in

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

Krishna Institute of Medical Sciences, Deemed University, Karad

ASST. REGISTRAR (Academics)
KIMS DEEMED UNIVERSITY, KARAD

COURSE ON TROPICAL MEDICINE

Duration : 23/10/2017 to 17/11/2017

COURSE SCHEDULE

Aaron Montgomery

Day	Time	Activity
Monday, 23/10/2017	8.30 am to 1.00 pm	Introduction & Orientation
	3.00 pm to 5.00 pm	Dept. of Anatomy
Tuesday, 24/10/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Pathology
Wednesday, 25/10/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Pathology
Thursday, 26/10/2017	8.30 am to 5.00 pm	Pulmonology
Friday, 27/10/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Microbiology
Saturday, 28/10/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Ob/Gyn
Sunday, 29/10/2017	**Recreation/Free day**	
Monday, 30/10/2017	8.30 am to 1.00 pm	Dept. of Gastroenterology
	3 pm to 5.00 pm	Dept. of Peadiatrics
Tuesday, 31/10/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Ophathalmolgy
Wednesday, 01/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Microbiology
Thursday, 02/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Dermatology
Friday, 03/11/2017	8.30 am to 1.00 pm	Visit to Richardson Leprosy Centre, Miraj
Saturday, 04/11/2017	8.30 am to 1.00 pm	Dept. of Cardiology
	3 pm to 5.00 pm	Dept. of Surgery
Sunday, 05/11/2017	**Recreation/Free day**	

Tea Break : 10.30 pm to 10.45 am
Lunch Break : 1.00 pm to 3.00 pm

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COURSE ON TROPICAL MEDICINE

Duration : 23/10/2017 to 17/11/2017

COURSE SCHEDULE

Day	Time	Activity
Monday, 06/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of ENT
Tuesday, 07/11/2017	8.30 am to 5.00 pm	Pulmonology
Wednesday, 08/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Oral Surgery
Thursday, 09/11/2017	Visit to Bel-Air - Panchgani	
Friday, 10/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Pediatrics
Saturday, 11/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Radiology
Sunday, 12/11/2017	**Recreation/Free day**	
Monday, 13/11/2017	8.30 am to 1.00 pm	Community Medicine & Visit to Primary Health Centre
	3 pm to 5.00 pm	Dept. of Orthopaedics
Tuesday, 14/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept.of Radiotherapy
Wednesday, 15/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Dermatology
Thursday, 16/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Dept. of Opthalmology
Friday, 17/11/2017	8.30 am to 1.00 pm	Dept. of Medicine
	3 pm to 5.00 pm	Valedictory

Tea Break : 10.30 pm to 10.45 am
Lunch Break : 1.00 pm to 3.00 pm

Tropical Medicine Student For the month of November, 2017

Sr. No.	Name	Subject	Period
1.	Mr. Carlson Scott James	Occupational Medicine	27/11/2017 to 22/12/2017

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Karad, Dist. Satara (Maharashtra State) Pin : 415 110 Tel : 02164 -241555-8 Telefax : 02164 243272/243273
Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref.: KIMSDU/AR.Acd./03/218/ 2017 Date: 18/10/2017

To,
Scott Carlson, MD
Resident
Occupational and Environmental Medicine Residency
Uniformed Services University of the Health Sciences
Bethesda, Maryland, USA

SUBJECT : Invitation Letter for Scott Carlson, MD , Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Scott Carlson, MD is a Medical Doctor in training at Uniformed Services University of Health Sciences. He is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Scott Carlson, MD will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 23 November, 2017 to 23 December, 2017

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
9822288008
www.kimsuniversity.in

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KIMS DEEMED UNIVERSITY, KARAD

COURSE ON TROPICAL MEDICINE
Duration – 27/11/2017 to 22/12/2017

COURSE SCHEDULE

Dr. Scott Carlson

Date	Time	Activity
Monday, 27/11/2017	11.30am	Introduction, Orientation & Campus Visit
Tuesday, 28/11/2017	09:00 am	Pulmonology
Wednesday, 29/11/2017	10:00 am	Factory (2) visit (Jayawant Sugars Ltd.)
	03:00 pm	Prioritization of objectives of the projects
Thursday, 30/11/2017	10:00 am	Visit to Kale PHC
	11:45 am	Visit to Library
	03:30 pm	Meeting with Clinical Departments for protocol Setting
Friday, Saturday, Sunday, 01, 02, 03/12/2017	**Free days**	
Monday, 04/12/2017	10:00 am	Visit to Sugar factory
	03:00 pm	Dept. of Medicine
Tuesday, 05/12/2017	10:00 am	Evaluation of Health of migrant workers @ factory 1
	03:00 pm	Dept. of Medicine
Wednesday, 06/12/2017	10:00 am	Evaluation of Health of Truck/Tractor drivers @ factory 1
Thursday, 07/12/2017	10:00 am	Evaluation of Health of migrant workers @ factory 2
Friday, 08/12/2017	10:00 am	Visit to DTC / DLC / DMO at Satara
Saturday, 09/12/2017	10:00 am	Visit to cottage hospital
Sunday, 10/12/2017	**Recreation/Free day**	
Monday, 11/12/17	10:00 am	Dept. Of Medicine
Tuesday, 12/12/2017	10:00 am	Dept. Of Medicine
Wednesday, 13/12/2017	10: 00 am	Dept. Of Microbiology
	03:00 pm	Dept. of Pathology
Thursday, 14/12/2017	10:00 am	Data analysis & project writing
Friday, 15/12/2017	10:00 am	Dept. Of Medicine
	03:00 pm	Dept. of Pathology
Saturday, 16/12/2017	10:00 am	Dept. of Medicine
	03:00 pm	Dept. Of Radiology
Sunday, 17/12/2017	**Recreation/Free day**	

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Date	Time	Activity
Monday, 18/12/2017	10:00 am	Dept. of Medicine
	03:00 pm	Dept. Of Paediatrics
Tuesday, 19/12/2017	10:00 am	Dept. of Medicine
	03:00 pm	Dept. of Ophthalmology
Wednesday, 20/12/2017	10:00 am	Dept. of Orthopaedics
	11:30 am	Dept. Of Surgery
	03:00 pm	Dept. Of ENT
Thursday, 21/12/2017	10: 00am	Dept. Of Dermatology
	03 :00 pm	Palmonology
Friday, 22/12/2017	10:00 am	Dept. of Medicine
	06:30 pm	Departure

Tea Break : 10:30 am to 10: 45 am

Lunch Break : 01:00 pm to 03:00 pm

The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, Deemed university.

Tropical Medicine Student For the month of January, 2018

Sr. No.	Name	Subject	Period
1.	Ms. Holly Harris Berkley	GYN	02/01/2018 to 26/01/2018

Asst. Registrar (Academics)
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Website : www.kimsuniversity.in E-mail : contact@kimsuniversity.in

Ref.: KIMSDU/AR.Acd./03/217/ 2017 Date: 13/10/2017

To,
Holly Berkley
ENS, MC, USN
F. Edward Hébert School of Medicine, Class of 2018
Uniformed Services University of Health Sciences
Bethesda, Maryland, USA.

SUBJECT : Invitation Letter for Holly Berkley , Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Holly Berkley is a Medical Doctor in training at Uniformed Services University of Health Sciences. She is to visit India. Holly Berkley will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 02 January, 2018 to 26 January, 2018.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS Deemed University, Karad.
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Schedule for Ms. Holly Berkley

Date	09.00 am to 01.00 pm	03.00 pm to 05.00 pm
02.01.2018	Introduction & Orientation	Design the project
03.01.2018	Ward rounds & OPD	Collection of data
04.01.2018	Gyn. OR	Collection of data
05.01.2018	Oncology, RT, Chemotherapy	Anatomy
06.01.2018	Gyn. OR	Pathology
07.01.2018	**Sunday**	
08.01.2018	Ward rounds & OPD	Microbiology
09.01.2018	Visit to Helwak PHC	Radiology
10.01.2018	Ward rounds & OPD	Pediatrics
11.01.2018	Visit to District centers of TB/Malaria/Leprosy	
12.01.2018	Oncology, RT, Chemotherapy	Ophthalmology
13.01.2018	Ward rounds & OPD, IPD	
14.01.2018	**Sunday**	
15.01.2018	PCPNDT (Gender discrimination)	ENT
16.01.2018	Cancer Screening program	Dermatology
17.01.2018	PPTCT (HIV) program	General Surgery
18.01.2018	Family planning (OC, Cu.T.)	Orthopedics
19.01.2018	Cancer Screening program	Medicine
20.01.2018	Ward rounds & OPD	
21.01.2018	**Sunday**	
22.01.2018	Gyn. OR	Medicine
23.01.2018	Ward rounds & OPD	Final drafting of project
24.01.2018	Gyn. OR	Presentation of the project
25.01.2018	Ward rounds & OPD	Tuberculosis

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Tropical Medicine Student For the month of March, 2018

Sr. No.	Name	Subject	Period
1.	Mr. Robert Burnham Laverty	General Surgery	25/03/2018 to 20/04/2018

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KIMS MEDICAL ELECTIVE

Duration : 26/03/2018 to 20/04/2018

COURSE SCHEDULE - Robert Laverty

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 1		
26.03.2018 Monday	11.00 am to 01.00 pm	Introduction & Orientation of the campus
	03.00 pm to 05.00 pm	Dept. of Anatomy
27.03.2018 Tuesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm 06.00 pm	Evening OPD, PG discussions & ward round
28.03.2018 Wednesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Microbiology
	05.00 pm to 06.00 pm	PG discussions & ward round
29.03.2018 Thursday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
30.03.2018 Friday	08.00 am01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Pathology
	05.00 pm to 06.00 pm	PG discussions & ward round
31.03.2018 Saturday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	PG discussions & ward round
01.04.2018 Sunday	Free day / Recreation	

Asst. Registrar (Academics)
KIMS "Deemed to be University" Kar

KIMS MEDICAL ELECTIVE

Duration : 26/03/2018 to 20/04/2018

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 2		
02.04.2018 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
03.04.2018 Tuesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Radiology
	05.00 pm to 06.00 pm	PG discussions & ward round
04.04.2018 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
05.04.2018 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Pediatrics
	05.00 pm to 06.00 pm	PG discussions & ward round
06.04.2018 Friday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
07.04.2018 Saturday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	PG discussions & ward round
08.04.2018 Sunday	Free day / Recreation	

KIMS MEDICAL ELECTIVE

Duration : 26/03/2018 to 20/04/2018

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 1		
09.04.2018 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Pediatrics
	05.00 pm to 06.00 pm	PG discussions & ward round
10.04.2018 Thursday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 04.00 pm	Lunch break
	04.00 pm to 06.00 pm	Evening OPD, PG discussions & ward round
11.04.2018 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Orthopedics
	05.00 pm to 06.00 pm	PG discussions & ward round
12.04.2018 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Cardiology
	05.00 pm to 06.00 pm	PG discussions & ward round
13.04.2018 Friday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Radiotherapy
	05.00 pm to 06.00 pm	PG discussions & ward round
14.04.2018 Saturday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	PG discussions & ward round
15.04.2018 Sunday	Free day / Recreation	

KIMS MEDICAL ELECTIVE

Duration : 26/03/2018 to 20/04/2018

COURSE SCHEDULE

DAY	TIME	DEPARTMENT
Posting – Surgery Unit 2		
16.04.2018 Monday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Ophthalmology
	05.00 pm to 06.00 pm	PG discussions & ward round
17.04.2018 Tuesday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Ob/Gyn
	05.00 pm to 06.00 pm	PG discussions & ward round
18.04.2018 Wednesday	08.30 am to 10.00 am	Ward Rounds
	10.00 am to 02.00 pm	OPD (Out Patient Department)
	02.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of ENT
	05.00 pm to 06.00 pm	PG discussions & ward round
19.04.2018 Thursday	08.00 am to 01.00 pm	OT (Operation Theatre)
	01.00 pm to 03.00 pm	Lunch break
	03.00 pm to 05.00 pm	Dept. of Dermatology
	05.00 pm to 06.00 pm	PG discussions & ward round
20.04.2018 Friday	11.00 am	Valedictory & Departure

Tropical Medicine Students For the month of November, 2018

Sr. No.	Name	Subject	Period
1.	Emadh Suleman Madha	General Surgery	19/11/2018 To 14/12/2018
2.	Tarah Ruth Mayer Woodle	General Surgery	19/11/2018 To 14/12/2018

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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/139/ 2018 Date: 22/06/2018

To,
Emad Madha
2LT, MSC, USA
Uniformed Services University School of Medicine, Class of 2019
Bethesda, Maryland, USA

SUBJECT : Invitation Letter for *Emad Madha*, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Emad Madha is a Medical Doctor in training at Uniformed Services University of Health Sciences. He is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. *Emad Madha* will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 19th November, 2018 to 14th December, 2018.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/136/ 2018 Date: 22/06/2018

To,
Tarah Woodle
2d LT, MSC, USAF,
School of Medicine, MS4
USUHS, USAF, Class of 2019

SUBJECT : Invitation Letter for Tarah Woodle , Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Tarah Woodle is a Medical Doctor in training at Uniformed Services University of Health Sciences. She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Tarah Woodle will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 19 November, 2018 to 14 December, 2018.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
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COURSE ON TROPICAL MEDICINE
Duration – 19/11/2018 to 14/12/2018

COURSE SCHEDULE

Emadh Madha & Tarah Woodle

Date	Time	Department
19/11/2018, Monday	11.30am	Introduction, Orientation & Campus Visit
	02:00 to 04: 00	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
20/11/2018, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of Radiology
	05:00 pm to 06:00 pm	PG discussions & ward round
21/11/2017,Wednesday	10:00 am to 02:00 pm	**Visit to DTC / DLC / DMD at Satara**
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of Medicine
	05:00 pm to 06:00 pm	PG discussions & ward round
22/11/2018, Thursday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Ob/Gyn.
	05:00 pm to 06:00 pm	PG discussions & ward round
23/11/2018, Friday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
24/11/2018, Saturday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	PG discussions & ward round
25/11/2018, Sunday	**Recreation/Free day**	

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26/11/2018, Monday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Cardiology
	05:00 pm to 06:00 pm	PG discussions & ward round
27/11/2018, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of ENT
	05:00 pm to 06:00 pm	PG discussions & ward round
28/11/2018, Wednesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of Orthopedics
	05:00 pm to 06:00 pm	PG discussions & ward round
29/11/2018, Thursday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Radiotherapy
	05:00 pm to 06:00 pm	PG discussions & ward round
30/11/2018, Friday	**Visit to Richardson Leprosy Centre, Miraj**	
01/12/2018, Saturday	08:30 am to 01:00 pm	OT (Operation Theatre)
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	PG discussions & ward round
02/12/2018, Sunday	**Recreation/Free day**	
03/12/2018, Monday	08:30 to 01:00	Community Medicine & Visit to Primary Health Care Centre
	01:00 to 03:00	Lunch Break
	03:00 to 05:00	Dept. Of Anatomy

04/12/2018, Tuesday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Dermatology
	05:00 pm to 06:00 pm	PG discussions & ward round
05/12/2018, Wednesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
06/12/2018, Thursday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Microbiology
	05:00 pm to 06:00 pm	PG discussions & ward round
07/12/2018, Friday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dental Hospital
	05:00 pm to 06:00 pm	PG discussions & ward round
08/12/2018, Saturday	08:30 am to 01:00 pm	OT (Operation Theatre)
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	PG discussions & ward round
09/12/2018, Sunday	**Recreation/Free day**	
10/12/2018, Monday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of Pathology
	05:00 pm to 06:00 pm	PG discussions & ward round
11/12/2018, Tuesday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Pediatrics
	05:00 pm to 06:00 pm	PG discussions & ward round

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12/12/2018, Wednesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Dept. Of Opthalmology
	05:00 pm to 06:00 pm	PG discussions & ward round
13/12/2018, Thursday	08:30 am to 01:00 pm	OT (Operation Theatre)
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	PG discussions & ward round
14/12/2018, Friday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Valedictory Programme

Tea Break : 10:30 am to 10: 45 am

Lunch Break : 01:30 pm to 03:30 pm

The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, Deemed university.

Asst. Registrar (Academics)
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Tropical Medicine Student For the month of December,2018

Sr. No.	Name	Subject	Period
1.	Samone Franzese	Medicine	01/12/2018 to 07/01/2019

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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/135/ 2018 Date: 22/06/2018

To,
Samone Franzese, MD
CPT, MC
Family Medicine, PGY 3
Womack Army Medical Center
Fort Bragg, NC

SUBJECT : Invitation Letter for Samone Franzese, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Samone Franzese is a Medical Doctor in training at Uniformed Services University of Health Sciences. She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Samone Franzese will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29 November, 2018 to 08 January, 2019.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
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COURSE ON TROPICAL MEDICINE
Duration – 01/12/2018 to 07/01/2019

COURSE SCHEDULE – MEDICINE

Samone Franzese

Date	Time	Department
01/12/2018, Saturday	11.30 am	Introduction, Orientation & Campus Visit
	02:00 pm to 04: 00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
02/12/2018, Sunday	**Recreation/Free day**	
03/12/2018, Monday	08:30 am to 01:00 pm	Community Medicine & Visit to Primary Health Care Centre
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Anatomy
04/12/2018, Tuesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Dermatology
	05:00 pm to 06:00 pm	PG discussions & ward round
05/12/2018, Wednesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
06/12/2018, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Microbiology
	05:00 pm to 06:00 pm	PG discussions & ward round
07/12/2018, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dental Hospital

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	05:00 pm to 06:00 pm	PG discussions & ward round
08/12/2018, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	Casualty
09/12/2018, Sunday	**Recreation/Free day**	
10/12/2018, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Pathology
	05:00 pm to 06:00 pm	PG discussions & ward round
11/12/2018, Tuesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Pediatrics
	05:00 pm to 06:00 pm	PG discussions & ward round
12/12/2018, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Ophthalmology
	05:00 pm to 06:00 pm	PG discussions & ward round
13/12/2018, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	PG discussions & ward round
14/12/2018, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. of Radiology
15/12/2018, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break

	03:00 onwards	Casualty
16/12/2018, Sunday	10:00 am to 02:00 pm	**CME on Breast Imaging Update (Radiology)**
17/12/2018, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Ob/Gyn.
	05:00 pm to 06:00 pm	PG discussions & ward round
18/12/2018, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	General Camp
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
19/12/2018, Wednesday	10:00 am to 02:00 pm	**Visit to Richardson Leprosy Centre, Miraj**
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
20/12/2018, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Cardiology
	05:00 pm to 06:00 pm	PG discussions & ward round
21/12/2018, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of ENT
	05:00 pm to 06:00 pm	PG discussions & ward round
22/12/2018, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	Casualty
23/12/2018, Sunday	**Recreation/Free day**	

24/12/2018, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Radiotherapy
	05:00 pm to 06:00 pm	PG discussions & ward round
25/12/2018, Tuesday	**Holiday (Christmas)**	
26/12/2018, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Orthopaedics
	05:00 pm to 06:00 pm	PG discussions & ward round
27/12/2018, Thursday	10:00 am to 02:00 pm	
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
28/12/2018, Friday	08:30 am to 10:00 pm	**Visit to OTC / DLC / DMD at Satara**
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	OPD (Out Patient Department)
	05:00 pm to 06:00 pm	PG discussions & ward round
29/12/2018, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm onwards	Casualty
30/12/2018, Sunday	**Recreation/Free day**	
31/12/2018, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Surgery
	05:00 pm to 06:00 pm	PG discussions & ward round
01/01/2019, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	General Camp

	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
02/01/2019, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	OPD (Out Patient Department)
	05:00 pm to 06:00 pm	PG discussions & ward round
03/01/2019, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	OPD (Out Patient Department)
	05:00 pm to 06:00 pm	PG discussions & ward round
04/01/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	OPD (Out Patient Department)
	05:00 pm to 06:00 pm	PG discussions & ward round
05/01/2019, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm onwards	Casualty
06/01/2019, Sunday	**Recreation/Free day**	
07/01/2019, Monday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Valedictory Programme

Tea Break : 10:30 am to 10: 45 am

Lunch Break : 01:30 pm to 03:30 pm

The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, Deemed university.

Asst. Registrar (Academics)
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Tropical Medicine Students For the month of February, 2019

Sr. No.	Name	Subject	Period
1.	Morgan C. Gettle	Medicine	29/01/2019 to 23/02/2019
2.	Mary B. Ford	Medicine	29/01/2019 to 23/02/2019
3.	Elena Shahbazi	Medicine	29/01/2019 to 23/02/2019

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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/203/ 2018 Date: 11/09/2018

To,
Morgan Cepelak Gettle
Doctor of Osteopathy
Major, O-4, USAF
PGY-3, Internal Medicine
San Antonio Uniformed Services Health Education Consortium

SUBJECT : Invitation Letter for Morgan Cepelak Gettle, San Antonio Uniformed Services Health Education Consortium.

Morgan Cepelak Gettle is a Medical Doctor in training at San Antonio Uniformed Services Health Education Consortium. He is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Morgan Cepelak Gettle will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 26th January to 25th February, 2019.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
+91-9822288008
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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/161/ 2018 Date:18/07/2018

To,
Mary B. Ford, MD
CPT, MC, USA
Internal Medicine, PGY3
Uniformed Services University School of Medicine,
USA.

SUBJECT : Invitation Letter for Mary B. Ford, San Antonio Military Medical Center (SAMMC) in San Antonio, TX.

Mary B. Ford is a Medical Doctor in training at San Antonio Military Medical Center (SAMMC) in San Antonio, Texas. She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Mary B. Ford will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 25th January, 2019 to 23rd February, 2019.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
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Website : www.kimskarad.in E-mail: registrar@kimskarad.in

Ref.: KIMSDU/AR.Acd./02/204/ 2018 Date:12/09/2018

To,
Elena Zitzman, MD
CPT, MC, USA
PGY-4, General Surgery
Walter Reed National Military Medical Center
USA

SUBJECT : Invitation Letter for Elena Zitzman, MD, Walter Reed National Military Medical Center USA

Elena Zitzman is a Medical Doctor in training at Walter Reed National Military Medical Center, USA . She is to visit India. This visit is collaboration between US and Indian Medical Officers to further the education of both parties. Elena Zitzman will be participating in an education program whilst in India that has a focus in rural medicine and participating in care of patients with diseases rarely seen in the US.

The dates for this invitation are 29th January to 23rd February, 2019.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
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COURSE ON TROPICAL MEDICINE

Duration 29/01/2019 to 23/02/2019

COURSE SCHEDULE – MEDICINE

Mary B. Ford, MD & Morgan Cepelak Gettle

Date	Time	Department
29/01/2019, Tuesday	11.30 am	Introduction, Orientation & Campus Visit
	02:00 pm to 04: 00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
30/01/2019, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Dermatology
	05:00 pm to 06:00 pm	PG discussions & ward round
31/01/2019, Thursday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Surgery
	05:00 pm to 06:00 pm	PG discussions & ward round
01/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Microbiology
	05:00 pm to 06:00 pm	PG discussions & ward round
02/02/2019, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	Casualty
03/02/2019, Sunday	Recreation/Free day	
04/02/2019, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department Of Pathology

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	05:00 pm to 06:00 pm	PG discussions & ward round
05/02/2019, Tuesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Anatomy
	05:00 pm to 06:00 pm	PG discussions & ward round
06/02/2019, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Ophthalmology
	05:00 pm to 06:00 pm	PG discussions & ward round
07/02/2019, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Pediatrics
	05:00 pm to 06:00 pm	PG discussions & ward round
08/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. of Radiology
09/02/2019, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	Casualty
10/02/2019, Sunday	**Recreation/Free day**	
11/02/2019, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Ob/Gyn.
	05:00 pm to 06:00 pm	PG discussions & ward round

12/02/2019, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	Community Medicine & Visit to Primary Health Care Centre
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
13/02/2019, Wednesday	10:00 am to 02:00 pm	**Visit to Richardson Leprosy Centre, Miraj**
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
14/02/2019, Thursday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Cardiology
	05:00 pm to 06:00 pm	PG discussions & ward round
15/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of ENT
	05:00 pm to 06:00 pm	PG discussions & ward round
16/02/2019, Saturday	08:30 am to 01:00 pm	Medicine ICU
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	Casualty
17/02/2019, Sunday	**Recreation/Free day**	
18/02/2019, Monday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Radiotherapy
	05:00 pm to 06:00 pm	PG discussions & ward round

19/02/2019, Tuesday	**Holiday (Ch. Shivaji Maharaj Jayanti)**	
20/02/2019, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Orthopaedics
	05:00 pm to 06:00 pm	PG discussions & ward round
21/02/2019, Thursday	10:00 am to 02:00 pm	**Visit to DTC / DLC / DMD at Satara**
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
22/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dental Hospital
	05:00 pm to 06:00 pm	PG discussions & ward round
23/02/2019, Saturday	Area of Interest	

Tea Break : 10:30 am to 10: 45 am
Lunch Break : 01:30 pm to 03:30 pm

The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, Deemed university.

Asst. Registrar (Academics)
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COURSE ON TROPICAL MEDICINE
Duration – 29/01/2019 to 23/02/2019
COURSE SCHEDULE – Surgery
Elena Shahbazi, MD

Date	Time	Department
29/01/2019, Tuesday	11.30am	Introduction, Orientation & Campus Visit
	02:00 to 04: 00	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
30/01/2019, Wednesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Department of Dermatology
	05:00 pm to 06:00 pm	PG discussions & ward round
31/01/2019, Thursday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Surgery
	05:00 pm to 06:00 pm	PG discussions & ward round
01/02/2019, Friday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Microbiology
	05:00 pm to 06:00 pm	PG discussions & ward round
02/02/2019, Saturday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	PG discussions & ward round
03/02/2019, Sunday	**Recreation/Free day**	
04/02/2019, Monday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Pathology
	05:00 pm to 06:00 pm	PG discussions & ward round

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

05/02/2019, Tuesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Anatomy
	05:00 pm to 06:00 pm	PG discussions & ward round
06/02/2019, Wednesday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of Ophthalmology
	05:00 pm to 06:00 pm	PG discussions & ward round
07/02/2019, Thursday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department Of Pediatrics
	05:00 pm to 06:00 pm	PG discussions & ward round
08/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. of Radiology
09/02/2019, Saturday	08:30 am to 01:00 pm	OT (Operation Theatre)
	01:00 pm to 03:00 pm	Lunch Break
	03:00 onwards	PG discussions & ward round
10/02/2019, Sunday	**Recreation/Free day**	
11/02/2019, Monday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Ob/Gyn.
	05:00 pm to 06:00 pm	PG discussions & ward round

12/02/2019, Tuesday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	Community Medicine & Visit to Primary Health Care Centre
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
13/02/2019, Wednesday	10:00 am to 02:00 pm	**Visit to Richardson Leprosy Centre, Miraj**
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
14/02/2019, Thursday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Cardiology
	05:00 pm to 06:00 pm	PG discussions & ward round
15/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dept. Of ENT
	05:00 pm to 06:00 pm	PG discussions & ward round
16/02/2019, Saturday	08:30 am to 01:00 pm	OT (Operation Theatre)
	01:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	PG discussions & ward round
17/02/2019, Sunday	**Recreation/Free day**	
18/02/2019, Monday	08:30 am to 10:00 am	Ward Rounds
	10:00 am to 02:00 pm	OPD (Out Patient Department)
	02:00 pm to 03:00 pm	Lunch Break
	03:00 pm to 05:00 pm	Department of Radiotherapy
	05:00 pm to 06:00 pm	PG discussions & ward round
19/02/2019, Tuesday	**Holiday (Ch. Shivaji Maharaj Jayanti)**	
20/02/2019, Wednesday	08:30 am to 01:30 pm	OT (Operation Theatre)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Department of Orthopaedics
	05:00 pm to 06:00 pm	PG discussions & ward round

21/02/2019, Thursday	10:00 am to 02:00 pm	**Visit to DTC / DLC / DMD at Satara**
	02:00 pm to 04:00 pm	Lunch Break
	04:00 pm to 06:00 pm	Evening OPD, PG discussions & ward round
22/02/2019, Friday	08:30 am to 10:00 pm	Ward Rounds
	10:00 am to 01:30 pm	OPD (Out Patient Department)
	01:30 pm to 03:30 pm	Lunch Break
	03:30 pm to 05:00 pm	Dental Hospital
23/02/2019, Saturday	Area of Interest	

Tea Break : 10:30 am to 10: 45 am

Lunch Break : 01:30 pm to 03:30 pm

The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, Deemed university.

Asst. Registrar (Academics)

Tropical Medicine Students For the month of August, 2019

Sr. No.	Name	Subject	Period
1.	Ms. Bechtold Mercy Lynn	Tropical Medicine	05/08/2019 to 14/08/2019
2.	Ms. Forrester Angelique Stacey Ann	Tropical Medicine	05/08/2019 to 14/08/2019
3.	Ms. Tran Stephanie Quynh Giao Bangkrasor	Tropical Medicine	05/08/2019 to 14/08/2019
4.	Mr. Kavanaugh Michael Joseph	Tropical Medicine	05/08/2019 to 14/08/2019
5.	Mr. Spiro Jeffrey Daniel	Tropical Medicine	05/08/2019 to 14/08/2019
6.	Mr. Mc Cullough Jeremy David	Tropical Medicine	05/08/2019 to 14/08/2019
7.	Mr. Conboy Christopher Lee	Tropical Medicine	05/08/2019 to 14/08/2019
8.	Mr. Washington Eric Ralan	Tropical Medicine	05/08/2019 to 14/08/2019
9.	Mr. Breuer James Elliot Tane	Tropical Medicine	05/08/2019 to 14/08/2019

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Karad, Dist. : Satara (Maharashtra) India Pin : 415 110
Website : www.kimskarad.in

Ref.: KIMS/RN/MLA/Aug/2019 Date: 08/08/2019

To,
Bechtold, Mercy
LT USN UNIFORMED
FTW TX (USA)

SUBJECT : Invitation Letter for Bechtold, Mercy, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Bechtold, Mercy, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
www.kimskarad.in
arc2756@gmail.com
araccademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Ref : KIMSDU/AR/Acd./2019/ 2019 Date: 08/08/2019

To,
Forrester, Angelique
S Capt
USAF(US)

SUBJECT : Invitation Letter for Forrester, Angelique, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Forrester, Angelique, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 3rd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822188008
www.kimskarad.in
arc2756@gmail.com
aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Karad, Dist. Satara (Maharashtra State) Pin : 415110 Tel. 02164 241555 E Fax 02164 242270
Website : www.kimskarad.in E-mail : drjcademics@kimsdeemed.in

Ref.: KIMSDU/NA Acd Jag/107 2019 Date: 08/08/2019

To,
Tran, Stephanie
Q LT USN NAVHOSP
PORS VA (USA)

SUBJECT : Invitation Letter for Tran, Stephanie, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Tran, Stephanie, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 10th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kavlagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
www.kimskarad.in
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aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Karad, Dist. Satara, [illegible]
Website : www.kimskarad.in
[illegible]

Ref.: KIMSDU/AR/Aug/[illegible]/2019 Date: 08/07/2019

To,
Kavanaugh, Michael
[illegible]
FORS VA (US)

SUBJECT : Invitation Letter for Kavanaugh, Michael, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Kavanaugh, Michael, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
www.kimskarad.in
arc2256@gmail.com
aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

[illegible]

Ref.: [illegible] Date: [illegible]

To,

Spiro, Jeffrey

[illegible]

[illegible]

SUBJECT : Invitation Letter for Spiro, Jeffrey, **Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.**

Spiro, Jeffrey, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
www.kimskarad.in
arc2756@gmail.com
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Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Ref.: KIMS/KUMRA/Acd/036/07/2019 Date: 08/08/2019

To,
McCullough, Jeremy
D LCDR USN USMC
HMH-465 (US)

SUBJECT : Invitation Letter for McCullough, Jeremy, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

McCullough, Jeremy, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.
The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
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arc2756@gmail.com

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Karad, Dist. : Satara (Maharashtra State) Dn. 415110 Tel. : 02164-241555 Fax 02164-242272/242170
Website : www.kimskarad.in E-mail : aracademics@kimskarad.in

Ref.: KIMSDU/AR.Acd/2019-20/ Date: 08/08/2019

To,
Conboy, Christopher
LT USN NAVHOSP
BREMERTON WA (USA)

SUBJECT : Invitation Letter for Conboy, Christopher, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Conboy, Christopher, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
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Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Ref: KIMSDU/MA Arc/Academy/2019 Date: 08/04/2019

To,
Washington, Eric
R CPT USARMY
6(-MED-BDE (USA)

SUBJECT : Invitation Letter for Washington, Eric, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Washington, Eric, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed To Be University", Karad.
9822288008
www.kimskarad.in
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Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Ref.: KIMSDU/AR/Acd/[illegible]/2019

Date: [illegible]/2019

To,
Breuer, James
E LT USN NAVMEDCEN
SANCA (US)

SUBJECT : Invitation Letter for Breuer, James, Uniformed Services University of Health Sciences, Bethesda, Maryland, USA.

Breuer, James, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are August 2nd to August 16th, 2019. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
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aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

COURSE ON TROPICAL MEDICINE

Duration 05/08/2019 to 15/08/2019

COURSE SCHEDULE for following 9 Students

1. Ms. Bechtold Mercy Lynn,
2. Ms. Forrester Angelique Stacey Ann,
3. Ms. Tran Stephanie Quynh Giao Bangkrasor,
4. Mr. Kavanaugh Michael Joseph,
5. Mr. Spiro Jeffrey Daniel,
6. Mr. Mc Cullough Jeremy David,
7. Mr. Conboy Christopher Lee,
8. Mr. Washington Eric Ralan,
9. Mr. Breuer James Elliot Tane

Date	Time	Department
05/08/2019, Monday	09:30 am	Introduction Meeting & Campus Round
	03:00 pm	Dept. of Radiology
06/08/2019, Tuesday	09:00 am	Community Medicine (PSM)
	10:00 am	**Visit to DTC / DLC / DMD at Satara**
	03:00 pm	Dept. of Pathology
07/08/2019, Wednesday	08:30	**Visit to Richardson Leprosy Centre, Miraj**
	04:00 pm	Dept. Of FMT
08/08/2019, Thursday	08:30	Dept. of Medicine
	12:00	Dept. of ENT
	03:00 pm	Dept. of Microbiology
09/08/2019, Friday	08:30am	Dept. of Dermatology
	03:00 pm	Dept. of Ophthalmology
10/08/2019, Saturday 11/08/2019, Sunday	Weekends	
12/08/2019, Monday	Whole day	Dept. of Medicine
13/08/2019, Tuesday	09:00 am	Rural camp at Shere
	02:30 pm	Genetics Lab
	03:30 pm	Dept. of Radiology

Asst. Registrar (Academics)
"Deemed To Be University" Karad

14/08/2019, Wednesday	09:00 am	General camp at Rethare
	02:30 pm	Any department of Interest
15/08/2019, Thursday	08:00 am	Independence Day Programme
	12:00 noon	Departure for Mumbai

Tea Break: 10:45 am to 11.00 am *(can be arranged in the respective department)*
Lunch Break: 02:00 pm to 03:00 pm

The program should not be changed/altered/modified without explicit permission of Hon'ble Vice chancellor, KIMS Deemed To Be University.

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

Tropical Medicine Student For the month of January, 2020

Sr. No.	Name	Subject	Period
1.	Mr. Paul Michael Robben	Medicine	06/01/2020 to 06/02/2020

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.23) on 4 Point Scale
An ISO 9001:2015 Certified University
Declared U/S 3 of UGC Act, 1956 vide Notification No.F.9-13/2006-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist. : Satara (Maharashtra State) Pin : 415 110 Tel : 02164-241555-8 Fax: 02164-240272/242170
Website : www.kimskarad.in E-mail: principalkims@kimskarad.in

Ref.: KIMSDU/AR.Acd./03/42/2019 Date: 06/09/2019

To,

Paul Robben, MD/PhD, FACP
LTC, MC, FS USA
Fellow, Infectious Diseases
Walter Reed National Military Medical Center

SUBJECT : Invitation Letter for Paul Robben, MD/PhD, FACP LTC, MC, FS USA

Paul Robben, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are January 01, 2020 to March 31, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
arc2756@gmail.com
aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

COURSE ON TROPICAL MEDICINE

Paul Robben Medicine Schedule – 6th January to 6th February, 2020

Date	09 am to 01 pm	03 pm to 05 pm
06/01/2020	Introduction & orientation	Dept. of Pathology
07/01/2020	Dept. of Medicine	Dept. of Microbiology
08/01/2020	Dept. of Cardiology	Dept. of Radiology
09/01/2020	Dept. of Cardiology	Dept. of Radiology
10/01/2020	Dept. Ophthalmology	Dept. of Medicine
11/01/2020	Dept. of Medicine	Dept. of Medicine
12/01/2020	**Sunday**	
13/01/2020	Dept. of Medicine	Dept. of Medicine
14/01/2020	Dept. of ENT	Dept. of Medicine
15/01/2019	Dept. of Dermatology	Dept. of Medicine
16/01/2020	Dept. of Paediatrics	Dept. of Medicine
17/01/2020	Dept. of Orthopaedics	Dept. of Medicine
18/01/2020	Dept. of Surgery	Dept. of Medicine
19/01/2020	**Sunday**	
20/01/2019	Dept. of Community Medicine (PSM)	Dept. of Pathology
21/01/2020	Dept. of Ob/Gyn.	Dept. of Microbiology
22/01/2020	Dept. of Dermatology	Dept. of Medicine
23/01/2020	Dept. of Paediatrics	Dept. of Medicine
24/01/2020	Dept. of Surgery	Dept. of Medicine
25/01/2020	Dept. of Medicine	Dept. of Medicine
26/01/2019	**Sunday**	
27/01/2020	Dept. of Medicine	Dept. of Medicine
28/01/2020	Dept. of Medicine	Dept. of Medicine
29/01/2020	Dept. of Dermatology	Dental Hospital
30/01/2020	Dept. of Paediatrics	Dept. of Medicine
31/01/2020	Dept. of Medicine	Dept. of Medicine
01/02/2020	Dept. of Medicine	Dept. of Medicine
02/02/2020	**Sunday**	
03/02/2020	Dept. of Medicine	Dept. of Medicine
04/02/2020	Dept. of Medicine	Dept. of Medicine
05/02/2020	Dept. of Dermatology	Dept. of Medicine
06/02/2020	Dept. of Paediatrics	Dept. of Medicine
Dept. of CVTS as pre case availability		
General Diagnostic camp, NARRIM camp, visit to Leprosy Centre at Miraj & Satara will be arranged as and when planned. Prescribed Schedule of the day may be altered, if necessary.		

**The program should not be changed / altered / modified without explicit permission of Hon'ble Vice chancellor, KIMS, "Deemed To Be University", Karad.*

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

Tropical Medicine Student For the month of February, 2020

Sr. No.	Name	Subject	Period
1.	Mr. Shumar John Nicholas	Medicine	03/02/2020 to 07/03/2020
2.	Mr. Blickle John Griffis	Medicine	03/02/2020 to 07/03/2020
3.	Ms. Conte Lisa Maria	Medicine	03/02/2020 to 07/03/2020

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Karad, Dist. Satara (Maharashtra State) Pin - 415 110
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Tel : (02164) 241555 Fax: (02164) 243272/243179
E-mail : principal.kiems@kimsdu.ac.in

Ref.: KIMSDU/AR.Acd./03/43/2019 Date: 06/09/2019

To,
John N. Shumar, MD,
CPT USARMY DHA WRNMMC (US)

SUBJECT : Invitation Letter for John N. Shumar, MD, CPT USARMY DHA WRNMMC (US)

John N. Shumar, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are February 03, 2020 to March 08, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
arca256@gmail.com
arcademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
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Website : www.kimskarad.in E-mail : principal@kimskarad.in

Ref.: KIMSDU/AR.Acd./03/04/2019 Date: 28/03/2019

To,
John Blickle,
G CPT USARMY DHA WRNMMC (USA)

SUBJECT : Invitation Letter for John Blickle, G CPT USARMY DHA WRNMMC (USA)

John Blickle, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of his course work, he will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are February 03, 2020 to March 08, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
arca256@gmail.com
aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

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Website : www.kimsdu.edu.in E-mail : principalkims@kimsdu.edu.in

Ref.: KIMSDU/AR.Acd/03/115/2019 Date: 28/12/2019

To,
Ms Lisa Conte,
M CPT USARMY DHA WRNMMC (USA)

SUBJECT : Invitation Letter for Ms Lisa Conte, M CPT USARMY DHA WRNMMC (USA)

Ms Lisa Conte, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work, she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are February 03, 2020 to March 08, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
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aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

COURSE ON TROPICAL MEDICINE

Medicine Schedule– 03/02/2020 to 07/03/2020

(John Shumar, John Blickle & Lisa Conte)

Date	09 am to 01 pm	03 pm to 05 pm
03/02/2020	----------	Introduction & orientation
04/02/2020	Dept. of Medicine	Dept. of Microbiology
05/02/2020	Dept. of Cardiology	Dept. of Radiology
06/02/2020	Dept. of Cardiology	Dept. of Radiology
07/02/2020	Dept. Ophthalmology	Dept. of Medicine
08/02/2020	Dept. of Medicine	Dept. of Medicine
09/02/2020	**Sunday**	
10/02/2020	Dept. of Medicine	Dept. of Medicine
11/02/2020	Dept. of ENT	Dept. of Medicine
12/02/2020	Dept. of Dermatology	Dept. of Medicine
13/02/2020	Dept. of Paediatrics	Dept. of Medicine
14/02/2020	Dept. of Orthopaedics	Dept. of Medicine
15/02/2020	Dept. of Surgery	Dept. of Medicine
16/02/2020	**Sunday**	
17/02/2020	Dept. of Community Medicine (PSM)	Dept. of Pathology
18/02/2020	Dept. of Ob/Gyn.	Dept. of Microbiology
19/02/2020	**Holiday**	
20/02/2020	Dept. of Dermatology	Dept. of Medicine
21/02/2020	**Holiday**	
22/02/2020	Dept. of Paediatrics	Dept. of Medicine
23/02/2020	**Sunday**	
24/02/2020	Dept. of Surgery	Dept. of Medicine
25/02/2020	Dept. of Medicine	Dept. of Medicine
26/02/2020	Dept. of Dermatology	Dental Hospital
27/02/2020	Dept. of Paediatrics	Dept. of Medicine
28/02/2020	Dept. of Medicine	Dept. of Medicine
29/02/2020	Dept. of Medicine	Dept. of Medicine
01/03/2020	**Sunday**	
02/03/2020	Dept. of Medicine	Dept. of Medicine
03/03/2020	Dept. of Medicine	Dept. of Medicine
04/03/2020	Dept. of Dermatology	Dept. of Medicine
05/03/2020	Dept. of Paediatrics	Dept. of Medicine
06/03/2020	Dept. of Medicine	Dept. of Medicine
Dept. of CVTS as per case availability		
General Diagnostic camp, NARRIM camp, visit to Leprosy Centre at Miraj & Satara will be arranged as and when planned. Prescribed Schedule of the day may be altered, if necessary.		

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Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

Tropical Medicine Student For the month of March, 2020

Sr. No.	Name	Subject	Period
1.	Ms. Casey Erwin	Surgery	02/03/2020 to 14/03/2020
2.	Ms. Ana Winland	Surgery	02/03/2020 to 14/03/2020

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

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Website : www.kimskarad.in E-mail: aracademicals@kimskarad.in

Ref.: KIMSDU/AR.Acd./03/45/2019 Date: 06/09/2019

To,
Ms Casey Erwin
ENS, MC, USN
Uniformed Services University
School of Medicine, Class of 2020

SUBJECT : Invitation Letter for Ms Casey Erwin, USA

Ms Casey Erwin, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are March 02, 2020 to March 27, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
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Ref.: KIMSDU/AR.Acd./03/44/2019

Date: 06/09/2019

To,
Ms. Ama Winland
ENS, MC, USN
Uniformed Services University
School of Medicine, Class of 2020

SUBJECT : Invitation Letter for Ms Ama Winland, USA

Ms. Ama Winland, is participating in the tropical medicine course at the Uniformed Services University of Health Sciences. As part of her course work she will be completing a practicum at Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, India. The focus of the rotation will be on the practice of medicine in a rural setting, evaluation of tropical medicine cases not routinely encountered in the USA.

The dates for this invitation are March 02, 2020 to March 27, 2020. This visit is collaboration between US and Indian Medical Officers to further the education of both parties.

Please let me know if you need further information.

Sincerely,

Ms. Archana Kaulagekar,
Asst. Registrar (Academics) &
International Student Advisor,
KIMS "Deemed to be University", Karad.
+91 9822288008
arc2756@gmail.com
aracademics@kimsuniversity.in

Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

COURSE ON TROPICAL MEDICINE
Schedule– 02/03/2020 to 27/03/2020
(Casey Erwin and Ama Winland)

Date	09 am to 01 pm	03 pm to 05 pm
02/03/2020	----------	Introduction & orientation
03/03/2020	Dept. of Surgery	Dept. of Microbiology
04/03/2020	Dept. of Cardiology	Dept. of Pathology
05/03/2020	Dept. of Cardiology	Dept. of Radiology
06/03/2020	Dept. of Surgery	Dept. Ophthalmology
07/03/2020	Dept. of Surgery	Dept. of Surgery
08/03/2020	**Sunday**	
09/03/2020	Dept. of Surgery	Dept. of Surgery
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15/03/2020	**Sunday**	
16/03/2020	Dept. of Medicine	Dept. of Orthopaedics
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19/03/2020	Dept. of Dermatology	Dept. of Surgery
20/03/2020	Dept. of Surgery	Dept. of Paediatrics
21/03/2020	Dept. of Surgery	Dept. of Surgery
22/03/2020	**Sunday**	
23/03/2020	Dept. of Surgery	Dept. of Medicine
24/03/2020	Dept. of Surgery	Dept. of Surgery
25/03/2020	**Holiday**	
26/03/2020	Dept. of Surgery	Dept. of Surgery
27/03/2020	Dept. of Surgery	Dept. of Surgery
Dept. of CVTS as per case availability		
General Diagnostic camp, NARRIM camp, visit to Leprosy Centre at Miraj & Satara will be arranged as and when planned. Prescribed Schedule of the day may be altered, if necessary.		

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Asst. Registrar (Academics)
KIMS "Deemed To Be University" Karad

J Clin Exp Dent. 2015;7(2):e197-202.

doi:10.4317/jced.51868
http://dx.doi.org/10.4317/jced.51868

Journal section: Oral Surgery
Publication Types: Research

Comparison of clinical efficacy of methylprednisolone and serratiopeptidase for reduction of postoperative sequelae after lower third molar surgery

Mouneshkumar Chappi D. [1], Kandagal V. Suresh [2], Manisha R. Patil [3], Rajendra Desai [4], David P. Tauro [5], Shiva Bharani K.N.S. [6], Mushtaq I. Parkar [7], Harsha V. Babaji [8]

[1] MDS, Senior lecturer, Department of Oral & maxillofacial surgery, School of Dental Sciences, Krishna Institute of Medical Sciences, Deemed University, Karad, Satara (District), Maharashtra (State), India
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[3] DNB, Senior Resident, Department of Pediatrics, RCSM Government Medical College, Kolhapur (District), Maharashtra (State), India
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[5] MDS, Professor & Head, Department of Oral & maxillofacial surgery, College of dental sciences, Davangere (District), Karnataka (State), India
[6] MDS, Professor, Department of Oral & maxillofacial surgery, College of Dental Sciences, Davangere (District), Karnataka (State), India
[7] MDS, Professor, Department of Oral & maxillofacial surgery, School of Dental Sciences, Krishna Institute of Medical Sciences, Deemed University, Karad, Satara (District), Maharashtra (State), India
[8] Senior lecturer, Department of Oral & maxillofacial surgery, College of Dental Sciences, Davangere (District), Karnataka (State), India

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Department of Oral Medicine and Radiology
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Karad, Satara (District)
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Chappi D. M, Suresh KV, Patil MR, Desai R, Tauro DP, Shiva Bharani-K.N.S. S, Parkar MI, Babaji HV. Comparison of clinical efficacy of methylprednisolone and serratiopeptidase for reduction of postoperative sequelae after lower third molar surgery. J Clin Exp Dent. 2015;7(2):e197-202.
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Received: 14/07/2014
Accepted: 22/11/2014

Abstract

Background: Surgical removal of mandibular third molars results in some degree of post-operative pain, swelling and trismus. These can be controlled by proper administration of local anesthesia, careful bone removal, minimal trauma to adjacent soft tissues and administration of methylprednisolone and serratiopeptidase drugs. The aim of the present study was to compare the efficacy of methylprednisolone and serratiopeptidase in controlling post-operative pain, swelling and trismus after surgical removal of impacted mandibular third molars.

Material and Methods: The subjects were divided into two groups of 50 patients each undergoing surgical removal of mandibular third molars. Group A was given methylprednisolone 4mg orally every 8th hourly and Group B was given serratiopeptidase 10 mg every 12th hourly orally. Post-operatively pain, swelling and trismus were evaluated at the end of 1st, 3rd and 5thday.

Results: The results of this study showed that methylprednisolone is an effective analgesic, while serratiopeptidase

Journal section: Oral Medicine and Pathology
Publication Types: Research

doi:10.4317/jced.51764
http://dx.doi.org/10.4317/jced.51764

Oral mucosal diseases in anxiety and depression patients: Hospital based observational study from south India

Kandagal V. Suresh [1], Prashanth Shenai [2], Laxmikanth Chatra [3], Yusuf-Ahammed A. Ronad [4], Naduvakattu Bilahari [5], Redder C. Pramod [6], Sreeja P. Kumar [7]

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[2] MDS, Senior Professor. Department of Oral Medicine and Radiology, Yenepoya Dental College and Hospital, Yenepoya university, Mangalore (District), Karnataka (State), India
[3] Senior Professor and HOD. Department of Oral Medicine and Radiology, Yenepoya Dental College and Hospital, Yenepoya university, Mangalore (District), Karnataka (State), India
[4] MDS, Senior lecturer. Department of Orthodontics and Dentifacial Orthopaedics, School of Dental Sciences, Krishna Institute of Medical Sciences, Deemed University, Karad, Satara (District), Maharashtra (State), India
[5] MDS, Senior lecturer. Department of Oral Medicine and Radiology, PSM College of Dental Science and Research, Thrisshur (District), Kerala, India
[6] MDS, Senior lecturer. Department of Oral pathology and microbiology, College of Dental Sciences, Davangere, Karanataka (State), India
[7] MDS, Senior lecturer. Department of Oral Medicine and Radiology, Amrita School of Dentistry, Kochi, Kerala (State), India

Correspondence:
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dr.suri88@gmail.com

Suresh KV, Shenai P, Chatra L, Ronad YAA, Bilahari N, Pramod RC, Kumar SP. Oral mucosal diseases in anxiety and depression patients: Hospital based observational study from south India. J Clin Exp Dent. 2015;7(1):e95-9.
http://www.medicinaoral.com/odo/volumenes/v7i1/jcedv7i1p95.pdf

Received: 06/06/2014
Accepted: 12/08/2014

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Indexed In:
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Abstract

Objectives: The objective of this study was to evaluate the prevalence of different Oral Mucosal diseases in Anxiety and Depression patients.

Material and Methods: A hospital based observational Study was conducted in the department of Psychiatry and department of Oral Medicine and Radiology. Patients who were diagnosed with Anxiety or Depression by the psychiatrists using Hamilton Anxiety and Depression scale were subjected to complete oral examination to check for oral diseases like Oral Lichen Planus (OLP), Recurrent Aphthous Stomatitis (RAS), and Burning Mouth Syndrome (BMS). Equal number of control group subjects were also included.

Results: In this study statistically significant increase in the oral diseases in patients with anxiety and depression than the control group was recorded. Oral diseases were significantly higher in anxiety patients (20.86%) than in depression (9.04%) and control group patients (5.17%). In anxiety patients, the prevalence of RAS was 12%, OLP was 5.7%, and BMS was 2.87%. In depression patients, the prevalence of RAS was 4.02%, OLP was 2.01% and BMS was 3.01%. In control group the prevalence was 2.2%, 1.33% and 1.62% in RAS, OLP and BMS respectively. RAS and OLP were significantly higher in the younger age group (18-49) and BMS was seen between the age group of 50-77 years in both study and control groups.

Original Article

Klebsiella Pneumoniae in Septicemic Neonates with Special Reference to Extended Spectrum β-lactamase, AmpC, Metallo β-lactamase Production and Multiple Drug Resistance in Tertiary Care Hospital

Shivali V Gajul, Shivajirao T Mohite, Smita S Mangalgi[1], Sanjay M Wavare[1], Satish V Kakade[2]

Department of Microbiology, Krishna Institute of Medical Sciences, Karad, Maharashtra, [1]Department of Microbiology, BLDEU's Shri BM Patil Medical College, Bijapur, Karnataka, [2]Department of Preventive and Social Medicine, Krishna Institute of Medical Sciences, Karad, Maharashtra, India

Address for correspondence: Ms. Shivali V Gajul, E-mail: shivali_gajul@yahoo.co.in

ABSTRACT

Background: β-lactamases viz., extended spectrum β-lactamase (ESBL), AmpC, and metallo β-lactamase (MBL) production in *Klebsiella pneumoniae* has led to a serious concern about septicemic neonates in Neonatal Intensive Care Units due to high resistance against commonly used antimicrobials.

Purpose: To study the prevalence of ESBL, AmpC, and MBL production in *K. pneumoniae* isolates in neonatal septicemia, to check antimicrobial susceptibility to various drugs including tigecycline; and to assess burden of multiple drug resistance (MDR).

Materials and Methods: Total 24 clinical isolates of *K. pneumoniae* isolated from 318 blood samples of suspected cases of neonatal septicemia were studied. Isolates were screened for ESBL, AmpC, and MBL production by Clinical and Laboratory Standards Institute (CLSI) disk method, AmpC cefoxitin screen, and imipenem, meropenem, ceftazidime disk screen respectively; and confirmation was done by CLSI phenotypic disk confirmatory test, AmpC sterile disk method, and imipenem ethylenediamine tetracetic acid double disk synergy test respectively. Antimicrobial susceptibility was determined by Kirby–Bauer's disk diffusion method. Efficacy of tigecycline was evaluated using United States Food and Drug Administration guidelines.

Results: Of the 24 *K. pneumoniae* isolates, co-production of AmpC + MBL was found in more number of isolates (67%) ($P < 0.0001$) compared to single enzyme production (ESBL and MBL 8% both, AmpC 12.5%). Rate of resistance for penicillins and cephalosporins was highest. Susceptibility was more for imipenem, co-trimoxazole, and meropenem. Nonsusceptibility to tigecycline was low (21%). A total of 23 (96%) isolates were MDR.

Conclusions: Routine detection of ESBL, AmpC, and MBL is required in laboratories. Carbapenems should be kept as a last resort drugs. Trend of tigecycline susceptibility has been noted in the study. Continued monitoring of susceptibility pattern is necessary to detect true burden of resistance for proper management.

Key words: AmpC, extended spectrum β-lactamase, *Klebsiella pneumoniae*, metallo β-lactamase, neonatal septicemia

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Website: www.jlponline.org

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INTRODUCTION

Neonatal deaths account for over a one-third of the global burden of child mortality. Sepsis is the significant cause of morbidity and mortality in neonates. Prematurity, low birth weight and prolonged hospitalization are the predisposing factors for neonatal sepsis. Inadequate space, shortage of staff, high occupation rates, widespread use of

Journal of Indian Academy of Forensic Medicine
Year : 2015, Volume : 37, Issue : 2
First page : (144) Last page : (147)
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Article DOI : 10.5958/0974-0848.2015.00035.4 (http://dx.doi.org/10.5958/0974-0848.2015.00035.4)

Study of Weapons Related to Mechanical Injuries In Fatal Assault Case Autopsied at Victoria Hospital

Kokatanur Chandrakant M[1]*, Chidanand P S[2], Havanur Bheemappa[3], Devadass P K[4]

[1]Assistant Professor, Department of Forensic Medicine, Krishna Institute of Medical Sciences, Karad, Maharashtra

[2]Assist. Prof, Dept. of Forensic Medicine, Shimoga Institute of Medical Sciences, Shimoga

[3]Assoc. Prof, Dept. of Forensic Medicine, Bengaluru Medical College and Research Institute, Bengaluru

[4]Dean & Director, Bengaluru Medical College and Research Institute, Bengaluru

*Corresponding Author: E-mail: chanduk2005@yahoo.com (mailto:chanduk2005@yahoo.com?cc=gbehal@indianjournals.com)

Online published on 26 May, 2015.

Abstract

Weapons are instruments used with the aim of causing damage or harm to living beings. They are used to increase the efficacy and efficiency of tasks such as in humans fighting, defence, the committing of criminal acts and the preserving of law and order. Weapons are employed individually or collectively either by single assailant or multiple assailants. Commonly knives, daggers, choppers, bambo sticks are used to inflict injuries. A cross sectional study was conducted in the Department of Forensic Medicine, Victoria Hospital, Bengaluru over a period of 1 year from Jan 2010 to Dec 2010 to highlight the weapons examined related to mechanical injuries in fata cases of assault autopsied. Single weapon was commonly used in 20 (46.51%) cases of assault. Face (67.44%) was most commonly injured. Sharp heavy weapons like choppers were commonly used in assault cases.

Keywords

Weapons, Assault, Assailant, Injuries, Fatal, Autopsy.

ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Effects of Exposure to Formaldehyde in Anatomy Dissection Hall.

Priya P Roy[1], Kumar Sai Sailesh[2], Padmanabha[3], Soumya Mishra[4] and Antony NJ[5]*.

Department of Anatomy, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.
Department of Physiology, Little Flower Institute of Medical Sciences and Research, Angamaly, Kerala, India.
Department of Physiology, Jazan University, Saudi Arabia.
Department of Physiology, JIPMER, Pondicherry, India.

ABSTRACT

Career of a medical student begins with anatomy dissection Formaldehyde is widely used in anatomy department. It is used to preserve the biological specimens and cadavers. Exposure to formaldehyde causes sick house syndrome or sick building syndrome which is characterized by non specific complaints of mucosal irritation, head ache, nausea and chest symptoms. The present study was undertaken to observe effects of exposure to anatomy laboratory on first year college students and to suggest use of an alternative chemical with less hazard potential. The present study gives additional evidence that use of formaldehyde causes discomfort for the college students. Teaching anatomy without dissection is difficult and at the same time importance must be given to the health and comfort of students. So it is need of time to replace formaldehyde with an alternative and less hazardous.

Keywords: College students, Formaldehyde.

*Corresponding author

ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Role of Anger in the Development of Left Ventricular Hypertrophy.

Priya P Roy[1], Padmanabha BV[2], Surjith M[3], Kumar Sai Sailesh[4], Antony N J[5]*.

[1]Department of Anatomy, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.
[2]Department of physiology, Faculty of Medicine, Jazan University, Jazan, KSA.
[3,4,5]Department of physiology, Little Flower Institute of Medical Sciences (LIMSAR), Angamaly.

ABSTRACT

A descriptive study has been carried out to assess the role of anger in the development of left ventricular hypertrophy among 100 patients admitted in Cardiac Centre, with the specific objectives of assessing the Anger and left ventricular hypertrophy, Identification of the relationship between Anger and left ventricular mass, finding the association of Anger with left ventricular hypertrophy and finding the association of Anger and left ventricular hypertrophy with Socio-Demographic Characteristics. Tools were socio-demographic proforma and Novaco Anger inventory –short form. The major findings of the study shows that 52% of the population had no left ventricular hypertrophy, 48% had left ventricular hypertrophy, 51% had Moderate Anger, 30% had Severe Anger and 19% had Mild Anger, the anger and left ventricular mass shows excludable minimal positive correlation, the association of age, sex and occupation with left ventricular hypertrophy is highly significant.

Keywords: Anger, left ventricular hypertrophy.

*Corresponding author

JKIMSU, Vol. 4, No. 2, April-June 2015 ISSN 2231-4261

ORIGINAL ARTICLE

Evaluation of Cefixime-Clavulanate Combination by Comparative Disk Diffusion Method in *Klebsiella pneumoniae* Clinical Isolates-An *In-Vitro* Study

Gajul S.V[1], Mohite S.T[1], Kakade S.V[2], Mangalagi S.S[3], Wavare S.M[3]*

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Abstract:

Background: Resistance to cephalosporins due to β-lactamases is a major concern worldwide. However recent trend is to use β-lactamase inhibitor combinations. Potential combination is cefixime-clavulanate. *Objective:* Present study aims at the comparative evaluation of Fixed-Dose Combination (FDC) of cefixime-clavulanate and cefixime-alone in *Klebsiella pneumoniae* clinical isolates. *Material and Methods:* Study included 200 clinical isolates of *K. pneumoniae*. The Comparative Antimicrobial Susceptibility Test (AST) of cefixime-clavulanate (5µg/10µg) combination and cefixime-alone(5µg) was done by measurement and comparison of zone of lysis produced by both. All values were expressed in mean ± SD. Paired 't' test was used to determine statistical difference between different groups under study. P values < 0.05 were considered statistically significant. Isolates were tested for Extended-Spectrum β-lactamase (ESBL), AmpC β-lactamase (AmpC) and metallo β-lactamase (MBL) production by Clinical Laboratory Standards Institute - Phenotypic Disk Confirmatory Test (CLSI-PDCT), AmpC β-lactamase sterile disk test and Imipenem-Ethylene Di-amine Tetracetic Acid – Double disk synergy test (Imipenem-EDTA DDST) respectively. *Results:* Comparative AST resulted in statistically significant (P < 0.001) increased zones in cefixime-clavulanate combination than cefixime-alone in all isolates studied. When zones were evaluated separately only in three β-lactamase producing isolates; cefixime-clavulanate combination showed much higher zones in ESBL-producers (n=30) (P < 0.001), but not in AmpC-producers (n=32) (P = 0.5559) and MBL-producers (n=06) (P = 0.7815). *Conclusion:* Present study demonstrates the best bactericidal killing effect of cefixime-clavulanate compared to cefixime-alone. It is also of therapeutic significance in the treatment of infections caused by *K. pneumoniae* producing ESBLs. We recommend comparative AST method when commercially available newer β-lactamase inhibitor combination, for which no CLSI interpretive guidelines are available; to be studied systematically, before implementing it in treatment regimen.

Keywords: Comparative AST, FDC, ESBL producing *K. pneumoniae*, Cefixime-clavulanate

Introduction:

In the recent years bacteria have acquired a variety of resistance mechanisms. Among the various mechanisms, the most important mechanism is the production of β-lactamases which destroy penicillins and cephalosporins by hydrolyzing their β-lactam nucleus.

Third-generation cephalosporins have a broad-spectrum of activity and have proved to be good

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Oro-facial-digital syndrome type II with otolaryngological manifestations

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ABSTRACT

We present a case of oro-facial-digital syndrome type II (Mohr's syndrome) which is characterized by malformations of the oral cavity, face and digits. The facial and oral features include tongue nodules, cleft or high-arched palate, missing teeth, broad nose; cleft lip. The digital features include clinodactyly, polydactyly, syndactyly, brachydactyly and duplication of the hallux.

Keywords: Duplication of hallux, oro-facial-digital syndrome, polysyndactyly, tongue nodules

INTRODUCTION

Oro-facial-digital syndromes (OFDS) are a rare heterogeneous group of development disorders in which at least nine different forms have been described. OFD II Mohr's syndrome is transmitted as an autosomal recessive condition characterized by malformations of the oral cavity, face and digits.[1] Facial and oral features include tongue nodules, cleft or high-arched palate, missing teeth, broad nose and cleft lip. Digital features include clinodactyly, polydactyly, syndactyly, brachydactyly and duplication of the hallux. Other systemic features include conductive deafness, choroidal coloboma, renal and congenital heart defects in variable combination. Diagnosis is mainly clinical. The incidence of Mohr's syndrome is very rare and occurs in one in 3 lakh live births.

We report a case of young Indian female suffering from OFD type II (Mohr's syndrome) with otolaryngological manifestations.

CASE REPORT

A 15-year-old Indian female from Western Maharashtra born out of consanguineous marriage at full term presented with difficulty in speech and decreased hearing in both ears since birth. There was no family history of genetic disease. Her mother had a first pregnancy with premature delivery at 7 months and child

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Case Report

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Bilateral absence of musculocutaneous nerve and its clinical and surgical implications

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ABSTRACT

The musculocutaneous nerve is one of the terminal branches of the lateral cord of the brachial plexus, and is responsible for innervation of the flexor musculature of the brachium, and cutaneous innervation of the lateral surface of the forearm. During dissection of 58 year old male cadaver, we observed a case of bilateral absence of the musculocutaneous nerve, the lateral root of median nerve on left side pierces and supply the coraco brachialis muscle and then gave three branches, first branch joined the medial root and formed the median nerve, second branch supplied the brachialis muscle and then continued as lateral cutaneous nerve of forearm. The third branch supplied the biceps brachii muscle. On right side lateral root of median nerve supplied the brachium close to its formation. These variations have clinical significance during surgical procedures, in brachial plexus block and in diagnostic clinical neurophysiology.

Key words: Brachial plexus, Musculocutaneous nerve, Coracobrachialis

INTRODUCTION

Variations in the formation and branching pattern of brachial plexus are common and have been reported by several authors. The brachial plexus is formed by ventral divisions of cervical 5, 6, 7, 8 and thoracic 1 segment of spinal cord roots. These roots then divide into trunks as upper, middle and lower. Ventral divisions of upper and middle trunks form lateral cord and ventral division of lower trunk form medial cord. Posterior divisions of all trunks form posterior cord. These cords give rise to different branches. Lateral cord gives three branches, lateral pectoral nerve, musculocutaneous nerve and lateral root of median nerve. The classical pathway of the musculocutaneous nerve is that it pierces the coracobrachialis muscle and then passes obliquely down to the lateral side of the arm, between biceps brachii and brachialis muscles. Then it pierces the deep fascia lateral to the tendon of biceps brachii near elbow and is continues as the lateral cutaneous nerve of the forearm. It supplies coracobrachialis, biceps brachii and brachialis in its course. The median nerve (Labourer's nerve) is formed by (C5 to T1 roots) anterolateral to the third part of axillary artery by the union of its medial root from medial cord and lateral root from the lateral cord of brachial plexus. The median nerve crosses from lateral to medial side at the level of insertion of coracobrachialis. It descends in the cubital fossa posterior to the bicipital aponeurosis and anterior to the brachialis muscle [1]. Clinicians must know about knowledge of anatomical variations in the brachial plexus such as the absence of the musculocutaneous nerve and of the muscles that are innervated by unusual nerves.

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Dexmedetomidine with low-dose ketamine for cataract surgery under peribulbar block in a patient with Huntington's chorea

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Abstract

Huntington's chorea (HC) is a rare hereditary disorder of the nervous system. It is inherited as an autosomal dominant disorder and is characterized by progressive chorea, dementia, and psychiatric disturbances. There are only a few case reports regarding the anesthetic management of a patient with HC and the best anesthetic technique is yet to be established for those patients which are at higher risk of perioperative complications. We report the anesthetic management of a 64-year-old patient with HC admitted for cataract surgery.

Keywords: Cataract, dexmedetomidine, Huntington's chorea, ketamine

INTRODUCTION

Huntington's chorea (HC) is a hereditary disorder of the nervous system affecting basal ganglia, mainly caudate nucleus. The transmission is autosomal dominant and responsible gene is chromosome 4. The prevalence of the disease is 4–10/100,000.[1] Onset is between 30 and 50 years of age.[2] Huntington's disease is characterized by a triad of symptoms: Personality changes, dementia, and choreiform movements.[3] The ominous motor symptom is dysphagia with dysfunction of pharyngeal muscles. Death is generally due to respiratory complications.[2] The anesthetic management of a patient with HC has particular challenges.[4]

CASE REPORT

A 64-year-old female weighing 55 kg, had been diagnosed with HC at the age of 54 years, not on treatment was posted for left cataract surgery. On examination, choreic movements in all limbs and head were observed. Other systemic examinations were within normal limits. Routine blood investigations and chest radiograph showed normal. Electrocardiogram (ECG) revealed left ventricular hypertrophy.

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A Case Report

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Cleido Occipitalis Cervicis: An anomalous muscle

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ABSTRACT

An additional uncommon muscle fasciculus, Cleido Occipitalis Cervicis (COC) from the anterior border of the trapezius muscle was found during routine dissection. The variant muscle slip was separated from the trapezius muscle and was inserted on the posterior surface of medial two third of shaft of the clavicle as a separate tendon and forms the cleido occipitalis cervicis triangle in the neck. Remaining muscle fibers of trapezius inserted in to the clavicle and scapula as usual. The left external jugular vein was the content of the COC triangle. These variations of the trapezius muscle should be kept in mind during surgical operations or MR imaging observations of the neck region.

Key words: Trapezius, External jugular vein, Cleido occipitalis, variation.

INTRODUCTION

Trapezius is broad superficial trapezoid shaped muscle in the back. Covers and protect most of the important muscles, vessels, nerve of the back, its fibers forms the boundary of the posterior cervical triangle and triangle of auscultation. The muscle originates from medial third of superior nuchal line, external occipital protuberance, nuchal ligament, spinous processes and supra spinous ligament of c7- T12 vertebrae. The insertion is posterior aspect of lateral third of clavicle, medial third of acromion of scapula and the upper lip of the crest of the spine of scapula. [1] Trapezius muscle present three type of fibers; upper, middle and lower. Fibers of the upper part extend from the neck downwards to the shoulders. The middle fibers are smallest and extending transversely. Lowest part of the muscle forms the largest portion of the muscle, and extends upwards superolateral direction. But this muscle is commonly variable especially in its attachment. Variation range from lack of some fibers to the total absence of muscle [2]. The occipital (Upper) fibers are mainly variable in its attachment. The presence of distinct separated bundles of the trapezium muscle is very rarely documented in the literature termed "anomalous cleido-occipitalis muscle" [3] or "cleido-occipitalis cervicalis muscle" [4]. During rotation, retraction and elevation of scapula, the trapezius along with the variant muscle (COC) contracts and may lead to the compression supra clavicular nerve and external jugular vein against the clavicle.

Case Report: During routine dissection for medical students in the department of Anatomy, Krishna Institute of Medical Sciences University, Karad. We found rare supernumerary muscle belly on left side of trapezius muscle in the 56 year old male embalmed cadaver. Some portion of muscle fibers of left side of trapezius (upper/occipital fibers) near clavicle got separated and continued as a separate tendon. This tendon inserted on posterior surface of the medial two third of the shaft of clavicle. The muscle fibers of the variant muscle originated from the medial part of the superior nuchal line. This aberrant muscle resembled to the cleido-occipitalis cervicalis portion of trapezius.

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Association between Periodontitis and Alzheimer's Disease

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Abstract

Alzheimer's disease (AD) is a neurodegenerative disease which significantly increases with age. Its onset can be either early or late. AD is characterized by the salient inflammatory features, microglial activation, and increased levels of proinflammatory cytokines which contribute to the inflammatory status of the central nervous system (CNS). Whereas, periodontitis is a common oral infection associated with the gram negative anaerobic bacteria. Periodontitis can be marked as a "low-grade systemic disease" by release of proinflammatory cytokines into systemic circulation and elevation of C-reactive protein (CRP). Inflammation is known to play a pivotal role in both the disease process serving as a connecting link between periodontitis and AD. The present review throws a light on possible enigmatic link between AD and periodontitis. This review is designed by collecting data from PubMed database using key words like "Alzheimer's disease", "inflammation", "periodontitis", and "proinflammatory cytokines".

Keywords: Alzheimer's disease, Inflammation, Periodontitis, Proinflammatory cytokines

Introduction

Alzheimer's disease (AD) is a fatal neurodegenerative disease associated with elderly age group and a major health problem in the geriatric subject's worldwide. The incidence of AD significantly increases with age, reaching almost 50% in subjects aged 85 years.[1] As the population ages and life span increases, the prevalence of AD will increase even further and is expected to affect around 14 million people in the next 50 years. A decrease in the prevalence of AD can be achieved by switching to newer treatment approaches which can be effective against probable risk factors for AD and can also delay the onset.[2]

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Review Article

Is Berberine Superior to Metformin in Management of Diabetes Mellitus and its Complications?

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ABSTRACT

Diabetes is a fast growing non infectious disease affecting people of both developed and developing countries across the globe. Treatment of diabetes mellitus requires multisystemic approach to control the disease and prevent complications. Existing oral antidiabetics though potent, exhibit multiple adverse drug reactions and side effects. Berberine would prove to be an effective alternative to these drugs as it offers protection from systemic complications and has minor side effects. This review attempts to compare the efficacy of berberine and metformin as antidiabetic and their role in deterrence of diabetic complications. Berberine scores over metformin as a antidiabetic by certain pharmacological mechanism like alpha glucosidase reductase inhibition, release of GLP 1, modification of gut microbiota, inhibition of enzyme dipeptidyl pepetidase 4 and as a insulin mimetic. Lipid lowering action and effect on polycystic ovarian disease is more superior with berberine than metformin. Thus it can be concluded that berberine can be superior to metformin in management of diabetes and in prevention of its complications.

Key words: Beberine, Metformin, Diabetes.

INTRODUCTION

Diabetes is a fast growing non infectious disease affecting people of both developed and developing countries across the globe. It is estimated that by 2025 there will be 380 million people with type 2 diabetes[1]. Type 2 diabetes mellitus is more common in occurrence than type 1 diabetes which is mainly treated with oral antidiabetics of which metformin forms the first line drug preferred among both obese and non obese diabetics[2]. Berberine hydrochloride is known as antidiabetic since long and can be labeled as 'herbal metformin'. Treatment of diabetes mellitus requires multisystemic coverage to control the disease and prevent complications. Existing oral antidiabetics though potent exhibit multiple adverse drug reactions and side effects[3]. Berberine would prove to be an effective alternative to these drugs as it offers protection from systemic complications and has minor side effects. This review attempts to compare the efficacy of berberine and metformin as antidiabetic and their role in deterrence of diabetic complications.

Articles in various national and international databases were searched with search terms like berberine and diabetes, metformin and diabetes, berberine and metformin in diabetes, berberine in diabetic complications and metformin in diabetic complications. Various databases searched were pubmed, scopus, google scholar, NIH.gov, and Medscape.com and others.

BERBERINE

Antidiabetic mechanisms of Berberine

Inhibition of hepatic neoglucogenesis

Berberine improves glucose metabolism in type 2 diabetes mellitus by inhibition of hepatic neoglucogenesis by activating AMPK-Adenosine Monophosphate Activated Protein Kinase and also improve insulin sensitivity. Inhibition of hepatic neoglucogenesis reflects in to decreased fasting blood sugar levels. This is a insulin independent action and involves mitochondrial inhibition by berberine[4].

Promotion of glycolysis

Berberine activates AMPK leading to its enhanced phophorylation resulting into consistent elevation AMP/ATP ratio and reduces consumptionof oxygen. Resulting glycolysis increases lactic acid production which suggests that stimulation of glycolysis is a mechanism to enhance glucose metabolism by berberine resulting in to decreased blood sugar. This is related to inhibition of glucose oxidation in mitochondria. Mitochondrial inhibition and increase in AMP/ATP ratio leads to AMPK activation by berberine[5].

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Research Article

Antimicrobial Profile of Antidiabetic Drug: Berberine

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ABSTRACT

Berberine is a plant alkaloid with long standing history of medicinal use in traditional Chinese, native American medicine as well as in indigenous Indian medicines. It is bright yellow coloured Iso quinolone alkaloid and is a chief alkaloid found in roots, stem and bark of bereberis species. It is procured from roots of B. aristata, B. petiolaris, B vulgaris, B.aquifolium, B. thumbergii, B. asiatica and hydrastis Canadensis.Among Chinese herbs it's primary sources are B sargentiana, Phellodendron amurense and Coptis chinensis from rhizomes and bark respectively.Berberine was demonstrated to have wide spectrum of pharmacological activities like anti hypertensive, anti inflammatory, anti oxidant, anti depressant, anti cancer, anti diarrhoeal, cholagogue, hepatoprotective and has also been used to treat oriental sores, trachoma, CHF. Most important of all its action is antimicrobial activity.

Keywords: Berberine, antimicrobial, antidiabetic

INTRODUCTION

Berberine is a plant alkaloid with long standing history of medicinal use in traditional Chinese, native American medicine as well as in indigenous Indian medicines. It is bright yellow coloured Iso quinolone alkaloid and is a chief alkaloid found in roots, stem and bark of bereberis species. It is procured from roots of B. aristata, B. petiolaris, B vulgaris, B.aquifolium, B. thumbergii, B. asiatica and hydrastis Canadensis.[1]

Among Chinese herbs it's primary sources are B sargentiana, Phellodendron amurense and Coptis chinensis from rhizomes and bark respectively.[2] Berberine was demonstrated to have wide spectrum of pharmacological activities like anti hypertensive[3], anti inflammatory[4], anti oxidant[5], anti depressant[6], anti cancer[7], anti diarrhoeal[8], cholagogue[9], hepatoprotective[10] and has also been used to treat oriental sores[11], trachoma[12], CHF[13]. Most important of all it's action is antimicrobial activity.

Recent studies have shown its effectiveness as anti diabetic in type 2 DM and hypolipidemic. The possible mechanisms for the antidiabetic action of berberine are[14,15]

1. Inhibition of alpha glucosidase activity
2. Enhanced insulin sensitivity
3. Increased glucose uptake by enhancing GLUT 4 translocation
4. Like biguanides it activates AMP activated protein kinase

Alkaloid berebrine has been added in the armamentarium of drugs used in DM type 2. It is no more a secret that India will be bearing the tag of DM capital of the world. DM is a disorder affecting multiple organs with propensity for infections of various kinds due to underlying mechanisms like hyperglycemia, oxidative stress etc. Hence it is going to be an added advantage to choose the drug for DM which has also got antimicrobial activity like berberine hydrochloride. None of the current anti diabetics can boast about additional antimicrobial action like berebrine hydrochloride.

Antibiotic resistance is a world health problem which is increasing at an alarming rate. Many frequently clinically used antibiotics like beta lactams ,aminoglycosides etc. are showing marked failure against antibiotic resistant strains like Methicillin resistant staph aureus (MRSA) and also vancomycin resistant enterococcus faecium (VREF)

This has increased nosocomial infection related health problems both in patients and medical professionals. Hence there is an urgent need for development of new antimicrobial drugs which have innovative and distinguished mechansms of action which would protect them against bacterial resistance.

Current available literature reveals that berberine hydrochloride has anti bacterial, antifungal, anti protozoal, antihelminthic and anti viral action.

1. Antibacterial spectrum covers Shigella, salmonella, klebsiella, Staph. aureus, Streptococcus pyrogenes, H pylori, Mycobacterium Tb, MDR Tb, K.pneumonias, E faecium, Trachoma (chlymadia trachomatis)
2. Antifungal - Candida species
3. Antiprotozoal - E. histolyticia, G.. lambia, T vaginitis, Leishmaniasis, Oriental sore

Antibacterial actions

Berberine hydrochloride was shown to reduce loss of water, sodium and chloride from rat ileum stimulated by

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Short Communication

A STUDY OF VANCOMYCIN RESISTANT ENTEROCOCCI ISOLATED FROM URINARY TRACT INFECTIONS

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ABSTRACT

Objective: Vancomycin resistant enterococci (VRE) are becoming a major emergence problem concern in urinary tract infection (UTI). This study provides accurate and complete description of antimicrobial susceptibility pattern and to know the prevalence of VRE in this area.

Methods: A total of 3400 urine samples were collected and processed bacteriologically. The enterococci was isolated and identified by biochemical tests and Vitek 2. VRE was determined by disc diffusion, agar dilution and Vitek 2 automated machine. Statistical analysis was done by Graph Pad InStat Software.

Results: The 143 (4.2%) enterococci were isolated from UTI patients. The incidence was higher in young females and old males. E. faecalis (78%) is the most common isolate followed by *E. faecium* (15%). The rare species (9%) like *E. durans, E. avium, E. gallinarum* and *E. hirae* were also isolated. Fosfomycin (96.5%) and nitrofurantoin (93%) was the drug of choice for enterococcal UTI while linezolid (98.6%) also can be used to treat other enterococcal infections. Among the UTI 98.6% enterococci were susceptible to vancomycin.

Conclusion: Empirical therapy for enterococcal infections should be guided by local patterns of drug resistance. Linezolid, fosfomycin or nitrofurantoin may be considered to treat the patients with VRE.

Keywords: Enterococci, Urinary Tract Infection, Vancomycin Resistance.

Enterococci are Gram positive cocci arranged in angulated pairs. They are the normal flora of the human gastrointestinal tract and are also important nosocomial pathogens [1]. The genus *Enterococcus* includes more than 29 species. According to recent studies 80% of clinical isolates are *Enterococcus faecalis* and is followed by *E. faecium* (10-15%). *E. durans, E. avium, E. raffinosus, E. gallinarum, E. casseliflavus,* and *E. hirae* are the rare species reported in India [1, 2].

Enterococci are isolated from various infections. They have an ability to cause a variety of infections like urinary tract infection (UTI), abdominal and pelvic abscesses, peritonitis, bacteraemia, sepsis, intravascular catheter infection, infection of wounds, and other rare infections [3]. The Center for Disease Control and Prevention's National Nosocomial Surveillance Survey listed enterococci as the second most common cause of nosocomial UTI [4].

There is also an emergence of acquired resistance to vancomycin, which has been increasingly reported from all parts of the world. Very limited numbers of antibiotic are available for treating enterococcal infections and currently there is no ideal antibiotic regimen with bactericidal activity for serious infections caused by vancomycin resistant enterococci (VRE) [5]. It is crucial to provide accurate and complete description of antimicrobial susceptibility pattern and current possibility for treatment of enterococcal urinary tract infections. Studies are required to clarify epidemiology of VRE infection in these areas and this is possible by an investigation of VRE among patients. The present study is a prospective and cross sectional study conducted from Oct. 2008 to Sept. 2012 in the Dept. of Microbiology, at Krishna Institute of Medical Sciences, Karad, Maharashtra. Informed consent was obtained from all the patients. The study was approved by our institutional ethical committee. The 3, 400 midstream or catheterised urine samples were collected from suspected urinary tract infection patients attending outpatient department or admitted at BLDEU's Shri. B. M. Patil Medical College, Hospital and Research Centre, Vijaypur, Karnataka and processed bacteriologically. The urine specimens were inoculated on Mac-Conkey agar and Cysteine Lysine Electrolyte Deficient (CLED) agar for isolation. The suspected colonies (more than 10^5 colony forming unit/ml) of enterococci were identified and classified by conventional scheme of Facklam and Collins by using Gram stain, cultural characteristics and various biochemical tests such as sugar fermentation and arginine hydrolysis [6]. The rare and doubtful 23 isolates were identified by Vitek 2 automated machine. All enterococcal isolates were subjected for antibiotic sensitivity testing for commonly used antibiotics including vancomycin by Kirby Bauer's disc (from Hi-Media, Mumbai) diffusion method. Resistance to vancomycin and teicoplanin was determined by agar screen method (6 µg/ml) [7] and confirmed by agar dilution method and Vitek 2 (0.25 to 128 µg/ml) automated machine at MicroPath Laboratory, Kolhapur. *Staphylococcus aureus* (ATCC 25923), vancomycin susceptible *Enterococcus faecalis* (ATCC 29212) and vancomycin resistant *Enterococcus faecalis* (ATCC 51299) strains were used as control for antibiotic susceptibility. Statistical analysis was done by Graph Pad In Stat Software. Data was analyzed using Mean(SD), Median and Chisquare test.

In the present study, out of total 3400 urine samples, 1236 specimens yielded growth and of these 143 (4.2%) were identified as enterococci. The highest incidence was seen in the age group of 21 to 40 years comprising 35.7% each. There was no significant difference incidence of enterococcal infections among males (52%) and females (48%) (table 1). Among 143 isolates 19 (13%) isolates were from UTI in pregnant women, 14 (10%) from catheterized patients and 13 (9%) from hypertension patients and 17 (12%) were with other complications while remaining 80 (56%) patients with symptomatic bacteriuria and did not have any other complication.

Enterococcus faecalis was the major species isolated i. e. 112 (78.32%) followed by *Enterococcus faecium* i. e. 22 (15.38%). The rare species like *E. durans* (3), *E. avium* (2), *E. gallinarum* and *E. hirae* (one each) were also isolated. We could not identify two Enterococcus isolates. *E. faecium* was more resistant than *E. faecalis* and other species to most of the antibiotics but *E. faecalis* was more resistant than *E. faecium* to tetracycline (table 2).

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Personality and psychological factors: effects on dental beliefs

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Abstract

Background: Dental treatment can be highly unpleasant for anxious patients. Despite all advancements, dental anxiety continues to upset the dentist-patient relationship. The psychological factors like individual personality and familial and peer influence may alter the dental beliefs of a patient.

Aim: A cross-sectional questionnaire study was conducted among young adolescents to investigate the relationship among various psychological factors and the dental beliefs of an individual.

Materials and methods: A self-administered questionnaire was distributed among higher secondary school children, aged 15-17 years in Udupi district. The dental anxiety of the participants was measured using Modified Dental Beliefs scale and the personality traits were assessed using the Ten-Item Personality Inventory. Pearson's correlation and chi-square analysis were performed among these scales. Independent t-test was performed to compare dental anxiety scores with different socio-demographic and psychological characteristics.

Results: In all 198 students, with a mean age of 16.6 years, completed the questionnaire. A majority of the participants had lower MDBS scores. The personality traits like Emotional Stability and Openness to New Experiences showed a negative correlation with the Dental Belief scores. Apart from these, the experience at first dental visit and peer support also affected the dental beliefs of the adolescents.

Conclusion: Various psychological traits of adolescents influence their dental anxiety.

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Serological, Clinical, and Epidemiological Profile of Human Brucellosis in Rural India

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Abstract

Background:

Brucellosis is an important but neglected zoonotic disease in India. Due to frequent animal contact, high prevalence of this disease, though expected in rural population, has not been much studied.

Aim:

The study was carried out to determine serological, clinical, and epidemiological profile including associated risk factors for human brucellosis in rural India.

Materials and Methods:

In this cross-sectional study, serum samples from 1,733 individuals residing in rural areas were screened for the presence of anti-brucellar antibodies by Rose Bengal Plate test (RBPT), Serum Agglutination test (SAT), and 2-Mercaptoethanol test (2-ME). Clinical symptoms, epidemiological data including risk factors and knowledge about brucellosis were evaluated by personal interview using a structured questionnaire.

Results:

Of the 1,733 individuals, 998 had direct contact with animals, whereas 735 had no direct contact. The overall positivity rates by RBPT, SAT, and 2-ME test were 10.50% (182), 7.32% (127), and 5.88% (102), respectively. Clinical symptoms resembling brucellosis were seen in 151 (8.71%) subjects. Animal contact

ORIGINAL ARTICLE

The Relationship Between Life Course Factors, Parental Demographics, Dental Coping Beliefs and Its Influence on Adolescents Dental Visit: a Cross Sectional Study

Srinivasan R.Samuel[1], Sachin G.Khatri[2], Shashidhar Acharya[3], Snehal T.Patil[4]

ABSTRACT

BACKGROUND: *Oral Disease is a multifactorial one that includes behavioral and cultural components, and the severity of the disease depends on regularity of dental visits. The purpose of the study was to evaluate the relationship between parental demographics, life course factors, dental coping beliefs with therecent dental attendance among adolescents in Udupi Taluk.*

METHODS: *Three hundred and fifty adolescents aged 16-19 years from four randomly selected schools in Udupi Taluk participated in this cross sectional study. Information was obtained regarding their parental demographics, their early life course, dental coping beliefs and recent dental attendance. Bivariate followed by multiple logistic regression analysis was performed to elicit variables which predict recent dental attendance.*

RESULTS: *Out of the 324 adolescents who completed the questionnaire, 25.3% reported visiting a dentist within a period of one year. Childhood dental visit, childhood dental experience, housing, internal and external locus of control and self-efficacy were significantly associated with recent dental visit ($p<0.05$). Participants who lived in cement/brick houses were 4.3 times more likely to visit a dentist within one year compared to those living in hut/mud/combined houses ($p<0.05$). Adolescents with lower external (OR= 0.11, $P<0.003$) and low internal (OR=0.05, $P<0.001$) locus of control had lower odds of visiting a dentist within a year when compared with those having higher locus of control.*

CONCLUSION: *Childhood financial hardships, childhood dental visits and experiences and dental coping beliefs affect dental attendance pattern during adolescence. These factors should be considered while tailoring interventions to promote the oral health and dental attendance behaviors of adolescents.*

KEYWORDS:*Coping beliefs, dental attendance, life course, locus of control, social class*

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Implementation of Oral Health Education to Orphan Children

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PMID: 26691356

Abstract

Objective: To determine the knowledge and oral hygiene status of orphanage children in Pune and changes in them after health education.

Study design: Interventional study.

Place and duration of study: Centers for Orphan Children in Pune, India, from April to June 2014.

Methodology: A specially designed questionnaire was used to assess the dental problems and existing oral hygiene maintenance practice among children between 5 - 12 years of age (n=100) in an orphanage center. Pre- and postinterventional intra-oral examination was carried out to check their oral hygiene status which included DMFS [Decayed Missing Filled Tooth Surfaces index (for permanent teeth)], OHIS (Simplified Oral Hygiene Index) and gingival indices. Intervention was in the form of oral health education, demonstration of correct brushing technique, diet counselling and maintenance of overall oral hygiene.

Results: Present study shows that the orphans had multiple dental problems along with improper oral hygiene practices and careless attitude towards oral health. Pre- and post-interventional DMFS was compared using Wilcoxon sign rank test, which was not significant; while OHIS and gingival indices were compared by using repeat measures ANOVA($p < 0.001$) which was significant for each, respectively.

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RESEARCH ARTICLE Open Access

Global validation of the WSES Sepsis Severity Score for patients with complicated intra-abdominal infections: a prospective multicentre study (WISS Study)

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Research Journal of Pharmaceutical, Biological and Chemical Sciences

Study of the Anthropometric, Biochemical and Hematological Parameters among the Hindu Brahmin Priests of Western Maharashtra, India.

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ABSTRACT

The hindu brahmin priests are daily involve in rituals of saying rhyms and exposed to fire fumes, consume food rich in fat and carbohydrate and their lifestyle is also sedentary. Aim of this project was to study the biochemical, hematological and anthropometry parameters of the priests of Western Maharashtra, India. A total of 86 priests from Western Maharashtra, India were included. Lipid profile such as serum triglycerides ($p<0.05$, 26 %), serum cholesterol ($p<0.05$, 11.36 %) were significantly increased and there was no statistical significant alteration in serum HDL (4.65%) level of study group as compared to control group. Alanine tranaminase ($p<0.001$, 48.33%) and aspartate tranaminase ($p<0.05$, 18.21%) were statistically significantly increased of study group as compared to control group. This study shows the impact of sedentary lifestyle along with unhealthy food on the ethnic group of priest community and needs special attention as they are predisposed to alteration in the lipids and are predisposed to coronary events.

Keywords: Hindu Priests, Anthropometric, Biochemical and Hematological Parameters.

Corresponding author

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Morphometric Analysis of Supraorbital and Infraorbital Foramen in Maharastrian Skulls.

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ABSTRACT

We have undertaken the present study to conduct morphometric analysis of supraorbital and infraorbital foramen and highlight its clinical implications. 120 dry skulls of both sexes without mandible of unknown age were studied. Distance of both foramen relative to different surgical landmarks were studied. Variations were evaluated according to gender and side. The location, shape, size, direction and number of accessory foramina were observed. All measurements were taken bilaterally. Supraorbital notch was present bilaterally in 35% of skulls. Majority of skull have foramen or absent foramen on one side and notch on the other side. In 5% of the skulls foramen was present bilaterally. We conclude that knowledge of supraorbital foramen and infraorbital foramen is important in different maxillofacial surgeries and regional anaesthesia of that part.

Keywords: Supraorbital notch/foramen, Infraorbital foramen, Morphometric analysis

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Pattern of Fatal Cases of Assault Autopsied at Victoria Hospital

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ABSTRACT

Assault is crime of attacking physically. Homicide by assault is killing of a human being by another human being using mechanical force. Assailants use various types of weapons depending upon their availability. A cross sectional study involving a total of 43 fatal cases of assault was conducted in the Department of Forensic Medicine, Victoria Hospital over a period of 1 year from Jan 2010 to Dec 2010. The most common age group of victims of fatal assault was 20-29 years (51.2%) followed by 30-39 years (23.3%). Grudge was the common motive for fatal assault in 51.2% cases. Male victims (83.7%) were commonly injured as compared to females (16.3%). Sharp weapons were commonly used by assailants in 74.4% cases.

Keywords: *Homicide, Assault, Assailant, Injury*

INTRODUCTION

Homicide is killing of one human being by the act, procurement, or omission of another and the term applies to all such killings, whether criminal or not[1]. The various patterns of homicide include assault by sharp weapon, blunt weapon, firearm, strangulation, hanging, smothering, drowning, burns and poisoning[2]. The pattern of homicide may be useful indicator of the social stresses in a community and may also provide useful information for law enforcement strategies[1].

The pattern of homicides varies from country to country and is influenced by many factors which include method of killing depending on the availability of weapons as well as cultural influences which include family relationships, religious attitudes, criminal activity, drug culture, alcoholism and social, moral and political factors[3].

Homicide by assault is a cruel act of mankind. It reveals one of the darkest sides of the society. Homicidal crimes represent a reasonable proxy for all kinds of violent crimes in general and as all other violent crimes are not been recorded or notified by the system, homicide can be considered the tip of the iceberg. So homicidal crime rate data are considered among the most representative and comparable crime indicators[4].

Assault is crime of attacking physically. It is an act that threatens physical harm to a person, whether or not actual harm is done. Sec 351 Indian Penal Code defines assault as whoever makes any gesture or preparation intending or knowing it to be likely that such gesture or preparation will cause any person present to apprehend that he who makes that gesture or preparation is about to use criminal force to that person, is said to commit assault.

This study was conducted with the aim know the pattern of fatal cases of assault autopsied at Victoria hospital, Bangalore.

MATERIALS & METHOD

A cross sectional study involving a total of 43 fatal cases of assault was conducted in the Department of Forensic Medicine, Victoria Hospital over a period of 1 year from Jan 2010 to Dec 2010. All the cases coming to mortuary during the study period where the cause of death was due to assault were included in the study. The data was collected from the information furnished by deceased relatives

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Research Article

ANTIMICROBIAL UTILIZATION PATTERN OF URINARY TRACT INFECTION IN TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To study and analyze the pattern of antimicrobial utilization in urinary tract infection (UTI).

Methods: A descriptive retrospective study was conducted in tertiary care hospital for 6 months including both male and female patients of all age groups. Case sheets diagnosed with UTI based on ICD-10 disease coding were collected from medical records department. The demographic data and prescription pattern of each case sheet were evaluated in detail. Drug utilization pattern was compared among different age groups of patients.

Results: A total of 108 patients were included in the study, out of which 44.4% were males, and 55.6% were females. Most of the patients were in 40-60 years age group (40.7%). UTI confirmed by culture in 59.26% patients; in which *Escherichia coli* was isolated in 35.9% patients followed by *Klebsiella* species (14.06%) and *Pseudomonas aeruginosa* (7.8%). Cephalosporins (70.37%) were most commonly used antibiotic followed by fluoroquinolones (38.89%), penicillins (29.63%), azithromycin (17.59%), and aminoglycosides (15.74%). Among the cephalosporins, third generation parenteral was most commonly used. In penicillins, amoxicillin + clavulanic acid combination was used in 9 patients. Amikacin was most commonly used aminoglycoside followed by gentamicin. Mean duration of treatment was 6.28±3.02 days.

Conclusion: Third generation cephalosporins (ceftriaxone and cefixime) were used as first line drug in most of the cases irrespective of the causative organism. This group should be reserved for complicated UTIs.

Keywords: Urinary tract infections, *Escherichia coli*, Cephalosporins, Fluoroquinolones.

INTRODUCTION

Drug utilization has been defined as the marketing, distribution, prescription, and use of drugs on society with special emphasis on the resulting medical and social consequences [1]. For the past few decades, more attention is being given to rational prescribing. Drug utilization studies are playing a major role in detecting any faults in the therapy and also find out solutions to rectify the same.

Rational drug prescribing is defined as "the use of the least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost" [2-4]. Monitoring of prescription and drug utilization studies could identify the associated problems and provide feedback to the prescriber so as to create awareness about the irrational use of drugs [5-7]. It is necessary to define the prescribing pattern and to target the irrational prescribing habit for sending a remedial message [8].

Urinary tract infection (UTI) is defined as the presence of bacteria in urine along with symptoms of infection [9]. UTI is an extremely common condition that occurs in both male and female of all the ages. The prevalence and incidence of UTI is higher in women than in men due to several clinical factors including anatomic differences, hormonal effects, and behavioral pattern [10]. Etiology is influenced by factors such as age, diabetes, spinal cord injury, urinary catheterization, and other factors [11]. UTI is mostly caused by gram-negative aerobic bacilli found in the gastrointestinal tract. These are *Escherichia coli, Klebsiella, Enterobactor, Citrobacter,* and *Proteus*. Other common pathogens include *Staphylococcus epidermidis, Staphylococcus saprophyticus,* and *Enterococcus* species which presumably result in UTI following colonization of the vagina or perianal skin [12].

The goals of the management of UTI are: (i) Prompt diagnosis of concomitant bacteremia; (ii) prevention of progressive renal disease by prompt eradication of the bacterial pathogen, identification of abnormalities of the urinary tract and prevention of recurrent infections; and (iii) resolution of the acute symptoms of the infection. Delay in initiation of the antibacterial therapy is associated with an increased risk of renal scarring. The initial choice of antibacterial therapy is based on the knowledge of the predominant pathogens in the patient's age group, antibacterial sensitivity patterns in the practice area, the clinical status of the patient, and the opportunity for close follow-up. The patients with significant urinary tract abnormalities and/or frequent symptomatic UTI may benefit from prophylactic antibacterial therapy. The main long-term consequence of UTI is renal scarring which may lead to hypertension and end-stage renal disease. Prevention of recurrent UTI focuses on detection and correction if possible, of urinary tract abnormalities [13]. Empirical treatment goals should be based on accurate and up-to-date antimicrobial susceptibility. The objective was to study the distribution of UTI, to find out the antimicrobial sensitivity profile of microorganisms responsible for UTI, and to evaluate the antimicrobial utilization pattern in UTI in tertiary care hospital at Karad.

METHODS

The study was conducted in the Department of Pharmacology, Krishna Institute Medical Sciences, Karad, Maharashtra. This is the retrospective record based study of patients admitted to Krishna Hospital and Research Centre, Karad, Maharashtra with a diagnosis of UTI during the period of September 2012-February 2013. The case sheets were collected from the medical records department based on the ICD-10 disease coding. The demographic data and prescription pattern of

ORIGINAL RESEARCH ARTICLE

An Evaluation of Knowledge and Perception of Pharmacy Students toward Pharmacovigilance and Adverse Drug Event Reporting

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Abstract

To evaluate the knowledge and perception about pharmacovigilance (PV) and adverse drug event (ADE) reporting among undergraduate pharmacy students. A cross-sectional study was conducted in the month of August 2013 using a questionnaire form given to B. Pharmacy students of V[th] semester onwards including five different pharmacy colleges of Anand district in Gujarat. Before starting the study, approval from Institutional Ethics Committee was taken. Participants were explained properly about the study and confidentiality was maintained at all levels. A total of 300 filled forms were collected from the participants. Of these 142 (47%) were from V[th] semester, remaining were from VII[th] semester. One hundred and thirty-six students (45%) were aware of PV. One hundred and twenty-four students (41%) replied that pharmacist is qualified to report ADEs. One hundred seventy-six students (59%) replied that all types of ADEs should be reported. Two hundred and four students (68%) advocated compulsory ADE reporting. Two hundred and eighty-six students (95%) said that ADE reporting is either very important or important. Only 58 students (19%) knew about PV program of India. Pharmacists can play a crucial role in both ADE reporting and PV activities. The knowledge about PV and ADE reporting is found quite low among pharmacy students in our study. Hence, they need to be well trained on how to recognize, prevent, and report ADE as they are future pharmacy practitioners.

Key words: Pharmacovigilance, pharmacy students, adverse drug event

INTRODUCTION

There are no really safe biologically active drugs. There are only safe physicians - Harold A. Kaminetzky (1963).[1]

Complete drug safety remains elusive with no consensus in the terms of safety and method of assessment. Following-up the safety of marketed medicines for clinical use in large populations becomes essential, and the science pertaining to this is known as pharmacovigilance (PV). Cost of drug-related morbidity and mortality exceeded $177.4 billion in 2000.[2]

Adverse drug events (ADEs) are associated with significant morbidity and mortality, and are an important cause of hospitalization.[3]

In India, a huge populous country, people have easy access to drugs. They approach local community pharmacists for

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Retention of Moisture-tolerant and Conventional Resin-based Sealant in Six- to Nine-year-old Children

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Abstract

Purpose: The purpose of this study was to evaluate and compare the retention rates and development of caries in permanent molars in children sealed with moisture-tolerant, resin-based (Embrace WetBond), and conventional resin-based (Helioseal) sealant over a period of one year.

Methods: This was a double blind, split-mouth, randomized controlled trial among six- to nine-year-olds. Sixty-eight permanent mandibular first molars in 34 children were randomly assigned to be sealed with Embrace WetBond or Helioseal sealant.

Results: The final sample was 32 children with 64 teeth. At 12 months, 23 of 32 (72 percent) sealants were completely retained in Embrace WetBond, whereas only 16 of 32 (50 percent) were retained in the Helioseal group. There was a statistically significant difference in retention rates of Embrace WetBond and Helioseal sealants at 12 months ($P<.05$). At 12 months follow-up, only two teeth developed caries in Embrace WetBond; in the Helioseal group, five teeth developed caries (two initial and three enamel caries).

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Evaluation of instant desensitization after a single topical application over 30 days: a randomized trial

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ABSTRACT

Background: The aim of this study was to evaluate the efficacy of ProArgin™ (8% arginine), Gluma® and NovaMin® (5% calcium phosphosilicate) in relieving dentinal hypersensitivity immediately and over 30 days following a single topical application.

Methods: A three-cell, parallel group randomized trial was conducted among 56 patients exhibiting dentinal hypersensitivity with tooth as the unit of study. ProArgin™ paste, Gluma® Desensitizer and NovaMin® paste were applied on randomly assigned teeth in each participant. Three stimuli were tested: tactile stimulated by running an explorer and measured using VAS (1–10 scale); air blast and cold water stimulated hypersensitivity measured using the Schiff Sensitivity Scale at baseline, immediately, 15 days and 30 days after application. Friedman test and Wilcoxon test were used for within group comparisons. Kruskal–Wallis test and Mann–Whitney U test were used for between group comparisons.

Results: All three groups showed significant reductions in hypersensitivity from baseline at all time points ($p < 0.05$). ProArgin™ paste elicited a significantly higher reduction in hypersensitivity ($p < 0.016$) compared to Gluma® and NovaMin® for all stimuli at the end of 30 days.

Conclusions: A single topical application of ProArgin™ paste is significantly more effective than both a single topical application of Gluma® and NovaMin® paste in relieving dentinal hypersensitivity immediately and over 30 days.

Keywords: Arginine, dentinal hypersensitivity, Gluma®, instant desensitization, NovaMin®, ProArgin™.

Abbreviations and acronyms: DH = dentinal hypersensitivity; HEMA = hydroxyethylmethacrylate.

(Accepted for publication 25 August 2014.)

INTRODUCTION

Dentinal hypersensitivity (DH) is a common condition in daily practice, especially in patients who have abrasion, gingival recession and erosion of teeth. It ordinarily affects individuals in their 30s, although it can affect individuals aged 20–49 years. The prevalence has been reported to be 5% to 47% among the general population and significantly higher among periodontal patients.[1] The buccocervical regions of the canine and premolar teeth and sites which are most amenable to gingival recession are most commonly affected by DH.[2,3] The sensitivity experienced is characterized by short and sharp pain. Pain is triggered because of exposed dentinal tubules in response to stimuli such as thermal, tactile, osmotic, chemical or evaporative that cannot be attributed to any disease.[4]

Several theories have been proposed to explain the causes of DH, but the most accepted is hydrodynamic theory.[5] According to this theory, DH is caused by the disturbance of fluid flow within the tubules due to pressure changes, which in turn activate the nerve endings in the pulp.[6] Consequently, it is proposed that hypersensitivity can be prevented by blocking the exposed tubules and preventing fluid flow across the dentinal tubules. Customarily, the first treatment option for DH would be a desensitizing toothpaste. When used regularly over a few weeks, many patients experienced temporary relief. Self-applied desensitizing agents have the advantage of immediate availability for treatment in contrast to those applied by a professional. Most commonly used self-applied agents contain potassium compounds, but the disadvantage is the time required for relief from symptoms associated with DH, usually about 2–4 weeks.[7–10]

NovaMin® (5% calcium sodium phosphosilicate) technology in the treatment of DH is considered to be an effective agent in reducing pain symptoms. NovaMin® adheres to an exposed dentine surface and reacts with dentine to form a mineralized layer. The

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Source of Support: Nil

Original Research

Management of Biomedical Waste: An Exploratory Study

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Contributors:

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Abstract:

Background: Dental operatories pose a threat due to the high chances of infection transmission both to the clinician and the patients. Hence, management of dental waste becomes utmost importance not only for the health benefit of the dentist himself, but also people who can come into contact with these wastes directly or indirectly. The present study was conducted to find out the management of biomedical waste in private dental practice among 3 districts of Karnataka.

Materials and Methods: The study population included 186 private practitioners in 3 districts of Karnataka (Coorg, Mysore, Hassan), South India. A pre-tested self-administered questionnaire was distributed to assess the knowledge and practices regarding dental waste management. Descriptive statistics was used to summarize the results.

Results: Out of 186 study subjects, 71 (38%) were females and 115 (62%) were males. The maximum number of participants belonged to the age group of 28-33 years (29%). Undergraduate qualification was more (70%). 90 (48%) participants had an experience of 0-5 years. Chi-square analysis showed a highly significant association between participant who attended continuing dental education (CDE) program and their practice of dental waste management.

Conclusion: Education with regards to waste management will help in enhancing practices regarding the same. In order to fill this vacuum CDE programs have to be conducted in pursuance to maintain health of the community.

Key Words: Biomedical waste management, knowledge, practice, private dental practitioners

Introduction

The health care sector includes a diverse range of health care facilities, which have a size assortment from large general and specialist hospitals to small municipal dispensaries and D-type centers. All these facilities are an integral part of our society with an endeavor to reduce health problems and to eliminate imminent jeopardy to people's health. In the course of curing health problems the health care sector produce a huge amount of bio-medical waste which may be hazardous to all those who come in contact with this waste. Hazardous waste management is a concern for every health care organization.[1]

Dental practices generate large amounts of waste paper, plastic, latex, and glass, much of which is contaminated with body fluids. An increasing variety of items that have hitherto been reused are now designed to be disposable, such as custom tips and triple syringe tips. Operating gloves are worn for almost all patient contact, resulting in a substantial increase in the amounts of latex and vinyl entering the waste stream. Surgical instruments such as local anesthetic needles, scalpel blades, and suture needles constitute a special category of contaminated sharp items. Dental practices also produce small amounts of waste mercury, silver and various solvents, and other chemicals.[2]

Waste disposal from dental practices can be divided into two main areas. First, there is environmental burden of a variety of hazardous products, and second, the more immediate risks of potentially infectious material that may be encountered by the individuals handling the waste. In 1998, the Ministry of Environment and Forest in India defined biomedical waste as, "Any waste generated during the diagnosis, treatment or immunization of human beings or animals or in research activities used in production or testing of biologicals." Dental waste is a subset of the hazardous biomedical waste. Dental practices generate large amounts of cotton, plastic, latex, glass, sharps, extracted teeth, and morally it becomes the responsibility of the health care provider. Chemical wastes such as lead foil mercury from amalgam restorations, photographic chemicals like fixer, and developer are also generated in dental practice, which if not safely disposed can pose a threat to the environment and public health. Hospital-acquired infections have been estimated at 10% in the South-East Asia region and identified as one of the indicators needed

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Follicular Adenomatoid Odontogenic Tumor in Mandible: A Rare Case Report

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Abstract

Adenomatoid odontogenic tumor (AOT) is a relatively rare, benign, hamartomatous, and cystic odontogenic neoplasm that was first described more than a century ago. The lesion still continues to intrigue experts with its varied histomorphology and controversies regarding its development. The present article describes a case of cystic AOT with an unusual histomorphology associated with an impacted 44 in a 21-year-old male.

Keywords: Adenomatoid odontogenic tumors, Cystic neoplasms, Odontogenic hamartomas, Odontogenic tumors

Introduction

The adenomatoid odontogenic tumor (AOT) accounts for 2–7% of all odontogenic tumors.[1] The tumor that meets today's diagnostic criteria for AOT has been known for more than a century. Steensland's report of 1905 of an "epithelioma adamantinum" represents the earliest publication of an AOT.[2] variety of terms has been used to describe this lesion; for many years, adenoameloblastoma was more commonly use because the tumor was considered a histologic variant of the solid/multicystic ameloblastoma.[2]

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Cell- and Gene- Based Therapeutics for Periodontal Regeneration

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Abstract

Periodontitis is a disease of the periodontium, characterized by loss of connective tissue attachment and supporting the alveolar bone. Therefore, to regenerate these lost tissues of the periodontium researchers have included a variety of surgical procedures including grafting materials growth factors and the use of barrier membranes, ultimately resulting into regeneration that is biologically possible but clinically unpredictable. Recently a newer approach of delivering DNA plasmids as therapeutic agents is gaining special attention and is called gene delivery method. Gene therapy being considered a novel approach have a potential to channel their signals in a very systematic and controlled manner thereby providing encoded proteins at all stages of tissue regeneration. The aim of this review was to enlighten a view on the application involving gene delivery and tissue engineering in periodontal regeneration.

Keywords: Gene, growth factors, periodontal regeneration, stem cells, tissue engineering, vectors

INTRODUCTION

Functional regeneration of periodontal apparatus is one of the most important aims of research in current periodontal regenerative therapy. The successful periodontal regeneration is a highly challenging tasks since careful histological assessment has revealed that allogenic bone grafts and even fresh autologous bone grafts, generally become encased in a dense fibrous connective tissue in periodontal defects.[1] Thus, a current challenge faced by clinicians is the complete, reliable and reproducible regeneration of the periodontal tissues, paying way to novel treatments that utilize a cell and gene-based approaches. This current review enlightens the clinicians with the application of cell and gene-based therapeutics in periodontal tissue regeneration.

महाराष्ट्र MAHARASHTRA

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SUB. TREASURY OFFICE KARAD
ई-स्टॅम्पिंग 20 FEB 2014
SUB TREASURY OFFICER KARAD

PPP INTEGRATED COUNSELING AND TESTING CENTRES (ICTCs)

Memorandum of understanding (MOU)
Between
Krishna Institute of Medical Sciences Deemed University, Karad.
&
National AIDS Control Organisation (NACO)
Government of India,

This Memorandum of Understanding is made on 26th Feb 2014 by and between the Director General, National AIDS Control Organization, Department of Health, Ministry of Health and Family Welfare, Government of India, 9th & 6th Floor, Chandralok Building, 36, Janpath, New Delhi 110 001 (herein referred to as "NACO") on behalf of Project Director of Maharashtra State AIDS control Society, (hereafter referred to as "MSACS"), Dr. Govind Raj, I.A.S, Project Director, Acworth complex, R.A. Kidwai Marg, Wadala, Mumbai -400031

AND

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

जिल्हा प्रतिबंध व नियंत्रण कक्ष जेपक्यू सातारा

Disrtict Programme Officer
DAPCU, Satara.

महाराष्ट्र MAHARASHTRA AZ 979169

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रा. नांदलापूर, ता. कराड

SUB. TREASURY OFFICE KARAD
28 FEB 2014
SUB TREASURY OFFICER KARAD

Krishna Institute of Medical Sciences Deemed University, Karad, a facility having its office at Karad in Satara District, acting through **Dr. M.V. Ghorpade, The Registrar, Krishna Institute of Medical Sciences Deemed University, Karad** the authorized signatory, hereinafter referred to as PPP implementer, which expression shall, unless repugnant to the context, include its successor in business, administrators, liquidators and assigns or legal representatives.

I. PURPOSE OF THE COLLABORATIVE PROJECT

The purpose of the agreement is to set up NACO certified facility integrated counseling and testing centre for HIV counseling and testing in a private sector/not for profit /non governmental organizations run health facility through a public private partnership. The aim is to provide access to quality HIV counseling and testing services to clients who access private/not for profit health care system in both urban and rural areas of the country.

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Disrtict Programme Officer
DAPCU, Satara.

It is agreement between NACO (through MSACS), and **Krishna Institute of Medical Sciences Deemed University, Karad** to scaling up Integrated Counseling and Testing Centers (ICTC) / Prevention of Parent To Child Transmission of HIV centers (PPTCT) in state and Private Health facilities (private sector/not for profit /non governmental organizations run health facility Hospitals and nursing homes).

II. RESPONSIBILITIES OF THE SACS / DAPCU:

1. To supply rapid HIV diagnostic kits (3 different antigens/ principles) in quarterly advance as per annual requirement to **Krishna Institute of Medical Sciences Deemed University, Karad** subject to availability of above kits with SACS. While every effort will be made to provide uninterrupted supply of above kits, SACS will not be held responsible for any shortage of above kits due to unforeseen circumstances.
2. To provide training of staff of ICTC (staff of facility) in HIV counseling and testing in NACO approved centers. If required more than one training will be provided by the SACS.
3. To supply protective kits for delivery of HIV positive pregnant woman as per requirement to **Krishna Institute of Medical Sciences Deemed University, Karad.**
4. To provide TA/DA as per eligibility to ICTC staff of **Krishna Institute of Medical Sciences Deemed University, Karad** for attending review meeting conducted by SACS as well for collecting the HIV test kits, registers, formats etc. from the office of the SACS and for transport of coded blood sample or delivery of blood test records from **Krishna Institute of Medical Sciences Deemed University, Karad** to the SRL (State Reference Laboratory-State/district ICTC management authority) under the external quality assurance schemes (EQAS) as laid out in "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof
5. To supply PEP (Post-exposure Prophylaxis) drugs for protection of staff of ICTC in the event of accidental exposure to **Krishna Institute of Medical Sciences Deemed University, Karad** as per requirement.
6. To supply IEC material required for an ICTC such as flip charts, posters, condom demonstration models, take home materials to **Krishna Institute of Medical Sciences Deemed University, Karad** as per requirement.
7. To supply condoms required for demonstration and distribution to clients coming to the ICTC as per requirement.
8. To supply prophylactic ARV drugs for prevention of transmission from HIV positive mother to their new born babies as per national protocol.
9. To evaluate the performance of the ICTC periodically as per monitoring and evaluation tools developed by NACO/SACS.
10. To provide Registers and Formats as per "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof.
11. To provide capacity building to the staff of private sector involved in ICTC/PPTCT.
12. Monitoring support whenever required, to ensure smooth functioning of ICTC/ PPTCT in private sector. Nevertheless, also ensure the quality parameter.
13. Support Private Sector ICTC/PPTCT team in record keeping and provide the necessary information to MSACS which can be fed into CMIS format of NACO.

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Krishna Institute of Medical Sciences
Deemed University, Karad

Disrtict Programme Officer
DAPCU, Satara.

III. Responsibilities of Krishna Institute of Medical Sciences Deemed University, Karad:

1. To provide a room with suitable, sufficient and convenient space to be used for counseling purpose with adequate furniture, lighting and privacy and any other infrastructure required.
2. To provide a laboratory equipped with refrigerator, centrifuge, micropipette, needle cutter, etc for HIV testing & blood sample storing facility.
3. To designate existing staff or appoint new staff for the posts of counselor and laboratory technician in the ICTC. To also designate an existing Medical Officer as ICTC Manager.
4. To provide consumables such as needles, gloves, syringes, serum storage vials, microtips, etc. of standard quality required for HIV testing to the ICTC.
5. To provide counseling and testing services in the ICTC to any client who approaches the ICTC without discrimination **either freely or on receipt of a charge not exceeding Rs. 75/-** as per protocol laid out in the guideline text per "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. The charge will be used to defray cost for provision of the above services.
6. To entirely bear the costs related to staff salary, infrastructure and consumables required for the ICTC.
7. To respect the privacy of clients and maintain confidentiality. Provide data protection systems to ensure that records of all those who are counseled and tested are not accessible to any unauthorized person.
8. **Stand Alone PPP-ICTC (who are conducting three test, both screening and confirmatory test) will do 100% ART linkages of cases found HIV positive in facility.**
9. **Stand Alone PPP-ICTC will follow all ICTC guidelines/ instructions of NACO which ever recently published.**
10. **To provide linkages and referral facilities to all HIV positive cases detected in Stand Alone PPP ICTC center.**
11. To maintain quality assurance at the service delivery especially in HIV testing services as provided in the guideline text "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. **Krishna Institute of Medical Sciences Deemed University, Karad** will be accountable for any substandard delivery of services.
12. To participate in EQAS (External Quality Assessment Scheme) as laid out in the above mentioned guideline text. Laboratory In charge, **Krishna Institute of Medical Sciences Deemed University, Karad** will send samples in the first week of every quarter, for cross checking to the SRL (state reference laboratory-state/ district ICTC management authority) once every quarter. The laboratory technician designated by **Krishna Institute of Medical Sciences Deemed University, Karad** to ensure that these samples are collected in the first week of January, April, July and October & sent to the SRL.
13. To provide data and information to the coordinating agency to perform their duties as per the instruction and direction from SACS
14. To send monthly report to the SACS/DAPCU in CMIS format by 5th of every month in registers and records supplied by the SACS.

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Deemed University, Karad

District Programme Officer
DAPCU, Satara.

15. To use all the IEC materials, condoms, items required for laboratory use, protective kits for delivery, PEP (post exposure prophylaxis) drugs supplied by the SACS at the service delivery purpose by **Krishna Institute of Medical Sciences Deemed University, Karad.**
16. To maintain stock records for the all items and drugs provided by the SACS.
17. To maintain quality waste management of disposable items that is used in HIV testing.
18. To ensure that staff working in the blood collection room and laboratory will observe universal safety precaution (USP).
19. To ensure that ICTC staff are aware of the PEP procedure and display the name and contact information of the PEP focal point/ person as well as the location where the PEP drugs are stored.
20. To follow the national protocol for ARV prophylaxis for prevention of parent to child transmission of HIV (PPTCT).
21. To attend coordination/review meetings conducted by SACS.
22. To ensure that no research or clinical trials are done on the clients who visit the ICTC or based on data of clients who visit the ICTC's.
23. To attend review meetings at the district level and SACS level as per the supervisory protocol that is provided in the "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. To allow access to authorized NACO/SACS/DAPCU staffs who visit the ICTC to the premises and records of the ICTC.
24. To permit SACS to periodically test designated counselor and Lab. Technician for their knowledge, attitude and skills.
25. To follow the testing methodology & algorithm as mentioned in the "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof, in the laboratory by **Krishna Institute of Medical Sciences Deemed University, Karad**
26. To follow National AIDS Control Policy & State HIV/AIDS policy.
27. Test kits supplied by MSACS not to be used for routine screening of surgical patients of the facility.

IV. COMMENCEMENT

1) This Memorandum of Understanding shall become effective upon signature by the parties and certification of the facility site. It shall remain in full force and effect for a period of one year thereafter.
2) Further, the certification of the site of the collaborative testing project as "NACO/SACS designated HIV counselling and testing centre" shall run concomitantly with the present Memorandum of Understanding.
3) DAPCU will support the private sector in commencement and closely coordinate for smooth rollout.

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

Disrtict Programme Officer
DAPCU, Satara.

V. RENEWAL OF AGREEMENT

1) This Memorandum of Understanding is renewable at the option of **Krishna Institute of Medical Sciences Deemed University, Karad/SACS.**
2) Three months prior to the expiry of the Memorandum of Understanding due to efflux of time SACS shall intimate **Krishna Institute of Medical Sciences Deemed University, Karad** if it intends to renew or not to renew the Memorandum of Understanding.
3) In the event that SACS decides not to renew the Memorandum of Understanding, **Krishna Institute of Medical Sciences Deemed University, Karad** shall give notice to the patients regarding the cancellation of its certification. In the event that SACS decide to renew the Memorandum of Understanding, the terms and conditions of this Memorandum of Understanding, as may be amended, will apply.

VI. TERMINATION OF AGREEMENT

1) Any party may terminate this Memorandum of Understanding after giving three months notice to the other party at the address provided in this Memorandum of Understanding for correspondence or the last communicated for the purpose and acknowledges in writing by other party.

VII. BREACH BY The Registrar, KIMSDU, Karad

1) In case **Krishna Institute of Medical Sciences Deemed University, Karad** is not able to provide services as per agreement or defaults on the provision of this agreement or declines the patient to provide HIV counselling and testing services, it shall be liable for breach of agreement and breach of trust and other consequences which may include black listing with SACS, NACO, MOHFW, Ministry of Home affairs and external affairs.

VIII. SETTLEMENT OF DISPUTES:

1) Any dispute or difference or question arising at any time between the parties hereto arising out of or in connection with or in relation to this agreement shall be referred to and settled by arbitration under the provisions of the Indian Arbitration and Conciliation Act, 1996 or any modification or replacement thereof as applicable for the time being in India.
2) The arbitration shall be referred to an arbitrator nominated by Secretary Department of Legal Affairs, Ministry of Law and Justice, Govt. of India, Delhi. The arbitrator, if he so feels necessary, seek opinion of any healthcare personnel with experience of working in the field of HIV and care and treatment of PLHAs.
3) The place of arbitration shall be either New Delhi or the site of the collaborative laboratory, which shall be decided by the arbitral tribunal bearing in mind the convenience of the parties.
4) The decision of the arbitrator shall be final and binding on both the parties.

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DAPCU, Satara.

VIII. LAW APPLICABLE:

This Memorandum of Understanding shall be construed and governed in accordance with the laws of India.

IX. ADRESSES FOR CORRESPONDENCE

In witness thereof, the parties herein have appended their respective signatures the day and the year above stated.

Signed For and on behalf of The Registrar, Dr. M.V. Ghorpade Krishna Institute of Medical Sciences Deemed University, Karad. Signature ..... Date...26/10/2014 REGISTRAR Krishna Institute of Medical Sciences, Deemed University, Karad In the presence of Name: - Mrs. Bhakti Joshi. Signature Date 26/10/2014	Signed For and on behalf of NACO CS/DPO, DAPCU, _____ MSACS District Programme Officer DAPCU, Satara. Signature ..... Date.....28/2/2014. In the presence of Name Pundlik N. Patil Dist supervisor Signature Date.....28/2/14

६७६-६८०

आरोग्य सेवा

जा.क्र/जिशारू/आयसीटीसी/ समु.आदेश/ / २०१५
जिल्हा शल्यचिकित्सक यांचे कार्यालय,
स्व.वा.ना पाटील जिल्हा रूग्णालय,सातारा.
दिनांक: ०६/०४/२०१५

विषय :महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमांतर्गत "समुपदेशक(आयसीटीसी)" या पदावर सेवा करार वृध्दीबाबत....

संदर्भ : मा.प्रकल्प संचालक,मराएनिसो यांचे पुनर्नियुक्ती आदेश पत्र क्रं.मराएनिस/ आयसीटीसी/मु.मापन/१३-१४/८५३५-८६४७ दिनांक: ०७ /०४/२०१५

आपली महाराष्ट्र राज्य एड्स नियंत्रण संस्था,मुंबई अंतर्गत "समुपदेशक(आयसीटीसी)" या पदावर करारपध्दतीवर जिल्हा शल्यचिकित्सक,सातारा यांचे अधिनिस्त आयसीटीसी कृष्णा वै.महाविद्यालय व रिसर्च सेंटर ,कराड या ठिकाणी एकत्रित परिश्रमिकावर खालील अटींवर पुढील एकवर्षाकरीता सेवा करार वृध्दी करण्यात येत आहे.

१. आपणास एकत्रित परिश्रमिकव्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता,घरभाडे भत्ता वा इतर कोणत्याही नियमित शासकिय कर्मचाऱ्यास मिळणारे लाभ व सवलती इत्यादी अनुज्ञेय नाहीत.
२. आपल्याला इतर शासकिय कर्मचाऱ्याप्रमाणे महाराष्ट्र नागरी सेवा नियम १९८१ प्रमाणे व इतर अनुषांधिक कोणतेही सेवा नियम लागू होत नाहीत.
३. आपण कामावर हजर झाल्यानंतर शल्यचिकित्सक,सातारा या कार्यालयाने करारून दिलेल्या करार पध्दतीवरील शर्ती व विहीत नमुन्यातील करारनामा व वचनपत्रे १०० रू. च्या बॉड पेपर वरती सादर करावीत,अन्यथा तो पर्यंत आपल्याला परिश्रमिक अदा करण्यात येणार नाही.
४. आपला करार कालावधी हा दिनांक ०२/०४/२०१५ ते ३१/०३/२०१६ पर्यंत असेल .करार कालावधीत आपले कामकाज समाधानकारक नसेल तर आपली सेवा खंडीत करण्याचा अधिकार या कार्यालयास राहील.आपली पुनर्नियुक्ती ही आपल्या कामाचे समाधानकारक मुल्यमापनावर आधारीत असेल.आपली नियुक्ती ही पुर्णपणे कंत्राटी व अस्थाई स्वरूपाची असेल.
५. आपल्या सेवेच्या शर्ती व अटी अनुदान देणाऱ्या संस्थेकडून मिळालेल्या मार्गदर्शक सुचनानुसार राहतील,त्यात वेळोवेळी होणारे बदल आपणास बंधनकारक राहतील.
६. आपण करारतत्वावरील सेवा सोडताना एक महिना अगोदर या कार्यालयास सुचीत करणे किंवा एक महिन्याचे एकत्रित परिश्रमिक या कार्यालयाकडे अदा करणे बंधनकारक राहील,तसेच या कार्यालयाकडून एक महिन्याची पुर्वसुचना देऊन आपली सेवा समाप्त करण्यात येईल.
७. आपणास आवश्यकता व तातडीनुसार संस्थेच्या नियंत्रणाखालील इतर कोणत्याही सेंटरमध्ये काम करावे लागेल.
८. करार संपल्यानंतर पुढील नियुक्ती देणे किंवा न देणेबाबत महाराष्ट्र राज्य एड्स नियंत्रण संस्थेचा निर्णय अंतिम राहील.
९. आपणास करार कालावधीत मराएनिसं नियमानुसार एक पूर्ण महीन्याला २½ या प्रमाणे वार्षीक ३० किरकोळ/अर्जित रजा , १० वैद्यकिय रजा व महिला कर्मचाऱ्यांना २ महीने अर्धपगारी प्रसुती रजा व सर्व शासकिय सुट्टया देय राहतील.

Jmeans/HO
ICTC/KJMS/02/2015

जिल्हा शल्यचिकित्सक सातारा

प्रती: श्रीम. प्रमिला मानसिंग जाधव
समुपदेशक,आयसीटीसी कृष्णा हॉस्पीटल,कराड..

प्रत माहितीस्तव व कार्यवाहीस्तव
१. इनचार्ज आयसीटीसी ,कृष्णा हॉस्पीटल,कराड.
२. जिल्हा कार्यक्रम अधिकारी ,डापकू सातारा.

प्रत माहितीस्तव सादर: मा.प्रकल्प संचालक,मराएनिस मुंबई.

Jmeans HO 2.4.15

Principal Investigator
I.C.T.C. (P.P.T.C.T.)
K.H. & K.I.M.S.D.U.
Karad, Dist. Satara.

आरोग्य सेवा

जा.क्र/डापकु/आयसीटीसी/ भरती/ 12-62 / २०१५
जिल्हा एड्स नियंत्रण विभाग,
रा.ब.ना पाटील जिल्हा रूग्णालय,सातारा.
दिनांक २६ / ०३ /२०१५

विषय :महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमांतर्गत "प्रयोगशाळा तंत्रज्ञ (आयसीटीसी)" या पदावर नियुक्तीबाबत.
संदर्भ : दिनांक १० मार्च व १३ मार्च २०१५ रोजी घेण्यात आलेली सदर पदासाठीची लेखी परिक्षा व मुलाखत

आपली महाराष्ट्र राज्य एड्स नियंत्रण संस्था,मुंबई अंतर्गत "प्रयोगशाळा(आयसीटीसी)" या पदावर करारपध्दतीवर जिल्हा शल्यचिकित्सक,सातारा यांचे अधिनिस्त **कृष्णा वैद्यकिय महाविद्यालय, कृष्णा हॉस्पिटल, कराड** या ठिकाणी एकत्रित परिश्रमिकावर खालील अटीवर पुढील एक वर्षाकरीता कंत्राटी तत्वावर नियुक्ती करण्यात येत आहे. तरी आपण १० दिवसाच्या आत सदरच्या कार्यालयात हजर व्हावे ,अन्यथा सदर पदावर आपण काम करणेस इच्छुक नाही ,असे गृहीत धरून आपली निवड रद्द करण्यात येईल.

१. आपणास एकत्रित परिश्रमिक व्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता,घरभाडे भत्ता या इतर कोणत्याही नियमित शासकिय कर्मचाऱ्यास मिळणारे लाभ व सवलती इत्यादी अनुज्ञेय नाहीत.
२. आपल्याला इतर शासकिय कर्मचाऱ्यांप्रमाणे महाराष्ट्र नागरी सेवा नियम १९८२ प्रमाणे व इतर अनुषांगिक कोणतेही सेवा नियम लागू होत नाहीत.
३. आपण कामावर हजर झाल्यानंतर शल्यचिकित्सक सातारा या कार्यालयाने तयार करून दिलेल्या करार पध्दतीवरील शर्ती व विहीत नमुन्यातील करारनामा व वचनपत्रे १०० रू. च्या बॉड पेपर वरती सादर करावीत,अन्यथा तो पर्यंत आपल्याला परिश्रमिक अदा करण्यात येणार नाही.
४. आपला प्रस्तुत करार कालावधी हा दिनांक २/४/२०१५ ते ३१/०३/२०१६ पर्यंत असेल.करार कालावधीत आपले कामकाज समाधानकारक नसेल तर आपली सेवा खंडीत करण्याचा अधिकार या कार्यालयास राहील.आपली पुनर्नियुक्ती ही आपल्या कामाचे समाधानकारक मुल्यमापनावर आधारीत असेल.आपली नियुक्ती ही पुर्णपणे कंत्राटी व अस्थाई स्वरूपाची असेल.
५. आपल्या सेवेच्या शर्ती व अटी अनुदान देणाऱ्या संस्थेकडून मिळालेल्या मार्गदर्शक सुचनानुसार राहतील.त्यात वेळोवेळी होणारे बदल आपणास बंधनकारक राहतील.
६. आपण करारतत्वावरील सेवा सोडताना एक महिना अगोदर या कार्यालयास सुचीत करणे किंवा एक महिन्याचे एकत्रित परिश्रमिक या कार्यालयाकडे अदा करणे बंधनकारक राहील, तसेच या कार्यालयाकडून एक महिन्याची पुर्वसुचना देऊन आपली सेवा समाप्त करण्यात येईल.
७. आपणास आवश्यकता व तातडीनुसार संस्थेच्या नियंत्रणाखालील इतर कोणत्याही सेंटरमध्ये काम करावे लागेल.
८. करार संपल्यानंतर पुढील नियुक्ती देणे किंवा न देणेबाबत महाराष्ट्र राज्य एड्स नियंत्रण संस्थेचा निर्णय अंतिम राहील.
९. आपणास करार कालावधीत मराएनिस नियमानुसार एक पूर्ण महीन्याला २½ या प्रमाणे वार्षीक ३० अर्जित/किरकोळ रजा, १० वैद्यकिय रजा व महिला कर्मचाऱ्यांना २ महीने अर्धपगारी प्रसुती रजा व सर्व शासकिय सुट्टया देय राहतील.
१०. आपली जिल्हाअंतर्गत किंवा इतर जिल्ह्यामध्ये अंतर्गत बदली होणार नाही

जिल्हा शल्यचिकित्सक सातारा

प्रतीः सरीता दिलीप जाधव
मु. पो. बसेगाव, ता. वाळवा, जि. सांगली

प्रत माहितीस्तव व कार्यवाहीस्तव
१. वैद्यकिय अधिक्षक, कृष्णा वैद्यकिय महाविद्यालय, कृष्णा हॉस्पिटल, कराड
२. जिल्हा कार्यक्रम अधिकारी ,डापकु सातारा.

प्रत माहितीस्तव सादरः मा.प्रकल्प संचालक,मराएनिसो,मुंबई

Comparative Study Lancet. 2016 Oct 8;388(10053):1659-1724.
doi: 10.1016/S0140-6736(16)31679-8.

Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015

GBD 2015 Risk Factors Collaborators

Collaborators
PMID: 27733284 PMCID: PMC5388856 DOI: 10.1016/S0140-6736(16)31679-8
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2017 Jan 7;389(10064):e1. doi: 10.1016/S0140-6736(16)32632-0. Epub 2017 Jan 6.
PMID: 28091378 Free PMC article. No abstract available.

Abstract

Background: The Global Burden of Diseases, Injuries, and Risk Factors Study 2015 provides an up-to-date synthesis of the evidence for risk factor exposure and the attributable burden of disease. By providing national and subnational assessments spanning the past 25 years, this study can inform debates on the importance of addressing risks in context.

Methods: We used the comparative risk assessment framework developed for previous iterations of the Global Burden of Disease Study to estimate attributable deaths, disability-adjusted life-years (DALYs), and trends in exposure by age group, sex, year, and geography for 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks from 1990 to 2015. This study included 388 risk-outcome pairs that met World Cancer Research Fund-defined criteria for convincing or probable evidence. We extracted relative risk and exposure estimates from randomised controlled trials, cohorts, pooled cohorts, household surveys, census data, satellite data, and other sources. We used statistical models to pool data, adjust for bias, and incorporate covariates. We developed a metric that allows comparisons of exposure across risk factors-the summary exposure value. Using the

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Lancet HIV. 2016 Aug;3(8):e361-e387. doi: 10.1016/S2352-3018(16)30087-X. Epub 2016 Jul 19.

Estimates of global, regional, and national incidence, prevalence, and mortality of HIV, 1980-2015: the Global Burden of Disease Study 2015

GBD 2015 HIV Collaborators

Collaborators

PMID: 27470028 PMCID: PMC5056319 DOI: 10.1016/S2352-3018(16)30087-X

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Erratum in

Correction to Lancet HIV 2016; 3: e361-87.

(No authors listed)

Lancet HIV. 2016 Sep;3(9):e408. doi: 10.1016/S2352-3018(16)30125-4. Epub 2016 Aug 22.

PMID: 27562740 Free PMC article. No abstract available.

Abstract

Background: Timely assessment of the burden of HIV/AIDS is essential for policy setting and programme evaluation. In this report from the Global Burden of Disease Study 2015 (GBD 2015), we provide national estimates of levels and trends of HIV/AIDS incidence, prevalence, coverage of antiretroviral therapy (ART), and mortality for 195 countries and territories from 1980 to 2015.

Methods: For countries without high-quality vital registration data, we estimated prevalence and incidence with data from antenatal care clinics and population-based seroprevalence surveys, and with assumptions by age and sex on initial CD4 distribution at infection, CD4 progression rates (probability of progression from higher to lower CD4 cell-count category), on and off antiretroviral therapy (ART) mortality, and mortality from all other causes. Our estimation strategy links the GBD 2015 assessment of all-cause mortality and estimation of incidence and prevalence so that for each draw from the uncertainty distribution all assumptions used in each step are internally consistent. We estimated incidence, prevalence, and death with GBD versions of the Estimation and Projection Package (EPP) and Spectrum software originally developed by the Joint United Nations Programme on HIV/AIDS (UNAIDS). We used an open-source version of EPP and recoded Spectrum for speed, and used updated assumptions from systematic reviews of the literature and GBD demographic data. For countries with high-quality vital registration data, we developed the cohort incidence bias adjustment model to estimate HIV incidence and prevalence largely from the number of deaths caused by HIV

Lancet. 2016 Oct 8;388(10053):1813-1850. doi: 10.1016/S0140-6736(16)31467-2. Epub 2016 Sep 21.

Measuring the health-related Sustainable Development Goals in 188 countries: a baseline analysis from the Global Burden of Disease Study 2015

GBD 2015 SDG Collaborators

Collaborators

PMID: 27665228 PMCID: PMC5055583 DOI: 10.1016/S0140-6736(16)31467-2
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2017 Jan 7;389(10064):e1. doi: 10.1016/S0140-6736(16)32610-1. Epub 2017 Jan 6.
PMID: 28091377 Free PMC article. No abstract available.

Abstract

Background: In September, 2015, the UN General Assembly established the Sustainable Development Goals (SDGs). The SDGs specify 17 universal goals, 169 targets, and 230 indicators leading up to 2030. We provide an analysis of 33 health-related SDG indicators based on the Global Burden of Diseases, Injuries, and Risk Factors Study 2015 (GBD 2015).

Methods: We applied statistical methods to systematically compiled data to estimate the performance of 33 health-related SDG indicators for 188 countries from 1990 to 2015. We rescaled each indicator on a scale from 0 (worst observed value between 1990 and 2015) to 100 (best observed). Indices representing all 33 health-related SDG indicators (health-related SDG index), health-related SDG indicators included in the Millennium Development Goals (MDG index), and health-related indicators not included in the MDGs (non-MDG index) were computed as the geometric mean of the rescaled indicators by SDG target. We used spline regressions to examine the relations between the Socio-demographic Index (SDI, a summary measure based on average income per person, educational attainment, and total fertility rate) and each of the health-related SDG indicators and indices.

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Clin Oral Investig. 2016 Jun;20(5):1109-13. doi: 10.1007/s00784-016-1710-x. Epub 2016 Jan 12.

Effect of ozone to remineralize initial enamel caries: in situ study

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Affiliations

Affiliations

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4 Department of Public Health Dentistry, Sri Krishna Institute of Medical and Dental Sciences, Karad, India.

PMID: 26759338 DOI: 10.1007/s00784-016-1710-x

Abstract

Objectives: Effect of ozonated water in remineralizing artificially created initial enamel caries was investigated using laser fluorescence and polarized light microscopy in an in situ study.

Materials and methods: Teeth specimens (buccal sections) were immersed in 5-ml solution of 2 mM CaCl2, 2 mM NaH2P04, and 50 mM CH3COOH at pH of 4.55 for 5 h in an incubator at 37° to create subsurface demineralization. After which, they were randomly allocated into one of the following remineralization regimens: ozone (ozonated water 0.1 mg/l and 10 % nano-hydroxyapatite paste, Aclaim(TM)), without ozone (only 10 % nano-hydroxyapatite paste, Aclaim(TM)), and control (subjects' saliva alone). Specimens were embedded in acrylic retainers worn by orthodontic patients throughout the 21-day study duration and constantly exposed to their saliva. Laser fluorescence was recorded for all the specimens at baseline, after demineralization, and remineralization using DIAGNOdent, and the results were validated using polarized microscopic examination. The results were analyzed using repeated measures, one-way ANOVA with post hoc multiple comparisons.

Results: Reduced DIAGNOdent scores and greater depth of remineralization following application of ozonated water and nano-hydroxyapatite were found compared to those of the without ozone and control groups ($P < 0.001$), and the ozone-treated group exhibited maximum remineralization under the polarized light microscopy.

Mater Sci Eng C Mater Biol Appl. 2016 Dec 1;69:700-14. doi: 10.1016/j.msec.2016.07.063. Epub 2016 Jul 22.

Bioconductive 3D nano-composite constructs with tunable elasticity to initiate stem cell growth and induce bone mineralization

Nitin Sagar [1], Kunal Khanna [2], Varda S Sardesai [3], Atul K Singh [2], Mayur Temgire [4], Mridula Phukan Kalita [4], Sachin S Kadam [5], Vivek P Soni [1], Deepa Bhartiya [3], Jayesh R Bellare [6]

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5 Department of Chemical Engineering, Indian Institute of Technology-Bombay, Mumbai 400076, India; Krishna Institute of Medical Sciences, Malkapur, Karad 415539, Dist. Satara, Maharashtra, India.
6 Department of Biosciences and Bioengineering, Indian Institute of Technology-Bombay, Mumbai 400076, India; Centre for Research in Nanotechnology and Science, Indian Institute of Technology-Bombay, Mumbai 400076, India; Department of Chemical Engineering, Indian Institute of Technology-Bombay, Mumbai 400076, India; Wadhwani Research Center for Bioengineering, Indian Institute of Technology-Bombay, Mumbai 400076, India. Electronic address: jb@iitb.ac.in.

PMID: 27612764 DOI: 10.1016/j.msec.2016.07.063

Abstract

Bioactive 3D composites play an important role in advanced biomaterial design to provide molecular coupling and improve integrity with the cellular environment of the native bone. In the present study, a hybrid lyophilized polymer composite blend of anionic charged sodium salt of carboxymethyl chitin and gelatin (CMChNa-GEL) reinforced with nano-rod agglomerated hydroxyapatite (nHA) has been developed with enhanced biocompatibility and tunable elasticity. The scaffolds have an open, uniform and interconnected porous structure with an average pore diameter of 157±30μm and 89.47+0.03%

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Infantile Digital Fibromatosis: A Rare Case Report

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Sir,

Infantile digital fibromatosis (IDF) is a smooth, firm, erythematous or skin-colored nodule on the dorsal or lateral surfaces of the distal phalanges of the fingers and toes. Usually, thumb and great toe are spared. Extra digital involvement is rare but reported in literature. More than 80% of tumors are present in infancy. Spontaneous resolution of lesions over 1–10 years (average 2–3 years) is seen. Recurrence is common after excision.

A 9-month-old Indian girl presented to skin outpatient department with multiple reddish to skin-colored, confluent, small, painless, indurated, papulonodular lesions on the dorsum of the right foot, which progressively increased in size starting at 1 month after birth.

The girl was born out of nonconsanguineous marriage. Previous medical history was unremarkable, and there was no history of trauma or inflammation. No allergic history was reported. The other foot and both hands were unremarkable. No other skin lesions were present over the body. None of the family members had similar lesions.

There were swelling and deformity of the second, third, and fourth toe of the right foot. Second toe was enlarged in size and displaced over great toe. Middle toe was the most enlarged and had ulceration over dorsal surface. The skin overlying the swelling over toes was firm and reddish blue [Figure 1]. The ulceration on dorsum of the middle toe was due to friction while crawling by the baby. Sole of the foot also had swelling and nodular lesions on the base of the second, third, and fourth toe [Figure 2]. Great toe and little toe was spared.

There was pain and slight functional impairment while crawling by the child. No signs of scratching were present. Further systemic clinical examination was normal.

Case Reports Trop Doct. 2016 Jul;46(3):150-3. doi: 10.1177/0049475515610939. Epub 2015 Oct 14.

Challenges in the successful management of a case of acute intermittent porphyria in India

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Abstract

Acute intermittent porphyria (AIP) is a rare metabolic disease involving a defect in haem biosynthesis resulting in the accumulation and excessive secretion of porphyrins and its precursors. Acute attacks present with episodes of severe abdominal pain, nausea, confusion and severe life-threatening seizures. A high index of suspicion is required for the initial diagnosis of AIP.

Keywords: Acute intermittent porphyria; human haematin.

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Original Article

A comparative evaluation of ProRoot mineral trioxide aggregate and Portland cement as a pulpotomy medicament

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ABSTRACT

Introduction: Recently, some studies have compared mineral trioxide aggregate (MTA) with portland cement (PC), concluding that the principle ingredients of PC are similar to those of MTA. The purpose of the present study was to evaluate the biocompatibility of PC as a pulpotomy medicament. **Materials and Methods:** Thirty premolars that scheduled for extraction for therapeutic reasons were randomly assigned to two experimental groups: ProRoot MTA (PMTA) and PC. After isolation and pulp exposure, pulpotomy was carried out and pulps were dressed with PMTA and PC. After 6 months, the teeth were extracted and prepared for histological analysis based on Cox *et al.* criteria. The data were analyzed by Z-test of proportion with 1% of allowed error. **Results:** No statistically significant difference was found between the two groups with respect to inflammatory response, soft tissue organization, and dentine bridge formation ($P > 0.05$). **Conclusions:** PC was associated with similar favorable biological response to pulpotomy treatment as PMTA. The findings of this study support the idea that PC can be considered a cheaper substitute to MTA.

KEYWORDS: Portland cement, ProRoot mineral trioxide aggregate, pulpotomy

Introduction

Vital pulp therapy is the treatment of choice for treating reversible pulpal injuries in both primary and permanent teeth for maintaining pulp vitality and function. Rationale of this treatment is based on the healing ability of the healthy pulp. Pulpotomy is a vital pulp therapy in which a portion of vital coronal pulp tissue is removed surgically and the remaining radicular dental pulp is covered with a suitable material that protects the pulp from further injury and promotes healing.[1] Calcium hydroxide based materials have been extensively used as a pulpotomy medicament because of their potential to induce dentin

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A comparative microleakage evaluation of three different base materials in Class I cavity in deciduous molars in sandwich technique using dye penetration and dentin surface interface by scanning electron microscope

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Abstract

Introduction: A major objective in restorative dentistry is the control of marginal leakage, which may occur because of dimensional changes or lack of adaptation of restorative material to the cavity preparation. Numerous techniques have been advocated to overcome polymerization shrinkage in composite restorations.

Aim and objectives: This study investigated microleakage of three different bases under composite resin in sandwich technique using dye penetration and dentin surface interface using scanning electron microscope (SEM).

Materials and methods: Sixty extracted deciduous molars were stored in distilled water and Class I cavities with a width of about one-fourth of intercuspal distance and a depth of 0.5-1 mm below the dentino-enamel junction was prepared without bevels. In Group 1 - glass ionomer cement (GIC); Group 2 - mineral trioxide aggregate (MTA); Group 3 - Biodentine™ was placed as a base under composite. Teeth were longitudinally sectioned in two halves, through the centers of the restoration,

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Prevalence and risk factors of hypertension and diabetes in the Katkari tribe of coastal Maharashtra

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Abstract

Background and Objectives:

Urban and rural India are both going through health epidemiological transition and will soon face huge burden of noncommunicable diseases (NCDs). Information on the status of NCDs in tribals is limited. Although the prevalence of hypertension in scheduled tribes (STs) has been studied in several states by the National Nutrition Monitoring Bureau, tribe-specific data are very scanty. The objective of this study was to generate data on the status of hypertension and diabetes, the two objectively measurable NCDs in Katkaris, the dominant ST in the Raigad district of coastal Maharashtra.

Methods:

The study was conducted in 410 adult Katkaris (women 219) of both sexes of ≥18 years of age in three adjoining tehsils of the district. Using the Institution Review Board approved protocol; information was obtained on sociodemographic parameters, educational level, dietary pattern, and substance abuse. Prevalence of overweight, hypertension, and diabetes was measured using standard field-based procedures and techniques.

Results:

Katkaris, who are mostly landless manual laborers, subsist on a protein-poor, imbalanced diet. About half of women and one-third of men have body mass index (BMI) <18.5 kg/m^2, an indication of undernutrition. On the other hand, about 2% of participants were obese (BMI ≥30 kg/m^2). The overall prevalence of hypertension and diabetes was 16.8% and 7.3%, respectively. Hypercholesterolemia was recorded in about 3% of the participants.

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Gender determination by radiographic analysis of mental foramen in the Maharashtra population of India

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Abstract

Context:

Identification of gender is of primary importance in forensic investigations when only fragment of skull remains. Mandible is a hard bone and exhibits a high degree of sexual dimorphism. Gender differences were observed in the height of mandible, gonial angle, bigonial breadth, bicondylar breadth, and position of mental foramen (MF).

Aims of the Study:

The purpose of this study is to evaluate gender differences in distances from superior border of MF (SMF) and inferior border of MF (IMF) to the lower border of mandible (LBM) and height of mandible in the Maharashtra population.

Materials and Methods:

A total of 400 patients (200 males and 200 females) were considered for the study. The panoramic radiographs of patients were captured using Xtropan 2000 system and Carestream (T-Mat GIRA) films. The distance from SMF and IMF to the LBM and the height of mandible was measured.

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ORIGINAL ARTICLE

Antinociceptive Effect of Ondansetron in Albino Mice Using Acetic Acid Induced Writhing Model

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Abstract:

Background: Pain is an unpleasant sensory and emotional experience. Pain is a protective mechanism. Pain occurs whenever any tissues are being damaged, and it causes the individual to react and to remove the pain stimulus. *Aim and Objectives:* To evaluate the antinociceptive effect of ondansetron in comparison with the standard diclofenac. *Material and Methods:* The antinociceptive effect was tested by using the acetic acid induced writhing model in Swiss Albino mice. Animals were divided into 4 groups of 6 animals each. Animals were received distilled water (control), diclofenac (standard), ondansetron 0.5mg/kg (test I) and ondansetron 1mg/kg (test II). After 30 minutes of drug administration, 0.1 ml of 1% acetic acid was injected. Mice were placed individually into glass beakers and five minutes were allowed to elapse. They were then observed for a period of ten minutes and the numbers of writhes were recorded in each animal. The results were expressed as mean ± SEM. One way ANOVA with post-test was used for statistical calculation. *Results:* The numbers of writhes were 1.33±0.494 for diclofenac; 6.33±1.872 and 9.33±1.706 for ondansetron 0.5 and 1mg/kg respectively. *Conclusion:* Ondansetron demonstrated statistical significant antinociceptive activity at both doses (0.5mg/kg and 1mg/kg) and statistically similar effect as diclofenac.

Key words: Antinociceptive Effect, Ondansetron, Diclofenac, 1% Acetic Acid, Writhes

Introduction:

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage [1]. Pain is a protective mechanism and occurs whenever any tissue is being damaged and it causes the individual to react and to remove the pain stimulus [2]. Chronic pain not only affects physical activity but may also impact psycho-social health of the patient leading to lowering of quality of life [3].

The prime objective of pain management is to remove the cause of pain. However, pain often being multifactorial and associated with undiagnosed underlying diseases, treatment does not remain simple. Pain is a symptom of many diseases requiring treatment with analgesics [4]. So, analgesic medications are the first line of treatment in the pain management [5]. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) are nonspecific analgesics and can potentially be used for any type of acute or chronic pain. However, depending on the short or long duration of use, they may cause adverse effects like gastritis, peptic ulcer, nephropathy etc. Long term use of these drugs may increase the risk of cardiovascular accidents [6]. Opioids are the most potent pain-relieving drugs and have the broadest range of

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ORIGINAL ARTICLE

Field Testing of Second Generation of Colour-Coded Rings for Detecting Slow Progress of Labour at Rural Health Centres

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Abstract

Introduction An innovative appropriate technological tool of colour-coded rings based on cervicographic principles was developed to monitor deliveries.

Objectives To study efficacy, feasibility and acceptability of colour-coded rings for monitoring active phase of labour.

Materials and Methods All consecutive deliveries occurring at selected primary health centres from Pune, Satara and Kolhapur Districts of Maharashtra, during 15 months period were included in the study and matched control groups.

Jemds.com Original Research Article

MORPHOMETRIC STUDY OF PHARYNGEAL ORIFICE OF AUDITORY TUBE

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ABSTRACT

Eustachian tube extends from the anterior wall of the middle ear to the lateral wall of the nasopharynx at the level of inferior nasal choncha. It maintains the equilibrium of air. It is an important landmark for endoscopic evaluation in patients with chronic otitis and also for the transnasal approach to the infratemporal fossa.

MATERIALS AND METHODS

Study was carried out, 50 sagittal sections (25 right side and 25 left side) of head and neck specimens from adult formalin fixed cadavers from the Department of Anatomy, Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, India. The pharyngeal opening of Eustachian tube was observed for its shape, size and important measurements taken with the help of sliding vernier calliper. The mean and standard deviation of these parameters were calculated.

RESULTS

The vertical length and A-P length was taken and shape was observed. Oval shape more common on right side (52%) and triangular on left (48%). The A-P length on right side was 8.7 mm on right and 7.6 mm on left side, which was statistically significant. The height was more on right side than on left side.

CONCLUSION

In the present work, the exact position of auditory tube can be located by various measurements. So the study will be helpful for radiologist for differential diagnosis and ENT surgeons for endoscopic evaluation in patients with chronic otitis media.

KEYWORDS

Eustachian Tube, Inferior Nasal Concha, Inferior Turbinate.

HOW TO CITE THIS ARTICLE: Mohite S, More RS, Mohite H. Morphometric study of pharyngeal orifice of auditory tube. J. Evolution Med. Dent. Sci. 2016;5(73):5385-5387, DOI: 10.14260/jemds/2016/1222

INTRODUCTION

The Auditory Tube (AT) extends from the anterior wall of the inferior nasal concha middle ear to the lateral wall of the nasopharynx, approximately at the level of the inferior nasal concha. It is derived from the first pharyngeal pouch, which during embryogenesis forms the tubotympanic recess. The distal part of the tubotympanic recess gives rise to the tympanic cavity, while the proximal tubular structure becomes the auditory tube.[1] It is divided into an osseous intra-temporal portion and cartilaginous portion, which open in the nasopharynx.[2] In adults the tube makes two curves before pharyngeal opening; it makes a curve which is directed downwards and forwards. The effect of infection or inflammation in middle ear, nose or nasopharynx reflects Eustachian tube, so a knowledge of anatomy and physiology of it is necessary for proper diagnosis and treatment of the diseases.[3]

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MATERIALS AND METHODS

Present study was conducted with 50 mid-line sections (25 right, 25 left side) of head and neck specimens from adult formalin fixed cadavers from the Department of Anatomy, Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, India. The pharyngeal opening of Eustachian tube was observed for its shape and size and following measurements were taken using sliding vernier calliper of 30 cm length, 0.01 cm accuracy as shown in Fig.1,2,3.

1. Antero-posterior length (width)
2. Vertical height
3. Distance from posterior end of inferior turbinate
4. Distance from clivus-perpendicular distance
5. Distance from roof of nasopharynx
6. Distance from anterior tubercle of arch of atlas

The data was collected and tabulated and analysed statistically.

	Position/Shape	Right	Left
Position of opening	Below	56	84
	Behind	36	16
	Above	8	0
Shape of opening	Oval	52	32
	Triangular	36	48
	Round	12	0
	Slit Like	0	20

Table 1: Showing Different Positions and Shape of Pharyngeal Opening of Auditory Tube (All In %)

Jemds.com Original Research Article

MORPHOLOGICAL STUDY OF CAROTICO-CLINOID FORAMEN

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ABSTRACT

The anterior and middle clinoid processes of sphenoid bone are connected by a ligament called carotico-clinoid ligament, which maybe ossified forming the carotico-clinoid foramen. Ossification of some normally occurring ligaments of the human skull produces the bony bridges that connect to the clinoid processes with other surrounding structures. The ligaments are related to many anatomical structures and when ossified may cause compression of these structures.

MATERIALS AND METHODS

Total 82 adult human dried crania were studied. To select the crania, integrity of the clinoid processes was evaluated and damaged clinoid processes were excluded. The crania with unilateral or bilateral complete CCF were considered. The morphometry was performed by using vernier caliper. Anteroposterior (AP) and transverse diameters were measured. Statistical analysis was done.

RESULTS

The incidence of the presence of CCF (Carotico-clinoid foramen) was 28%. CCF was more on right (21) than the left side (19). The AP length of the CCF on right was 0.77 cm while of left side it was 0.60 cm, which was statistically significant. But, breadth on right side, it was 0.56 cm and on it 0.55 cm, which was almost equal on both sides.

CONCLUSION

The presence of ossified interclinoid ligament makes the removal of the anterior clinoid process more difficult. Knowledge about the ossification of carotico-clinoid ligament (CCL) is important in neurosurgical operations because the presence of an ossified CCL may form a potential site for compression of internal carotid artery.

KEYWORDS

Carotico-Clinoid Ligament, Clinoid Processes, Carotico-Clinoid Foramen.

HOW TO CITE THIS ARTICLE: Mohite S, More RS, Mohite H. Morphological study of carotico-clinoid foramen. J. Evolution Med. Dent. Sci. 2016;5(61):4309-4311, DOI: 10.14260/jemds/2016/983

INTRODUCTION

The carotico-clinoid foramen is an inconstant structure, which is located in the anterior cranial fossa composed by the ossification of a fibrous ligament[1] that begins on the anterior clinoid process and binds to the middle clinoid process.[2] Carotico-clinoid foramen allows the passage of one of six segments of the internal carotid artery, the clinoidal segment.[3] The fibrous ossification of ligaments is considered a normal physiological process that occurs with ageing; however, this process is an exception when one considers the formation of the carotico-clinoid foramen.[4] Study by Hochstetter revealed the presence of this foramen in foetuses and children skulls.[5] The ligaments are related to many anatomical structures and when ossified may cause compression of these structures. The carotico-clinoid and interclinoid ligaments are related to the internal carotid artery and oculomotor nerve.[6] In presence of carotico-clinoid foramen, it is impossible to retract or mobilise the cavernous segment of carotid artery even after releasing the proximal and distal carotid rings. Preoperative recognition of carotico-clinoid foramen is important because undue retraction of cavernous segment of internal carotid artery may tear or rupture it and cause fatal cerebral infarction.[7] The carotico-clinoid bridge could cause pressure on the internal carotid artery that lies in the cavernous sinus changing the morphology in the terminal end of the groove of internal carotid artery.[8] Due to greater calibre of internal carotid artery in this region compared to the diameter of carotico-clinoid foramen, the possibility of headache due to compression by the foramen is high. Carotico-clinoid foramen is an important structure due to its relations with cavernous sinus and its contents, sphenoid sinus, and pituitary gland.[4] Several authors studied the anatomical characteristics of Carotico-Clinoid Foramen (CCF) in different population. The Anterior Clinoid Process (ACP) is usually accessed to gain entry into the clinoid space. The ligamentous or the bony form of interclinoid ligament is important in the aneurysms surgery of the intracavernous portion of the internal carotid artery and surgery for tuberculum sellae meningiomas.[9]

The presence of ossified interclinoid ligament makes the removal of the anterior clinoid process more difficult and increases the risks especially in the presence of an aneurysm. Therefore, to obtain a satisfactory result from these surgeries, detailed anatomical and morphometric knowledge of the region is necessary.

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OM NAMAH SHIVAYA CHANTING FOR MANAGEMENT OF STRESS IN ELDERLY WOMEN WITH HYPERTENSION

Priya P. Roy * [1], Kumar Sai Sailesh [2], Archana R [3], Soumya Mishra [4], Arati Amin [5], Sabu Thomas [6], Udaya Kumar Reddy [7] and Supriya Rajan [8]

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Keywords:

Om Namah Shivaya Chanting, Stress, Hypertension

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ABSTRACT: Stress is part and parcel of our life and stress management is gaining importance day by day. Traditional mantras are reported to be very effective for and safe methods. Hence the traditional knowledge of mantras should be practiced, preserved and propagated. Om Namah Shivaya is a most potent and popular mantra, which is at the heart of the Vedas and Tantra. The present study was aimed to observe beneficial effects of OM Namah Shivaya chanting for stress management in elderly women with hypertension. The study was conducted at Sattva Cultural Space and Research Centre, Angamaly, Kerala. 8 elderly women aged 55-65 years with stage 2 hypertension were recruited in the present study after obtaining written informed consent. After recording baseline values, participants underwent practice sessions for 3 days under supervision of yoga teacher from the centre. After the practice sessions, participants chanted Om Namah Shivaya for 108 times by using japamala with 108 beds at 6:30 in the morning for 40 days under supervision of yoga teacher. Participants were instructed to follow the routine diet pattern and life style and medications. Assessment of stress was performed by DASS questionnaire. Blood pressure was recorded by using Diamond digital sphygmomanometers (BPDG024). Cognitive functions were assessed by MMSE scores. We have observed significant decrease in depression, anxiety, stress scores and increase in MMSE scores followed by chanting. Though the blood pressure values were decreased, it was not statistically significant. Our study provides preliminary evidence for beneficial effects of Om Namah Shivaya chanting. We recommend further detailed studies in this area to understand role of chanting Om Namah Shivaya in stress management.

INTRODUCTION: In Hindu tradition, Lord Shiva was considered as lord of meditation, who enlightens the universe.

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Om, na, mah, shiv, vaa, ya are the six syllables present in Om Namah Shivaya Mantra, which is one of the oldest mantras in Hinduism [1, 2]. It is a part of Shri Rudram Chamakam and it means "I bow to Shiva" [3]. Chanting Om Namah Shivaya should be practiced in a calm, relaxed, and gently focused state, in mindfulness that the mantra is a salutation to the divine forces of life [3]. Paramahamsa Muktananda explained that "everyone can chant Om Namah Shivaya Mantra

Jemds.com Original Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF THE STRUCTURED TEACHING PROGRAM ON KNOWLEDGE OF POSTNATAL DEPRESSION AMONG STAFF NURSES IN SELECTED HOSPITAL AT TUMKUR

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ABSTRACT

The objectives of the study were: 1. To assess the existing knowledge of staff nurses regarding postnatal depression, 2. To determine the effectiveness of Structure Teaching Programme (STP) on postnatal depression among Staff Nurses in terms of gain in knowledge scores, 3. To find out the association between the knowledge of staff nurses with selected demographic variables.

RESEARCH METHODOLOGY

Evaluator approach was used with one group pre-test post-test design, which is a quasi-experimental design to measure the effectiveness of structure teaching programme on postnatal depression among the staff nurses. The study was conducted in a Shridevi Hospital, Tumkur. Inclusion Criteria were Staff Nurses who are willing to participate in the study, who are available during the period of data collection, Staff Nurses who are qualified in Diploma Nursing. Exclusion Criteria were Staff Nurses Student Nurses who are posted for clinical experience, qualified other than GNM and Staff nurses who are posted in ICU and Emergency ward. The collected data was analysed using descriptive and inferential statistics. The significance of difference between the pre-test and post-test score was found by paired 't' test.

RESULTS

In this study, majority 44 (88%) of the respondents were females. Majority 20 (40%) of the respondents belongs to the age group of 25-30 years. About 33 (66%) of the subjects were married. Most 28 (56%) of the respondents belongs to Christianity. All the respondents (50) had completed Diploma in General Nursing and Midwifery Course. The mean pre-test value is 8.22, standard deviation is 6.73 and standard mean error is 0.96. The mean score is increased in the post test. The mean in the post test is 32.16 and the standard deviation is 6.26. Standard error of mean is 0.89. The gain in the knowledge based on difference in the pre-test and post-test mean was found to be 23.94 (Improvement). Age is highly significant. Gender, Marital status and Religion are not significant. Intensive programme, current working area and experience in years are significant.

CONCLUSION

There is a statistically significant improvement in the knowledge among the staff nurses who underwent the structured teaching program on post-natal depression.

KEYWORDS

Postnatal, Depression, Staff Nurses, Effectiveness.

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INTRODUCTION

Having a baby is usually a positive experience for mothers and fathers, society expects them to feel happy and fulfilled as they welcome a new life into their world, usually a very happy event, but sometimes it goes wrong to some mothers who feels depressed, which is considered as Post Natal Depression (PND). Postnatal period is the period when women readjusting physiologically and psychologically to motherhood. Emotional responses may be just as intense and powerful for experienced as well as for new mothers.[1]

PND is not easily identified and therefore it often remains undetected. The onset of postpartum depression is gradual and the condition may last for 3-6 months. In some cases, it will persist throughout the first year of the baby's life.[2] Many mothers begin to feel depressed and hopeless soon after the baby is born.

Postpartum depression can be characterized by all the symptoms of depression including emotional, cognitive and motivational changes; sadness, hopelessness, lack of

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Field Testing of Appropriate Technological Tool of Individualised Color Coded Any Day Neonatal Growth Monitoring Charts for Neonatal Care at Primary Health Care Level

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PMID: 26887760 DOI: 10.1007/s12098-015-2027-5

Abstract

Objective: To field test the Individualised Color Coded Any Day (ICCAD) growth monitoring charts at primary health care level in three districts of Maharashtra.

Methods: The present study was conducted in three districts of Maharashtra - Pune, Satara and Kolhapur and included newborns with weight ≥ 1500 g born during 1st May 2010 to 30th July 2011. Talukas were matched based on mortality and coverage indicators and put in study (ICCAD use) and control area (ICCAD non-use) from every District. Health centres were selected from each taluka where facilities of expert obstetric and pediatric services did not exist but number of deliveries conducted was high. Data was collected during neonatal period. Three patterns of ICCAD charts; 1500 g to 1999 g, 2000 to 2499 g and ≥2500 g; developed from daily weight record of 430 newborns for 30 d were used. Outcome measures were neonatal mortality rate (NMR) and weight gain in study and control groups.

Results: There were 6705 live births from study and 6341 from control area. The NMR of study area (6.3/1000 live births) was significantly lesser as compared to control area (10.6/1000 live births). Birth

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A Study of Relationship between Menstrual Cycle and Hanging

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Background: The high rate of suicide in women has drawn many researchers' attention to different phases of menstrual cycle as a biological factor. **Aim of the study:** The purpose of the study is to know the relationship between menstrual cycle and hanging. **Materials and method:** A cross sectional study of a total of 34 cases of hanging was conducted in the Department of Forensic Medicine, S.S.G. Hospital mortuary, attached to Government Medical College, Baroda over a period of 12 months from October 2013 to September 2014. **Results:** Total number of cases of hanging during study period was 33. Mean age of females was 26.24 years. **Conclusion**: - There is significant relationship between suicide by hanging in women during reproductive age group and menstruation.

Keywords: *Hanging, suicide, menstruation, autopsy.*

INTRODUCTION

The high rate of suicide in women has drawn many researchers' attention to different phases of menstrual cycle as a biological factor and some of the mental disorders associated with menstrual phases, including depression and psychotic symptoms after delivery and before menstruation[1].

Studies about the relation between the suicidal attempt and menstrual cycles have different results, which can be divided in four categories: (1) no relationship between suicidal behaviours and the menstrual cycle; (2) more frequency of suicidal attempts during the premenstrual phase; and (3) more frequency of suicidal attempt during the menstrual bleeding phase, and (4) the more frequency of suicidal attempts during the first and fourth weeks of menstrual cycles. Most of these studies used the interview technique for assessing the menstrual cycle phase, although few of them measured hormones, but even some of these assessed the hypothalamo-hypophyseal and adrenal hormones for their studies. One may suppose that the menstrual cycle phase can be assessed accurately by post-mortem endometrial histology, but even this cannot be without bias, because some of the suicides are reported as a non suicidal one. Besides, the rank of the suicidal attempt was not an important variable in most of the past studies[2].

Women with menstrual problems were more likely to have a major depressive disorder than women with no such problems and menstrual cycle had a positive association with suicidal behavior[3]. The present was conducted to know the relation between suicide by hanging and menstruation.

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MATERIAL & METHOD

A cross sectional study of a total of 34 cases of hanging was conducted in the Department of Forensic Medicine, S.S.G. Hospital mortuary, attached to Government Medical College, Baroda over a period of 12 months from October 2013 to September 2014. Only female hanging cases between 14 years to 50 years were included. The cases that had undergone hysterectomy were excluded. During autopsy, uterus was dissected to expose the endometrium in order to know the presence of menstrual bleeding. The data was collected from the information furnished

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Brucellosis in Occupationally Exposed Groups

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Abstract

Introduction

In India, high incidence of human brucellosis may be expected, as the conditions conducive for human brucellosis exist. Limited studies have been undertaken on human brucellosis especially in occupationally-exposed groups.

Aim

To estimate prevalence of anti-brucellar antibodies, evaluate the clinical manifestations, risk factors and Knowledge, Attitude and Practices (KAP) levels about brucellosis among occupationally exposed groups.

Materials and Methods

Blood samples were collected from 2337 occupationally exposed individuals. The serum samples were screened for the presence of anti-brucellar antibodies by Rose Bengal Plate Test (RBPT), Serum Agglutination Test (SAT) and 2-Mercaptoethanol test (2-ME). Clinical manifestations, risk factors and KAP levels were evaluated by personal interview using a structured questionnaire.

Results

Seroprevalence of brucellosis by RBPT, SAT and 2-ME test was 9.46%, 4.45% and 3.64 % respectively. Clinical symptoms resembling brucellosis were seen in 91 subjects. The major risk factors were animal exposure in veterinarians and abattoirs, both animal exposure and raw milk ingestion in

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A Success Story of Reduced Worm Infestation in Satara District

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Abstract

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Socio-demographic Profile of Cases of Hanging Autopsied in Bengaluru

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ABSTRACT

Background: Hanging is that form of asphyxia, which is caused by partial or complete suspension of the body by a ligature around the neck, the constricting force being the weight of the body. **Aim of the study:** The purpose of the study is to know the socio-demographic profile of cases of hanging. **Materials and methods:** A cross sectional study of a total of 105 cases of hanging was conducted in the Department of Forensic Medicine, Victoria Hospital over a period of 20 months from November 2009 to June 2011. The data was collected from the information furnished by deceased relatives and police and post mortem examination and analysed with Microsoft excel and presented as descriptive statistics. **Results:** Age group of 20-29 years (53.33%) were most vulnerable to commit suicide by hanging followed by 30-39 years (20.95%) with male: female ratio 3:2. Majority of the people (89%) committed suicide at their residence. **Conclusion:** - Young male of age group 20-29 years who belonged to Hindu religion committed suicide by hanging commonly at their residence.

Keywords: Hanging, suicide, autopsy

INTRODUCTION

Hanging is that form of asphyxia, which is caused by partial or complete suspension of the body by a ligature around the neck, the constricting force being the weight of the body.[1] It is one of the most commonly used methods for suicide as it is a simple but effective way[2]. In India, it is among the top five methods of choice for committing suicide. According to the NCRB (National crime reports bureau) report 2009, the incidence of suicide by hanging in India is 31.7% in 2007, 32.2% in 2008 and 31.5% in 2009[3].

Hanging is a common means of suicide among younger people belonging to the lower socio-economic group of the society, and is usually committed in familiar surroundings with ligature materials easily available to the victim[4]. Hanging, as the method of suicide, was found to be more prevalent among males in comparison to females with maximum number of cases in 21- 30 year's age groups[5].

The reasons for suicide attempts are multiple either single or combination. Family problems, illness, divorce, dowry, love affairs, cancellation or the inability to get married (according to the system of arranged marriages in India), illegitimate pregnancy, extra-marital affairs, and such conflicts relating to the issue of marriage, play a crucial role, particularly in the suicide of women in India[6].

Virtually all hangings are suicides until unless otherwise proved contrary[7].The purpose of the study is to know the socio-demographic profile of cases of hanging autopsied at Victoria Hospital, Bengaluru.

MATERIALS & METHOD

A cross sectional study of a total of 105 cases of hanging and was conducted in the Department of Forensic Medicine, Victoria Hospital over a period of 20 months from November 2009 to June 2011. The data was collected from the information furnished by deceased relatives and police and post mortem examination and analysed with Microsoft excel and

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ORIGINAL ARTICLE

Incidence, Risk Factors and Susceptibility Profile of *Candida* species Isolated from Blood of Non-Neutropenic Medical Intensive Care Unit Patients in a Tertiary Care Centre

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Abstract:

Background: The critically ill patients are particularly susceptible to rapid colonization by endemic pathogens or hospital flora. Both immunocompetent and immunocompromised patients are particularly exposed to various risk factors. Bloodstream infection due to *Candida* species is now recognized as an important public health problem especially in intensive care unit patients with considerable morbidity, mortality and health care costs. *Aim*: The aim was to study the incidence, risk factors and antifungal susceptibility of the *Candida* species isolated from blood of Medical Intensive Care Unit (MICU) patients in our hospital. *Material and Methods*: The blood samples collected from MICU patients were processed as per standard protocol and antifungal susceptibility testing was done by broth microdilution method. *Results*: Out of total 111 samples, 22 (19.81%) yielded *Candida* species of which non-*albicans Candida* species predominated. In MICU, the risk factors associated with candidemia showing statistical significance were length of intensive care unitstay > 7 days, use of steroids, mechanical ventilation, central venous catheters and uncontrolled diabetes mellitus. *C. albicans, C. parapsilosis* and *C. guillermondii* have showed 100% susceptibility to Amphotericin B, 5-Flurocytosine, Fluconazole, Itraconazole and Voriconazole. *C. krusei* showed 100% resistance to fluconazole. *C. glabrata* showed 100% resistance to Itraconazole and Voriconazole. The mortality rate among MICU patients with candidemia was 59.09%. *Conclusion*: Although the patients in the ICU are at risk for candidemia, rapid diagnosis of aetiologic agent will reduce the delay in initiating the appropriate therapy with adequate dosage of anti-fungal agents along with effective correction of underlying risk factors which may actually improve their outcome.

Keywords: Candidemia, Medical Intensive Care Unit, Broth Microdilution Method

Introduction:

The critically ill patients are those who are at risk for actual and potential life-threatening health problems [1]. Due to advances in supportive medical care, the intensive care unit plays a major role in keeping such critically ill patients stable and alive. The increased use of invasive monitoring and aggressive therapeutic and surgical technologies in the intensive care unit has not only improved the survival but also increased the risk of invasive fungal infections in these patients [2].

Several other identified risk factors such as indwelling catheters, use of broad spectrum antibiotics and corticosteroids, parenteral nutrition, prolonged uncontrolled diabetes mellitus, assisted ventilation, prior abdominal surgery, etc. also contribute [3].

Case Reports Ind Psychiatry J. Jan-Jun 2016;25(1):116-118. doi: 10.4103/0972-6748.196039.

A rare case of alektorophobia treated successfully with graded exposure therapy

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Free PMC article

Abstract

Phobia is a type of anxiety disorder characterized by circumscribed, marked fear or anxiety to a specific object or situation which is out of proportion to the actual danger posed by the concerned object or situation. Worldwide, the prevalence of specific phobia has been found to be 16% in 13-17 years olds. In India, specific phobia has been identified as one of the most common disorders in the school-going age group, with the prevalence of approximately 4.2%. Alektorophobia is the specific term for phobia to hen/chickens. We hereby report an 18-year-old female presenting with alektorophobia and successfully treated with graded exposure therapy. It has not been described in extant literature to the best of our knowledge.

Keywords: Alektorophobia; India; anxiety; chicken; hen; phobia.

Case Reports J Clin Diagn Res. 2016 Mar;10(3):TD01-4. doi: 10.7860/JCDR/2016/18240.7406. Epub 2016 Mar 1.

Duplication of Inferior Vena Cava with Associated Anomalies: A Rare Case Report

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Free PMC article

Abstract

Duplication of inferior vena cava is an uncommon abnormality and is important in daily today practice for vascular surgeons, radiologist and urologist especially during retroperitoneal surgeries and treatment of thromboembolic disease. Radiologically, Duplicated IVC can be mistaken for lymphadenopathy or left pyeloureteric dilatation. Crossed fused kidney with a single ureter defy the embryological theory of ureteric bud crossing the opposite side and induce nephron formation associated anomaly of Duplication of inferior vena cava and malrotation of gut are not reported in a same patient. On meticulous search of literature no such combination of abnormalities has been reported. In this case report we bring forward this rare type of combination of three congenital malformations that is Duplication of IVC, crossed fused kidney and malrotation of gut.

Keywords: Nulliparous; Ovarian cyst; Pain abdomen; Pyosalphix.

Figures

Case Reports J Clin Exp Dent. 2016 Apr 1;8(2):e219-22. doi: 10.4317/jced.52792.

eCollection 2016 Apr.

Solitary central osteoma of mandible in a geriatric patient: Report and review

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PMID: 27034765 PMCID: PMC4808320 DOI: 10.4317/jced.52792

Free PMC article

Abstract

Solitary central osteomas of jaw are extremely rare lesions with only few previously documented cases. This paper reports a case of large solitary central osteoma involving mandible symphysis-parasymphysis region in an elderly female patient. A brief review of similar cases reported in the literature is also provided in this paper.

Key words: Osteomas, osteogenic,bone, tumor, jaw, mandible.

Figures

J Clin Diagn Res. 2016 Sep;10(9):ZJ03-ZJ04. doi: 10.7860/JCDR/2016/21052.8424. Epub 2016 Sep 1.

Biodentine-A New Novel Bio-Inductive Material For Treatment of Traumatically Injured Tooth (Single Visit Apexification)

Babita Niranjan [1], Nandihalli Devendrappa Shashikiran [2], Aashutosh Dubey [3], Shilpy Singla [4], Neha Gupta [5]

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No abstract available

Keywords: Apical barrier induction; Immature teeth; Open apex.

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CASE REPORT

Delayed Sino-Orbital Aspergillosis Following Facial Injury: A Case Report

Vinayak Raje[1], Ganesh Vihapure[2], Pandurang Barve[1], Devdutta Patil[1], Meghana Chougule[3], Trishant Chotai[1]

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Abstract:

Aspergillosis of face affects the nose and eyes mainly. The invasive and in particular, the fulminant forms are associated with high mortality. We report a case of sino-orbital aspergillosis in a known case of diabetes mellitus. The Patient underwent surgery for debridement of right maxillary sinus through transnasal approach. Successful treatment of aspergillosis requires prompt diagnosis and institution of therapy, because delay or non aggressive therapy can result in spread in infection and lethal consequences.

Keywords: Fungal infection, Paranasal Sinuses, Invasive Aspergillosis

Introduction:

Aspergillosis belongs to the category of systemic mycoses. Although pulmonary invasive aspergillosis is most common [1], other anatomical sites have been described as rare including sinuses, cerebral meninges, myocardium, thyroid, bone. Invasive and in particular, the fulminant forms are associated with high mortality. Invasive form primarily affects paranasal sinuses and nose [2]. Orbital involvement worsens the prognosis because of ready availability of pathways for further intracranial spread, such as superior orbital fissure, optic canal that directly open into the middle cranial fossa. High degree of suspicion for the diagnosis and early aggressive therapy are suggested to decrease morbidity and mortality. We report a case of post trauma sino-orbital aspergillosis in a known case of diabetes mellitus following trauma.

Case Report:

A 45 year male patient reported with complaint of right orbital swelling due to trauma. He later developed tenderness and swelling in the right infra orbital region. CT orbit was suggestive of ill defined soft tissue density lesion noted in the right maxillary sinus, involving the floor of orbit displacing inferior and medial rectus with thinning and erosion of the floor and medial wall of orbit extending to nasal cavity. CT scan was suggestive of displaced fracture (blow out) of floor of right orbit and medial wall. Large collection was seen in floor of right orbit, causing compression on right eye and extra ocular muscles of right eye. Displaced fracture of right maxillary sinus with haemosinus shown in Fig.1. Right endonasal maxillary and orbital decompression followed by diagnostic transnasal endoscopy was done. Histopathology report suggested aspergillosis. Mucopurulent discharge sent for culture and sensitivity and was sensitive to Amphotericin B. The culture report suggested Aspergillus species. Intravenous therapy of Amphotericin B was started and patient improved symptomatically.

63

Review J Oral Maxillofac Pathol. Jan-Apr 2016;20(1):111-4. doi: 10.4103/0973-029X.180961.

Prions in dentistry: A need to be concerned and known

B Sushma [1], Sachin Gugwad [2], Rajdeep Pavaskar [3], Shambhvi A Malik [4]

Affiliations

Affiliations

1 Department of Oral and Maxillofacial Pathology, School of Dental Sciences, Krishna Institute of Medical Sciences Deemed University, Karad, Maharastra, India.

2 Department of Pedodontics and Preventive Dentistry, School of Dental Sciences, Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, India.

3 Department of Conservative Dentistry and Endodontics, Goa Dental College and Hospital, Bambolim, Goa, India.

4 Department of Prosthodontics and Crown and Bridge, School of Dental Sciences, Krishna Institute of Medical Sciences Deemed University, Karad, Maharastra, India.

PMID: 27194872 PMCID: PMC4860911 DOI: 10.4103/0973-029X.180961

Free PMC article

Abstract

Prion diseases were first discovered by Stanley B. Prusiner who defined prions as infectious, transmissible proteinaceous particles that lack nucleic acid and are composed exclusively of a modified isoform of the noninfectious cellular prion protein (PrPC). These are incurable neurodegenerative conditions affecting both animals and humans. They may be sporadic, infectious or inherited in origin. Human prion diseases include Creutzfeldt-Jakob desease (CJD), Gerstmann-Straussler-Scheinker disease, Kuru and Fatal familial insomnia. Prions resist the conventional sterilization procedures and hence the dentists must be aware of such diseases so as to opt standard methods of infection control and decontamination for such infectious agents. This review article divulge the dentists with a brief overview of the characteristics of prions, the risk of transmission and the implications for infection control in dentist.

Keywords: Prion; prion protein; transmissible spongiform encephalopathies.

Related information

64

Indian J Anaesth. 2016 Nov;60(11):796-800. doi: 10.4103/0019-5049.193657.

Faculty promotions in medical institutions in India: Can we improve the criteria?

Vithal Krishna Dhulkhed [1], Madhuri S Kurdi [2], Pavan V Dhulkhed [3], Ashwini H Ramaswamy [2]

Affiliations

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2 Department of Anaesthesiology, Karnataka Institute of Medical Sciences, Hubli, India.
3 Department of Anaesthesiology, J. N. Medical College, Belgaum, Karnataka, India.

PMID: 27942051 PMCID: PMC5125181 DOI: 10.4103/0019-5049.193657
Free PMC article

Abstract

Research publications are desirable for academic promotion in medical colleges as per the current rules of the Medical Council of India (MCI). These rules reflect an endeavour to improve the academic standards. We strongly believe that every medical college teacher should conduct true research and contribute to good peer-reviewed publications. However, it is felt that the MCI rule has the potential to lead to undesirable consequences, and the quality of teaching and learning could take a back-seat. There is an urgent need to adopt more objective criteria and better guidelines as followed by well-known global institutes. In our own country, the University Grants Commission has formulated specific guidelines for this purpose in the form of Academic Performance Indicators which, it appears, are not taken into consideration by the MCI. This article discusses the adverse impact of the rule and suggests ways for the adoption of a more scientific assessment system for faculty appointment and promotion.

Keywords: Academic; education; faculty; publications; research; teaching; universities.

GRANT-IN-AID LETTER 2016-17

REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAM (RNTCP)

Govt.of Maharashtra, Health Services
Jt.Director of Health Services (Leprosy & TB)
"AROGYA BHAVAN" Opp. Vishrantwadi Police Station,
Alandi Road, Yerwada, Pune-411006.

Jt.Director - ☎ (020) 26686955
Dy.Director - 26686951
Office - 26686952-54
Fax – 26686956

Section wise e-mail
TB section- stomh@rntcp.org
Lep section - jtleprms@rediffmail.com
Est section - jdhsest99@gmail.com

No.JLDHS/TB&L/ Desk-RNTCP/OR Proposal/ /
Date -11/8/2016

24325-30

To,
The Dean,
Krishana Hospital and Medical Research Centre,
Karad

Sub:- Sanction of grant-in-aid for Operational Research proposal of Dr. Vijay D. Nair, Assistant Professor Under RNTCP.

Ref:- The State Operational Research Committee meeting held on 23rd April, 2016 at Disha Hall, Parivartan Building, Arogya Bhavan, Pune.

The following Operational Research proposal submitted by the Principal Investigator (PI) of your institute was discussed in State Operational Research Committee Meeting held on 23rd April, 2016 under RNTCP and it has been approved.

Sr. no	Name of the PI	Name of the Department & Medical College	Topic
1	Dr. Vijay D. Nair, Assistant Professor	Department of Medicine, Krishana Hospital and Medical Research Centre, Karad	Cross sectional study on the health related quality of life in patients who complete treatment for pulmonary TB.

The Principal Investigator (PI) will sign a Memorandum of Undertaking (MOU) with the TB programme manager on behalf of the society for the release of funds. The MOU will include the objects for which he will utilize the funds and the timeline for the study. It will also include the commitment from him to return the funds if the study cannot be taken up due to any reason, and other relevant causes. Funds will be released on the name of the institution of the Principal Investigator, so that the College / Department can ensure the study of its completion / return the funds in the event that the Principal Investigator is moved from the college during the course of the study. A Grant-in-aid of **Rs. 24,720 (Rs. Twenty Four Thousand Seven hundred twenty only)** for the above OR proposal will be released from the "Medical College Budget Head" from RNTCP funds by District TB Officer, Satara. 50% of the grant-in-aid will be released initially and remaining 30% after

receiving the report of data analysis and 20% will be released after receipt of the four hardcopies of the final documents.

Joint Director of Health Services
(Leprosy & TB) Pune

Copy to –

1. The DTO Satara– To follow up with the respective medical college & Principal Investigator and release the grant-in-aid amount from the "Medical College Budget Head" from RNTCP funds as per the guidelines.

2. The Principal Investigator–
   Dr. Vijay D. Nair, Assistant Professor, Department of Medicine, Krishana Hospital and Medical
   Research Centre, Karad
3. The RNTCP Medical Consultants by email – mhconsultants@rntcp.org
4. The OR Committee Members ..—(All)

Copy with complements to –
Dr. N. N. Ramraje, HOD & Professor Dept of Chest and TB, J. J. Hospital Mumbai & State Task Force Chairperson, Maharashtra.

Govt.of Maharashtra, Health Services
Jt.Director of Health Services (Leprosy & TB)
"AROGYA BHAVAN" Opp. Vishrantwadl Police Station,
Alandi Road, Yerwada, Pune-411006.

Jt.Director - ☎ (020) 26686955
Dy Director - 26686951
Office - 26686952-54
Fax - 26686956

Section wise e-mail
TB section- stomh@rntcp.org
Lep section - jtleprms@rediffmail.com
Est section - jdhsest99@gmail.com

No.Jt.DHS/TB&L/ Desk-RNTCP/OR Proposal/ /16
Date 4/ /8/2016

24331-36

To,
The Dean,
Krishana Hospital and Medical Research Centre,
Karad

Sub:- Sanction of grant-in-aid for Operational Research proposal of Dr. Asha Prathinidi, Director of Research Under RNTCP.

Ref:- The State Operational Research Committee meeting held on 23rd April, 2016 at Disha Hall, Parivartan Building, Arogya Bhavan, Pune.

The following Operational Research proposal submitted by the Principal Investigator (PI) of your institute was discussed in State Operational Research Committee Meeting held on 23rd April, 2016 under RNTCP and it has been approved.

Sr.no	Name of the PI	Name of the Department & Medical College	Topic
1	Dr. Asha Prathinidi Director of Research	Department of Medicine, Krishana Hospital and Medical Research Centre, Karad	Identifying predictors of treatment outcome in TB.

The Principal Investigator (PI) will sign a Memorandum of Undertaking (MOU) with the TB programme manager on behalf of the society for the release of funds. The MOU will include the objects for which she will utilize the funds and the timeline for the study. It will also include the commitment from her to return the funds if the study cannot be taken up due to any reason, and other relevant causes. Funds will be released on the name of the institution of the Principal Investigator, so that the College / Department can ensure the study of its completion / return the funds in the event that the Principal Investigator is moved from the college during the course of the study.

A Grant-in-aid of **Rs. 1,26,100 (Rs. One lac Twenty Six Thousand One Hundred only)** for the above OR proposal will be released from the "Medical College Budget Head" from RNTCP funds by District TB Officer, Satara. 50% of the grant-in-aid will be released initially and remaining 30% after

receiving the report of data analysis and 20% will be released after receipt of the four hardcopies of the final documents.

Joint Director of Health Services
(Leprosy & TB) Pune

Copy to –

1. The DTO Satara – To follow up with the respective medical college & Principal Investigator and release the grant-in-aid amount from the "Medical College Budget Head" from RNTCP funds as per the guidelines.
2. Dr. Asha Prathinidi, Director of Research, Department of Medicine, Krishana Hospital and Medical Research Centre, Karad
3. The RNTCP Medical Consultants by email – mhconsultants@rntcp.org
4. The OR Committee Members ..... (All)

Copy with complements to –
Dr. N. N. Ramraje, HOD & Professor Dept of Chest and TB, J. J. Hospital Mumbai & State Task Force Chairperson, Maharashtra.

Govt.of Maharashtra, Health Services
Jt.Director of Health Services (Leprosy & TB)
"AROGYA BHAVAN" Opp. Vishrantwadi Police Station,
Alandi Road, Yerwada, Pune-411006.

Jt.Director - ☎ (020) 26686955
Dy.Director - 26686951
Office - 26686952-54
Fax – 26686956

Section wise e-mail
TB section- stomh@rntcp.org
Lep section - jtlepnms@rediffmail.com
Est section - jdhsest99@gmail.com

No.Jt.DHS/TB&L/ Desk-RNTCP/OR Proposal/ /16
Date - 12/04/2016 2.4337-42
1181

To,
The Dean,
Krishana Hospital and Medical Research Centre,
Karad

Sub:- Sanction of grant-in-aid for Operational Research proposal of Dr. Vaishali Raje, Professor Under RNTCP.

Ref:- The State Operational Research Committee meeting held on 23rd April, 2016 at Disha Hall, Parivartan Building, Arogya Bhavan, Pune.

The following Operational Research proposal submitted by the Principal Investigator (PI) of your institute was discussed in State Operational Research Committee Meeting on 23rd April, 2016 under RNTCP and it has been approved.

Sr.no	Name of the PI	Name of the Department & Medical College	Topic
1	Dr. Vaishali Raje, Professor	Dept. of Community Medicine, Krishana Hospital and Medical Research Centre, Karad	Tuberculosis case detection in high risk population in context to Migrants.

The Principal Investigator (PI) will sign a Memorandum of Undertaking (MOU) with the TB programme manager on behalf of the society for the release of funds. The MOU will include the objects for which she will utilize the funds and the timeline for the study. It will also include the commitment from her to return the funds if the study cannot be taken up due to any reason, and other relevant causes. Funds will be released on the name of the institution of the Principal Investigator, so that the College / Department can ensure the study of its completion / return the funds in the event that the Principal Investigator is moved from the college during the course of the study.

A Grant-in-aid of **Rs. 1,08,000 (Rs. One lac Eight Thousand only)** for the above OR proposal will be released from the "Medical College Budget Head" from RNTCP funds by District TB Officer, Satara

50% of the grant-in-aid will be released initially and remaining 30% after receiving the report of data analysis and 20% will be released after receipt of the four hardcopies of the final documents.

Joint Director of Health Services
(Leprosy & TB) Pune

Copy to –

1. The DTO Satara – To follow up with the respective medical college & Principal Investigator and release the grant-in-aid amount from the "Medical College Budget Head" from RNTCP funds as per the guidelines.
2. Dr. Vaishali Raje, Professor Department of Medicine, Krishana Hospital and Medical Research Centre, Karad
3. The RNTCP Medical Consultants by email – mhconsultants@rntcp.org
4. The OR Committee Members ..... (All)

Copy with compliements to –
Dr. N. N. Ramraje, HOD & Professor Dept of Chest and TB, J. J. Hospital Mumbai & State Task Force Chairperson, Maharashtra.

महाराष्ट्र MAHARASHTRA

AZ 979170

दुय्यम निबंधक कार्यालय, कराड
वि.नं. ५४५५ ता.२६/२/२०१४ किमत रु. ५०/-
श्री KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, KARAD.
Tal. Karad, Dist. Satara. Maharashtra. (India)
☎ 02164 - 241555 to 58
राजाराम भा. पाटील
मुद्रांक विक्रेता, कराड. पावती क्र. २३०३००६/९८
रा. नांदलापूर, ता. कराड

SUB. TREASURY OFFICE KARAD
दि. 20 FEB 2014
SUB TREASURY OFFICER KARAD

PPP INTEGRATED COUNSELING AND TESTING CENTRES (ICTCs)

Memorandum of understanding (MOU)
Between
Krishna Institute of Medical Sciences Deemed University, Karad.
&
National AIDS Control Organisation (NACO)
Government of India,

This Memorandum of Understanding is made on 26th Feb 2014 by and between the Director General, National AIDS Control Organization, Department of Health, Ministry of Health and Family Welfare, Government of India, 9th & 6th Floor, Chandralok Building, 36, Janpath, New Delhi 110 001 (herein referred to as "NACO") on behalf of Project Director of Maharashtra State AIDS control Society, (hereafter referred to as "MSACS"), Dr. Govind Raj, I.A.S, Project Director, Acworth complex, R.A. Kidwai Marg, Wadala, Mumbai -400031

AND

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

सहायक निबंधक व दुय्यम निबंधक कराड
कराड सातारा

Disrtict Programme Officer
DAPCU, Satara.

महाराष्ट्र MAHARASHTRA AZ 979169

दुय्यम निबंधक कार्यालय, कराड
वि.नं. ५४५५ ता. २६/२/२०१४ किंमत रु. ५०
श्री. KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, KARAD.
Tal. Karad, Dist. Satara.
Maharashtra. (India)
☎: 02164 - 241555 to 58
राजाराम भा. पाटील
मुद्रांक विक्रेता, कराड. परवाना क्र. २३०३००६/९८
रा. नांदलापूर, ता. कराड

SUB. TREASURY OFFICE KARAD
28 FEB 2014
SUB TREASURY OFFICER KARAD

Krishna Institute of Medical Sciences Deemed University, Karad, a facility having its office at Karad in Satara District, acting through **Dr. M.V. Ghorpade, The Registrar, Krishna Institute of Medical Sciences Deemed University, Karad** the authorized signatory, hereinafter referred to as PPP implementer, which expression shall, unless repugnant to the context, include its successor in business, administrators, liquidators and assigns or legal representatives.

I. PURPOSE OF THE COLLABORATIVE PROJECT

The purpose of the agreement is to set up NACO certified facility integrated counseling and testing centre for HIV counseling and testing in a private sector/not for profit /non governmental organizations run health facility through a public private partnership. The aim is to provide access to quality HIV counseling and testing services to clients who access private/not for profit health care system in both urban and rural areas of the country.

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

District Programme Officer
DAPCU, Satara.

It is agreement between NACO (through MSACS), and **Krishna Institute of Medical Sciences Deemed University, Karad** to scaling up Integrated Counseling and Testing Centers (ICTC) / Prevention of Parent To Child Transmission of HIV centers (PPTCT) in state and Private Health facilities (private sector/not for profit /non governmental organizations run health facility Hospitals and nursing homes).

II. RESPONSIBILITIES OF THE SACS / DAPCU:

1. To supply rapid HIV diagnostic kits (3 different antigens/ principles) in quarterly advance as per annual requirement to **Krishna Institute of Medical Sciences Deemed University, Karad** subject to availability of above kits with SACS. While every effort will be made to provide uninterrupted supply of above kits, SACS will not be held responsible for any shortage of above kits due to unforeseen circumstances.
2. To provide training of staff of ICTC (staff of facility) in HIV counseling and testing in NACO approved centers. If required more than one training will be provided by the SACS.
3. To supply protective kits for delivery of HIV positive pregnant woman as per requirement to **Krishna Institute of Medical Sciences Deemed University, Karad.**
4. To provide TA/DA as per eligibility to ICTC staff of **Krishna Institute of Medical Sciences Deemed University, Karad** for attending review meeting conducted by SACS as well for collecting the HIV test kits, registers, formats etc. from the office of the SACS and for transport of coded blood sample or delivery of blood test records from **Krishna Institute of Medical Sciences Deemed University, Karad** to the SRL (State Reference Laboratory-State/district ICTC management authority) under the external quality assurance schemes (EQAS) as laid out in "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof
5. To supply PEP (Post-exposure Prophylaxis) drugs for protection of staff of ICTC in the event of accidental exposure to **Krishna Institute of Medical Sciences Deemed University, Karad** as per requirement.
6. To supply IEC material required for an ICTC such as flip charts, posters, condom demonstration models, take home materials to **Krishna Institute of Medical Sciences Deemed University, Karad** as per requirement.
7. To supply condoms required for demonstration and distribution to clients coming to the ICTC as per requirement.
8. To supply prophylactic ARV drugs for prevention of transmission from HIV positive mother to their new born babies as per national protocol.
9. To evaluate the performance of the ICTC periodically as per monitoring and evaluation tools developed by NACO/SACS.
10. To provide Registers and Formats as per "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof.
11. To provide capacity building to the staff of private sector involved in ICTC/PPTCT.
12. Monitoring support whenever required, to ensure smooth functioning of ICTC/ PPTCT in private sector. Nevertheless, also ensure the quality parameter.
13. Support Private Sector ICTC/PPTCT team in record keeping and provide the necessary information to MSACS which can be fed into CMIS format of NACO.

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

Disrtict Programme Officer
DAPCU, Satara.

III. Responsibilities of Krishna Institute of Medical Sciences Deemed University, Karad:

1. To provide a room with suitable, sufficient and convenient space to be used for counseling purpose with adequate furniture, lighting and privacy and any other infrastructure required.
2. To provide a laboratory equipped with refrigerator, centrifuge, micropipette, needle cutter, etc for HIV testing & blood sample storing facility.
3. To designate existing staff or appoint new staff for the posts of counselor and laboratory technician in the ICTC. To also designate an existing Medical Officer as ICTC Manager.
4. To provide consumables such as needles, gloves, syringes, serum storage vials, microtips, etc. of standard quality required for HIV testing to the ICTC.
5. To provide counseling and testing services in the ICTC to any client who approaches the ICTC without discrimination **either freely or on receipt of a charge not exceeding Rs. 75/-** as per protocol laid out in the guideline text per "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. The charge will be used to defray cost for provision of the above services.
6. To entirely bear the costs related to staff salary, infrastructure and consumables required for the ICTC.
7. To respect the privacy of clients and maintain confidentiality. Provide data protection systems to ensure that records of all those who are counseled and tested are not accessible to any unauthorized person.
8. **Stand Alone PPP-ICTC (who are conducting three test, both screening and confirmatory test) will do 100% ART linkages of cases found HIV positive in facility.**
9. **Stand Alone PPP-ICTC will follow all ICTC guidelines/ instructions of NACO which ever recently published.**
10. **To provide linkages and referral facilities to all HIV positive cases detected in Stand Alone PPP ICTC center.**
11. To maintain quality assurance at the service delivery especially in HIV testing services as provided in the guideline text "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. **Krishna Institute of Medical Sciences Deemed University, Karad** will be accountable for any substandard delivery of services.
12. To participate in EQAS (External Quality Assessment Scheme) as laid out in the above mentioned guideline text. Laboratory In charge, **Krishna Institute of Medical Sciences Deemed University, Karad** will send samples in the first week of every quarter, for cross checking to the SRL (state reference laboratory-state/ district ICTC management authority) once every quarter. The laboratory technician designated by **Krishna Institute of Medical Sciences Deemed University, Karad** to ensure that these samples are collected in the first week of January, April, July and October & sent to the SRL.
13. To provide data and information to the coordinating agency to perform their duties as per the instruction and direction from SACS
14. To send monthly report to the SACS/DAPCU in CMIS format by 5th of every month in registers and records supplied by the SACS.

REGISTRAR
Krishna Institute of Medical Sciences
Deemed University, Karad

District Programme Officer
DAPCU, Satara.

15. To use all the IEC materials, condoms, items required for laboratory use, protective kits for delivery, PEP (post exposure prophylaxis) drugs supplied by the SACS at the service delivery purpose by **Krishna Institute of Medical Sciences Deemed University, Karad.**
16. To maintain stock records for the all items and drugs provided by the SACS.
17. To maintain quality waste management of disposable items that is used in HIV testing.
18. To ensure that staff working in the blood collection room and laboratory will observe universal safety precaution (USP).
19. To ensure that ICTC staff are aware of the PEP procedure and display the name and contact information of the PEP focal point/ person as well as the location where the PEP drugs are stored.
20. To follow the national protocol for ARV prophylaxis for prevention of parent to child transmission of HIV (PPTCT).
21. To attend coordination/review meetings conducted by SACS.
22. To ensure that no research or clinical trials are done on the clients who visit the ICTC or based on data of clients who visit the ICTC's.
23. To attend review meetings at the district level and SACS level as per the supervisory protocol that is provided in the "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof. To allow access to authorized NACO/SACS/DAPCU staffs who visit the ICTC to the premises and records of the ICTC.
24. To permit SACS to periodically test designated counselor and Lab. Technician for their knowledge, attitude and skills.
25. To follow the testing methodology & algorithm as mentioned in the "Operational guidelines for Integrated Counseling and Testing Centre" published by NACO, Ministry of Health & Family Welfare, Govt. of India in July, 2007 or any newer version thereof, in the laboratory by **Krishna Institute of Medical Sciences Deemed University, Karad**
26. To follow National AIDS Control Policy & State HIV/AIDS policy.
27. Test kits supplied by MSACS not to be used for routine screening of surgical patients of the facility.

IV. COMMENCEMENT

1) This Memorandum of Understanding shall become effective upon signature by the parties and certification of the facility site. It shall remain in full force and effect for a period of one year thereafter.
2) Further, the certification of the site of the collaborative testing project as "NACO/SACS designated HIV counselling and testing centre" shall run concomitantly with the present Memorandum of Understanding.
3) DAPCU will support the private sector in commencement and closely coordinate for smooth rollout.

REGISTRAR
Krishna Institute of Medical Sciences,
Deemed University, Karad

District Programme Officer
DAPCU, Satara.

V. RENEWAL OF AGREEMENT

1) This Memorandum of Understanding is renewable at the option of **Krishna Institute of Medical Sciences Deemed University, Karad/SACS.**
2) Three months prior to the expiry of the Memorandum of Understanding due to efflux of time SACS shall intimate **Krishna Institute of Medical Sciences Deemed University, Karad** if it intends to renew or not to renew the Memorandum of Understanding.
3) In the event that SACS decides not to renew the Memorandum of Understanding, **Krishna Institute of Medical Sciences Deemed University, Karad** shall give notice to the patients regarding the cancellation of its certification. In the event that SACS decide to renew the Memorandum of Understanding, the terms and conditions of this Memorandum of Understanding, as may be amended, will apply.

VI. TERMINATION OF AGREEMENT

1) Any party may terminate this Memorandum of Understanding after giving three months notice to the other party at the address provided in this Memorandum of Understanding for correspondence or the last communicated for the purpose and acknowledges in writing by other party.

VII. BREACH BY The Registrar, KIMSDU, Karad

1) In case **Krishna Institute of Medical Sciences Deemed University, Karad** is not able to provide services as per agreement or defaults on the provision of this agreement or declines the patient to provide HIV counselling and testing services, it shall be liable for breach of agreement and breach of trust and other consequences which may include black listing with SACS, NACO, MOHFW, Ministry of Home affairs and external affairs.

VIII. SETTLEMENT OF DISPUTES:

1) Any dispute or difference or question arising at any time between the parties hereto arising out of or in connection with or in relation to this agreement shall be referred to and settled by arbitration under the provisions of the Indian Arbitration and Conciliation Act, 1996 or any modification or replacement thereof as applicable for the time being in India.
2) The arbitration shall be referred to an arbitrator nominated by Secretary Department of Legal Affairs, Ministry of Law and Justice, Govt. of India, Delhi. The arbitrator, if he so feels necessary, seek opinion of any healthcare personnel with experience of working in the field of HIV and care and treatment of PLHAs.
3) The place of arbitration shall be either New Delhi or the site of the collaborative laboratory, which shall be decided by the arbitral tribunal bearing in mind the convenience of the parties.
4) The decision of the arbitrator shall be final and binding on both the parties.

REGISTRAR
Krishna Institute of Medical Sciences
Deemed University, Karad

Disrtict Programme Officer
DAPCU, Satara.

VIII. LAW APPLICABLE:

This Memorandum of Understanding shall be construed and governed in accordance with the laws of India.

IX. ADRESSES FOR CORRESPONDENCE

In witness thereof, the parties herein have appended their respective signatures the day and the year above stated.

Signed For and on behalf of The Registrar, Dr. M.V. Ghorpade Krishna Institute of Medical Sciences Deemed University, Karad. Signature ..... Date...28/2/2014 REGISTRAR Krishna Institute of Medical Sciences, Deemed University, Karad In the presence of Name: - Mrs. Bhakti Joshi. Signature Date 26/02/2014	Signed For and on behalf of NACO CS/DPO, DAPCU, _____ MSACS Date Disrtict Programme Officer DAPCU, Satara. Signature ..... Date.....28/2/2014. In the presence of Name Sunilk N. Patil Dist supervisor Signature Date.....28/2/14

STAFF ORDER 2016-2017

INTEGRETED COUNSELING AND TESTING CENTER (ICTC)

MAHARASHTRA STATE AIDS CONTROL SOCIETY (MSACS)

आरोग्य सेवा

जा.क्र/जिशाऊ/आयसीटीसी/समु/पुनि आदेश/ ०६२३-२६ / २०१६
जिल्हा शल्यचिकित्सक यांचे कार्यालय
रयत छा.ना पाटील जिल्हा रूग्णालय ,सातारा.
दिनांक : ०३/०५/२०१६

विषय :महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमांतर्गत "समुपदेशक(आयसीटीसी)" या पदावर सेवा करार वृध्दीबाबत..
संदर्भ : मा.प्रकल्प संचालक,मराएनिसो यांचे पुनर्नियुक्ती आदेश पत्र क्रमराएनिसो आयसीटीसी/मु.मापन/२०१५-१६/८७८३-८९५८ दिनांक: ३१ /०३/२०१६.

आपली महाराष्ट्र राज्य एड्स नियंत्रण सोसायटी ,मुंबई अंतर्गत "समुपदेशक(आयसीटीसी)" या पदावर करारपध्दतीवर जिल्हा शल्यचिकित्सक,सातारा यांचे अधिनिस्त आयसीटीसी कृष्णा वै.महाविद्यालय व रिसर्च सेंटर ,कराड या ठिकाणी एकत्रित परिश्रमिकावर खालील अटींवर पुढील एक वर्षाकरीता सेवा करार वृध्दी करण्यात येत आहे.

१. आपणास एकत्रित परिश्रमिकव्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता,घरभाडे भत्ता वा इतर कोणत्याही नियमित शासकिय कर्मचाऱ्यास मिळणारे लाभ व सवलती इत्यादी अनुज्ञेय नाहीत.
२. आपल्याला इतर शासकिय कर्मचाऱ्यांप्रमाणे महाराष्ट्र नागरी सेवा नियम १९८१ प्रमाणे व इतर अनुषांगिक कोणतेही सेवा नियम लागू होत नाहीत.
३. आपण कामावर हजर झाल्यानंतर शल्यचिकित्सक,सातारा या कार्यालयाने ठरवून दिलेल्या करार पध्दतीवरील शर्ती व विहीत नमुन्यातील करारनामा व वचनपत्रे १०० रू.च्या बॉंड पेपर वरती सादर करावीत,अन्यथा तो पर्यंत आपल्याला परिश्रमिक अदा करण्यात येणार नाही.
४. आपला करार कालावधी हा दिनांक ०२/०४/२०१६ ते ३१/०३/२०१७ पर्यंत असेल.करार कालावधीत आपले कामकाज समाधानकारक नसेल तर आपली सेवा खंडीत करण्याचा अधिकार या कार्यालयास राहील.आपली पुनर्नियुक्ती ही आपल्या कामाचे समाधानकारक मुल्यमापनावर आधारीत असेल.आपली नियुक्ती ही पूर्णपणे कंत्राटी व अस्थाई स्वरूपाची असेल.
५. आपल्या सेवेच्या शर्ती व अटी अनुदान देणाऱ्या संस्थेकडून मिळालेल्या मार्गदर्शक सुचनांनुसार राहतील.त्यात वेळोवेळी होणारे बदल आपणास बंधनकारक राहतील.
६. आपण करारातल्यावरील सेवा सोडताना एक महिना अगोदर या कार्यालयास सुचीत करणे किंवा एक महिन्याचे एकत्रित परिश्रमिक या कार्यालयाकडे अदा करणे बंधनकारक राहील,तसेच या कार्यालयाकडून एक महिन्याची पुर्वसुचना देऊन आपली सेवा समाप्त करण्यात येईल.
७. आपणास आवश्यकता व तातडीनुसार संस्थेच्या नियंत्रणाखालील इतर कोणत्याही सेंटरमध्ये काम करावे लागेल.
८. करार संपल्यानंतर पुढील नियुक्ती देणे किंवा न देणेबाबत महाराष्ट्र राज्य एड्स नियंत्रण संस्थेचा निर्णय अंतिम राहील.
९. आपणास करार कालावधीत मराएनिसं नियमानुसार एका पूर्ण महीन्याला २½ या प्रमाणे वार्षीक ३० किरकोळ/अर्जित रजा , १० वैद्यकिय रजा व महिला कर्मचाऱ्यांना १२ आठवडे पगारी प्रसुती रजा व सर्व शासकिय सुट्टया देय राहतील.

जिल्हा शल्यचिकित्सक, सातारा

प्रती: श्रीम. प्रमिला मानसिंग जाधव
समुपदेशक,आयसीटीसी कृष्णा हॉस्पीटल, कराड..

प्रत माहितीस्तव व कार्यवाहीस्तव
१. इनचार्ज आयसीटीसी ,कृष्णा हॉस्पीटल,कराड.
२. जिल्हा कार्यक्रम अधिकारी ,डापकू सातारा.

प्रत माहितीस्तव सादर: मा.प्रकल्प संचालक,मराएनिसो , मुंबई.

आरोग्य सेवा

जा.क्र/जिशाल/आयसीटीसी/प्रशा/पुनि आदेश/०६४७-६८ / २०१६
जिल्हा शल्यचिकित्सक यांचे कार्यालय
स.प्रा.ना पाटील जिल्हा रूग्णालय ,सातारा.
दिनांक : ०३/०३/२०१६

विषय :महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमांतर्गत "प्रयोगशाळा तंत्रज्ञ (आयसीटीसी)" या पदावर सेवा करार वृध्दीबाबत..
संदर्भ : मा.प्रकल्प संचालक,मराएनिसो यांचे पुनर्नियुक्ती आदेश पत्र क्रं.मराएनिस आयसीटीसी/मु.मापन/२०१५-१६/८७८३-८९५८ दिनांक: ३१ /०३/२०१६.

आपली महाराष्ट्र राज्य एड्स नियंत्रण सोसायटी ,मुंबई अंतर्गत **"प्रयोगशाळा तंत्रज्ञ (आयसीटीसी)"** या पदावर करारपध्दतीवर जिल्हा शल्यचिकित्सक,सातारा यांचे अधिनिस्त आयसीटीसी ,कृष्णा वैद्यकिय महाविद्यालय कराड या ठिकाणी एकत्रित परिश्रमिकावर खालील अटीवर पुढील एकवर्षाकरीता सेवा करार वृध्दी करण्यात येत आहे.

१. आपणास एकत्रित परिश्रमिकव्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता,घरभाडे भत्ता वा इतर कोणत्याही नियमित शासकिय कर्मचाऱ्यास मिळणारे लाभ व सवलती इत्यादी अनुज्ञेय नाहीत.
२. आपल्याला इतर शासकिय कर्मचाऱ्यांप्रमाणे महाराष्ट्र नागरी सेवा नियम १९८१ प्रमाणे व इतर अनुषांगिक कोणतेही सेवा नियम लागू होत नाहीत.
३. आपण कामावर हजर झाल्यानंतर शल्यचिकित्सकसातारा या कार्यालयाने ठरवून दिलेल्या करार पध्दतीवरील शर्ती व विहीत नमुन्यातील करारनामा व वचनपत्रे १०० रू. च्या बॉंड पेपर वरती सादर करावीत,अन्यथा तो पर्यंत आपल्याला परिश्रमिक अदा करण्यात येणार नाही.
४. आपला करार कालावधी हा दिनांक ०२/०४/२०१६ ते ३१/०३/२०१७ पर्यंत असेल.करार कालावधीत आपले कामकाज समाधानकारक नसेल तर आपली सेवा खंडीत करण्याचा अधिकार या कार्यालयास राहील.आपली पुनर्नियुक्ती ही आपल्या कामाचे समाधानकारक मुल्यमापनावर आधारीत असेल.आपली नियुक्ती ही पुर्णपणे कंत्राटी व अस्थाई स्वरूपाची असेल.
५. आपल्या सेवेच्या शर्ती व अटी अनुदान देणाऱ्या संस्थेकडून मिळालेल्या मार्गदर्शक सुचनांनुसार राहतील.त्यात वेळोवेळी होणारे बदल आपणास बंधनकारक राहतील.
६. आपण करारतत्वावरील सेवा सोडताना एक महिना अगोदर या कार्यालयास सुचीत करणे किंवा एक महिन्याचे एकत्रित परिश्रमिक या कार्यालयाकडे अदा करणे बंधनकारक राहील,तसेच या कार्यालयाकडून एक महिन्याची पुर्वसुचना देऊन आपली सेवा समाप्त करण्यात येईल.
७. आपणास आवश्यकता व तातडीनुसार संस्थेच्या नियंत्रणाखालील इतर कोणत्याही सेंटरमध्ये काम करावे लागेल.
८. करार संपल्यानंतर पुढील नियुक्ती देणे किंवा न देणेबाबत महाराष्ट्र राज्य एड्स नियंत्रण संस्थेचा निर्णय अंतिम राहील.
९. आपणास करार कालावधीत मराएनिस नियमानुसार एवा पूर्ण महीन्याला २½ या प्रमाणे वार्षीक ३० किरकोळ/अर्जित रजा , १० वैद्यकिय रजा व महिला कर्मचाऱ्यांना १२ आठवडे पगारी प्रसुती रजा व सर्व शासकिय सुट्ट्या देय राहतील.

जिल्हा शल्यचिकित्सक,सातारा

प्रती: श्रीम.सरीता दिलीप जाधव
प्र.ज्ञा.तंत्रज्ञ ,आयसीटीसी ,कृष्णा वैद्य.महाविद्यालय, कराड.

प्रत माहितीस्तव व कार्यवाहीस्तव
१. इनचार्ज आयसीटीसी ,कृष्णा वैद्य.महाविद्यालय, कराड.
२. जिल्हा कार्यक्रम अधिकारी ,डापकू सातारा.

प्रत माहितीस्तव सादर: मा.प्रकल्प संचालक ,मराएनिसो, मुंबई.

Lancet. 2017 Sep 16;390(10100):1260-1344. doi: 10.1016/S0140-6736(17)32130-X.

Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016

GBD 2016 DALYs and HALE Collaborators

Collaborators

PMID: 28919118 PMCID: PMC5605707 DOI: 10.1016/S0140-6736(17)32130-X
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2017 Oct 28;390(10106):e38. doi: 10.1016/S0140-6736(17)32648-X. Epub 2017 Oct 13.
PMID: 29032998 Free PMC article. No abstract available.

Abstract

Background: Measurement of changes in health across locations is useful to compare and contrast changing epidemiological patterns against health system performance and identify specific needs for resource allocation in research, policy development, and programme decision making. Using the Global Burden of Diseases, Injuries, and Risk Factors Study 2016, we drew from two widely used summary measures to monitor such changes in population health: disability-adjusted life-years (DALYs) and healthy life expectancy (HALE). We used these measures to track trends and benchmark progress compared with expected trends on the basis of the Socio-demographic Index (SDI).

Methods: We used results from the Global Burden of Diseases, Injuries, and Risk Factors Study 2016 for all-cause mortality, cause-specific mortality, and non-fatal disease burden to derive HALE and DALYs by sex for 195 countries and territories from 1990 to 2016. We calculated DALYs by summing years of life lost and years of life lived with disability for each location, age group, sex, and year. We estimated HALE using age-specific death rates and years of life lived with disability per capita. We explored how DALYs and HALE differed from expected trends when compared with the SDI: the

Lancet. 2017 May 13;389(10082):1885-1906. doi: 10.1016/S0140-6736(17)30819-X.
Epub 2017 Apr 5.

Smoking prevalence and attributable disease burden in 195 countries and territories, 1990–2015: a systematic analysis from the Global Burden of Disease Study 2015

GBD 2015 Tobacco Collaborators

Collaborators

PMID: 28390697 PMCID: PMC5439023 DOI: 10.1016/S0140-6736(17)30819-X
Free PMC article

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Lancet. 2017 Oct 7;390(10103):1644. doi: 10.1016/S0140-6736(17)32559-X. Epub 2017 Oct 5.
PMID: 29131796 Free PMC article. No abstract available.

Abstract

Background: The scale-up of tobacco control, especially after the adoption of the Framework Convention for Tobacco Control, is a major public health success story. Nonetheless, smoking remains a leading risk for early death and disability worldwide, and therefore continues to require sustained political commitment. The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) offers a robust platform through which global, regional, and national progress toward achieving smoking-related targets can be assessed.

Methods: We synthesised 2818 data sources with spatiotemporal Gaussian process regression and produced estimates of daily smoking prevalence by sex, age group, and year for 195 countries and territories from 1990 to 2015. We analysed 38 risk-outcome pairs to generate estimates of smoking-attributable mortality and disease burden, as measured by disability-adjusted life-years (DALYs). We then performed a cohort analysis of smoking prevalence by birth-year cohort to better understand temporal age patterns in smoking. We also did a decomposition analysis, in which we parsed out changes in all-cause smoking-attributable DALYs due to changes in population growth, population

Mater Sci Eng C Mater Biol Appl. 2017 Aug 1;77:857-866. doi: 10.1016/j.msec.2017.04.003. Epub 2017 Apr 3.

Islet encapsulated implantable composite hollow fiber membrane based device: A bioartificial pancreas

Rohit S Teotia [1], Sachin Kadam [2], Atul Kumar Singh [3], Surendra Kumar Verma [4], Ashutosh Bahulekar [2], Sujata Kanetkar [2], Jayesh Bellare [5]

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5 Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai 400079, Maharashtra, India; Centre for Research in Nanotechnology & Science, Indian Institute of Technology Bombay, Powai, Mumbai 400079, Maharashtra, India; Department of Chemical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai 400079, Maharashtra, India; Wadhwani Research Center for Bioengineering, Indian Institute of Technology Bombay, Powai, Mumbai 400079, Maharashtra, India. Electronic address: jb@iitb.ac.in.

PMID: 28532102 DOI: 10.1016/j.msec.2017.04.003

Abstract

Islets from xeno-sources and islet like clusters derived from autologus stem cells have emerged as alternatives to cadaveric pancreas used for treatment of type 1 diabetes. However, the immuno-isolation of these islets from the host immune system suffers from the issue of biocompatibility and hypoxia. To overcome the issues of immunobarrier biocompatibility, we developed a Polysulfone (Psf)/TPGS composite hollow fiber membrane (HFM) using a hollow fiber spinning pilot plant specially developed for this purpose. Important structural variables such as fiber material, dope composition, dimensions, surface characteristics etc., were precisely engineered and tuned for bioartificial pancreas

Randomized Controlled Trial Pediatr Dent. 2017 Nov 1;39(7):434-438.

Antiplaque, Antifungal Effectiveness of Aloevera Among Intellectually Disabled Adolescents: Pilot Study

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Affiliations

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2 Senior lecturer, Department of Public Health Dentistry, Thai Moogambigai Dental College and Hospital, Dr. M. G. R. Educational and Research Institute, Chennai, Tamil Nadu, in India;, Email: samuelrajsrinivasan@gmail.com.
3 Professor and head, Department of Public Health Dentistry, Manipal College of Dental Sciences, Manipal University, Manipal, Karnataka, in India.
4 Senior lecturer, Department of Public Health Dentistry, School of Dental Sciences, Karad, Maharashtra, in India.

PMID: 29335048

Abstract

Purpose: Various candida species have been associated with poor oral hygiene and active carious lesions. The purpose of this study was to evaluate the effectiveness of aloe vera compared to triclosan toothpaste against total candida, C. albicans, C. tropicalis, Candida krusei, and plaque/gingivitis among intellectually disabled adolescents over 30 days.

Methods: A double-blind prospective randomized trial was conducted among 40 intellectually disabled adolescents randomly allocated into aloe vera/triclosan groups. The gingival (Löe and Silness index), plaque (Silness and Löe index), and candidal carriage counts were assessed at baseline and follow-up. Caregivers brushed the participant's teeth twice a day using a modified bass method and refrained from any other oral hygiene practices for at least two hours prior to assessment.

Results: Aloe vera-contaiing toothpaste caused significant reductions in gingival inflammation and plaque index scores compared to the triclosan group at the end of 30 days. Also, total candidal counts and C. albicans counts were significantly lower in the aloe vera group compared to triclosan at the end of the 30-day follow-up ($P<0.05$).

Facial Plast Surg. 2017 Feb;33(1):109-111. doi: 10.1055/s-0036-1597951. Epub 2017 Feb 22.

Cutaneous Lymphadenoma: A Trichoblastoma with Regressive Inflammatory Changes

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2 Department of Pathology, Joan and Sanford I Weill Medical College of Cornell University, New York, New York.
3 Department of ENT, Krishna Institute of Medical Sciences Deemed University, Karad, Maharashtra, India.

PMID: 28226379 DOI: 10.1055/s-0036-1597951

Abstract

The authors address the entity of cutaneous lymphadenoma. Although considered benign, cutaneous lymphadenoma can be easily misdiagnosed as basal cell carcinoma because of its close clinical and histological resemblance. This entity is rare and controversial both in terms of its histogenesis and the various diagnostic terms assigned to it throughout the literature. While rare, cutaneous lymphadenoma should be considered in the differential of any facial nodule or papule in addition to the more common basal cell carcinoma, nevi, cysts, and appendiceal tumors.

Thieme Medical Publishers 333 Seventh Avenue, New York, NY 10001, USA.

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Full Text Sources

Georg Thieme Verlag Stuttgart, New York
Ovid Technologies, Inc.

Other Literature Sources

Comparative Study J Indian Soc Pedod Prev Dent. Jan-Mar 2017;35(1):75-82.
doi: 10.4103/0970-4388.199235.

Comparative evaluation of secondary caries formation around light-cured fluoride-releasing restorative materials

N Sathyajith Naik [1], V V Subba Reddy [2], N D Shashikiran [3]

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Abstract

Aim: The aim of this study was to compare and evaluate secondary caries formation around light-cured fluoride-releasing restorative materials.

Methodology: Standard Class V cavities were prepared on the buccal and lingual surfaces of forty extracted healthy premolars. The teeth were randomly divided into four groups of ten teeth each and labeled as Group I, II, III, and IV and restored with one of the following materials, namely, Fuji II LC (Group I), Vitremer (Group II), F-2000 (Group III), and Z-100 (Group IV; Control). The teeth were thermocycled and immersed in jars containing an acid gel for caries-like lesion formation. After 15 weeks, the samples were removed, washed, and sectioned buccolingually through the restoration. The sections were then grounded to a thickness of 80-100 μm. After imbibition in water, the sections were mounted on slides and lesions were examined, measured, and photographed with Leica DMRB Research Microscope. The observation recorded was subjected to (a) analysis of variance, (b) Studentized range test (Newman-Keuls), (c) Snedecor's F-test.

Results: The depth of the outer lesion in teeth restored with Z-100 (Group IV; Control) was significantly higher than the teeth restored with F-2000 (Group III), Vitremer (Group II), and Fuji II LC (Group I) ($P < 0.01$). The depth of the outer lesion in teeth restored with F-2000 (Group III) was also significantly higher than the teeth restored with Vitremer (Group II) and Fuji II LC (Group I) ($P < 0.01$). However, there was no significant difference in depth of the outer lesions among the teeth restored with Vitremer (Group II) and Fuji II LC (Group I). No wall lesion (WL) was evident in teeth restored with Vitremer (Group II) and Fuji II LC (Group I). The WL length and body depth in teeth restored with Z-

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Prevalence and risk factors of hypertension and diabetes in the Katkari tribe of coastal Maharashtra

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Abstract

Background and Objectives:

Urban and rural India are both going through health epidemiological transition and will soon face huge burden of noncommunicable diseases (NCDs). Information on the status of NCDs in tribals is limited. Although the prevalence of hypertension in scheduled tribes (STs) has been studied in several states by the National Nutrition Monitoring Bureau, tribe-specific data are very scanty. The objective of this study was to generate data on the status of hypertension and diabetes, the two objectively measurable NCDs in Katkaris, the dominant ST in the Raigad district of coastal Maharashtra.

Methods:

The study was conducted in 410 adult Katkaris (women 219) of both sexes of ≥18 years of age in three adjoining tehsils of the district. Using the Institution Review Board approved protocol; information was obtained on sociodemographic parameters, educational level, dietary pattern, and substance abuse. Prevalence of overweight, hypertension, and diabetes was measured using standard field-based procedures and techniques.

Results:

Katkaris, who are mostly landless manual laborers, subsist on a protein-poor, imbalanced diet. About half of women and one-third of men have body mass index (BMI) <18.5 kg/m^2, an indication of undernutrition. On the other hand, about 2% of participants were obese (BMI ≥30 kg/m^2). The overall prevalence of hypertension and diabetes was 16.8% and 7.3%, respectively. Hypercholesterolemia was recorded in about 3% of the participants.

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ORIGINAL ARTICLE

Brucellosis: Seroprevalence, Knowledge, Attitude and Practice among Veterinarians

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Abstract:

Background: Brucellosis is an important but ignored zoonotic disease in India, with high prevalence among livestock and humans. It is of particular concern among veterinarians as they come in contact with infected animals in their day to day work. *Aim and Objectives:* The present study was carried out to determine the prevalence of antibrucellar antibodies and assess the Knowledge, Attitude and Practice (KAP) levels with regards to brucellosis among the veterinarians. *Material and Methods:* The serum samples of 1084 veterinarians were evaluated using the Rose Bengal Plate agglutination Test (RBPT), Serum Agglutination Test (SAT) and 2-Mercaptoethanol Test (2-ME test). All the participants were interviewed with a pre-designed questionnaire. *Results:* Prevalence of antibrucellar antibodies among the veterinarians was 9.31% by RBPT. Clinical symptoms relating to brucellosis were seen in 4.33% individuals. Of the 1084 subjects screened for KAP, awareness was highest among the veterinary officers and students, while other veterinary workers were ignorant. Though most of the veterinary officers had adequate knowledge and positive attitude the regular preventive practices were not sound. *Conclusion:* Significantly higher seroprevalence of brucellosis was noted among veterinarians. High 2-ME titres were a better correlate of an active infection. Awareness regarding brucellosis among assisting staff was low. Training and health education programs to raise the KAP standard are necessary.

Keywords: Brucellosis, Knowledge, Attitude and Practice, Rose Bengal Plate agglutination Test, Serum Agglutination Test, 2-Mercaptoethanol Test

Introduction:

Brucellosis remains an important zoonotic disease worldwide, accounting for more than 500,000 cases annually [1]. It has been eradicated from many developed countries. However it remains an uncontrolled problem in regions of high endemicity such as the Mediterranean, Middle East, Africa, Latin America and parts of Asia [2, 3]. Presence of brucellosis in India was established in the year 1942 [4]. Since then it has been reported from almost all the states. However it remains neglected probably due to lack of awareness among population at risk and treating physicians. This study was undertaken to evaluate the serological and clinical aspects of brucellosis and to assess the KAP standards among the veterinarians.

Material and Methods:

Veterinarians from Satara and Sangali districts of Maharashtra and from Bijapur and Bagalkot districts of Karnataka were included in this cross-sectional study. The rationale behind the study was explained to the study subjects. Veterinarians and healthy individuals (controls) who gave their consent were included in the study and those who denied were excluded from the study. Blood samples were collected aseptically from 975 employees of Department of Animal Husbandry and Veterinary Services and 109 private veterinary practitioners. Seven hundred serum samples from

Int J Clin Pediatr Dent. Apr-Jun 2017;10(2):172-176. doi: 10.5005/jp-journals-10005-1429. Epub 2017 Jun 1.

Prevalence of Dental Caries and Traumatic Dental Injuries among 6- to 12-year-old Children in Bhopal City, India

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PMID: 28890618 PMCID: PMC5571387 DOI: 10.5005/jp-journals-10005-1429
Free PMC article

Abstract

Introduction: Dental caries and trauma are the most common oral health problems for many decades. There is need for prevalence data to analyze the nature of the problems and to take necessary steps in improving public health.

Aim and objectives: To assess the prevalence of dental caries and traumatic dental injuries among schoolchildren of age 6 to 12 years in Bhopal city.

Settings and design: Cross-sectional study design was selected. Universal sampling method was followed in this study.

Materials and methods: A total of 1,204 children were examined. The distribution of samples was done based on age, gender, residing area, and type of school.

Statistical analysis: Data were collected and statistically evaluated under chi-square test and analysis of variance.

Results: The overall caries experience (73.17%) was found to be higher than that of traumatic injury experience (20.9%). There was age-related correlation between age and decay, missing, and filled teeth score.

Conclusion: Since most injuries occur at home or at school, educating the individual is the key that will have a great impact on the prognosis of traumatic injuries. Also good food habits need to be instilled in children from a tender age with the help of parents, which is the ultimate solution to fight caries.

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Keywords: Dental caries; Dental trauma; Prevalence..

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Socio-demographic Profile of Snake Bite Cases Admitted in Tertiary Hospital in Bengaluru

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ABSTRACT

Introduction: Snake-bite is a known cause of increased mortality and morbidity in our country. **Materials and method:** A cross sectional study of a total of 443 cases of snake bite admitted in Victoria hospital, Bengaluru, was conducted over a period of 18 months from November 2011 to May 2013. **Results:** A total of 443 cases of snake bite were analysed. Out of 443 cases, 62.75% (n=278) were from rural area and 37.25% (n=165) from urban area. Most common age group of cases of snake bite was 20-29 years (28.89%). Males (64.3%) were commonly affected than females (35.7%). The highest number of cases were seen in the month of June (11.5%, n=34) followed by October and November (11.2%, n=33). In the study period, majority of cases of snake bite were improved (95%) where as death occurred in 5% cases. **Conclusion:** Snakebite still remains a major occupational hazard affecting productive age group predominantly males in rural area involved in agriculture.

Keywords: *Snakebite, morbidity, mortality, sociodemography.*

INTRODUCTION

Snake bite is a public health problem distributed mainly in the tropical and sub-tropical countries[1].Snake bite results in approximately 2500,000 venomous bites each year and 125,000 deaths worldwide[2]. Envenomation in India is estimated to be at 81,000/year, which is highest in the world[3].

People in countries like India prefer traditional healers rather than trained doctors, mainly because of ignorance and monetary issues as a result of which 77% of the snakebite victims in rural areas die outside the health care set up[3]. Reliable data for morbidity and mortality are not available since there is no proper reporting system[4]. Very few epidemiological surveys had been done on the snake bite problem in India. To know the problem and to get some way out to tackle the problem, knowledge regarding epidemiological profile of snake bite is essential[5,6,7].

The study of the pattern of snakebite is essential to provide pertinent information to the concerned authorities in order to manage snakebite appropriately[8].The study was conducted to know the socio-demographic profile of snake bites cases admitted in Victoria hospital, Bengaluru.

MATERIALS AND METHOD

A cross sectional study of a total of 443 cases of snake bite admitted in Victoria hospital, Bengaluru, was conducted over a period of 18 months from November 2011 to May 2013. The data regarding age, sex, occupation, education, residence, seasonal variation, hospital stay and outcome was collected. All the patients coming to casualty with the history of snakebite during the study period were considered. Data was collected and analysed with Microsoft excel and presented as descriptive statistics.

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Comprehensive Analysis of Fatal Poisoning Cases: An Autopsy Study

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ABSTRACT

Introduction: Poisoning is a major health problem in developing countries like India. Epidemiology of poisoning can help to take measures for prevention of poisoning.

Objective: To assess the magnitude of unnatural death due to poisoning and to determine the various parameters of poisoning such as mode and type of poisoning, relation to age and sex , vulnerable age group, religion, seasonal variation, place of occurrence and to find out the most common type of poison consumed.

Materials and method: Present study was conducted retrospectively during January 2011 to December 2011, which included 327 cases of death due to poisoning brought for postmortem examination at Department of Forensic Medicine and Toxicology, Victoria hospital, Bangalore medical college and research institute, Bengaluru. Information pertaining to sociodemography, place of occurrence of poisoning and type of poisoning etc was collected and analysis was done.

Results: Out of 3544 post mortem examinations done during study period, 9.22 % (n-327) cases were that of poisoning. We observed that majority of victims were male (66.97%, n-219) and from urban area (71.86%, n-235). Peak incidence was observed in the age group of 21- 30 years (33.33%, n-109). Majority of deaths were suicidal (78.89%, n-258). Organophosphorous compound poisoning accounted in 53.53 % (n-175) cases.

Conclusion: The mortality and morbidity due to poisoning can be reduced by conducting educational programs, providing counselling services and poison information services to the needy people. Strict legal enforcement in selling and handling of agrochemicals is the need of the hour to avoid premature loss of human resource from death due to poisoning.

Keywords: *Fatal, Poisoning, Autopsy, Analysis*

INTRODUCTION

Poison is a substance that causes damage or injury to the body and endagers one's life due to its exposure by means of ingesion, inhalation, or contact.[1] Poisons are subtle and silent weapons, which can be easily used without violence and often without arousing suspicion.[2] Poisoning is a medical emergency and a patient is always invariably rushed to the hospital at the earliest possible moment, irrespective of the amount and nature of poison ingested. All the cases of poisoning are admitted through emergency services where the safety of life of the patient is the main issue for the doctor.[3] Poisoning is an important cause of morbidity

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Estimation of Stature from Head Length of Adults Belonging to Soligas- A Genetically Isolated Tribe from Southern India

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ABSTRACT

Stature is an important primary character that defines an individual's identity and has paramount importance when only a part of body or a grossly mutilated body is available to the expert for forensic work up. Presently there exist no studies on populations which are ancient, unique, which are geographically, genetically and culturally isolated; Soliga tribal population of BR Hills represents one such population. Stature and head length were measured among 98 soliga volunteers above 25 years of age. Average stature observed was 164.39 cm in males and 152.67 cm in females. Average Head length was 17.88 cm in males and 16.80 cm in females. Positive correlation exists between stature and head length amongst the soliga population. A set of simple regression equations (combined and separate for males and females) of forensic significance were established. To assess the accuracy, the means of the minimum, maximum and average head length were applied to the respective equations and when the means of the estimated values and original values were compared, statistically insignificant differences ($p > 0.05$) were yielded implying that the equations can be applied to the Soliga tribal population within acceptable margins of error.

Keywords:-Stature, Head length, Forensic anthropology, Human remains identification, Soligas.

INTRODUCTION

Identification of an individual, living or dead is of paramount importance in forensic practice, especially when dismembered body parts or skeletal remains are received for examination. Eventually one has to define identification features like race, sex, age and stature. Two major methods exist for estimation of stature: the anatomical method, which requires the presence of a complete skeleton and is more useful in examination and interpretation of archeological remains and has limited or no forensic applicability when the bodies are dismembered or mutilated. Under such scenario the mathematical method, which requires a complete or a partial long bone or a body part and employs regression formulae or multiplication factors to estimate the stature based on the correlation of individual measurements to living statures fulfills the forensic need[1, 2]. Various dimensions/measurements of the various body parts exhibit biological relationships of different degrees with the stature of an individual. Populations exhibit variations with regards to body proportions because of the various factors like ethnicity, geographical location, nutrition status, physical activity and environment [3, 4]

Careful literature review reveals that presently there exist no studies on populations which are ancient, unique, which are geographically, genetically and culturally isolated; these populations are the best candidates for any anthropometric and anthropological study. Soliga tribal population of BR Hills represents one such population[5]. There currently are no population-specific standards reported for the Soliga tribal population despite, abundance of research, all over India and elsewhere especially concerning the relationship between Head length (HL) and stature. This paper represents a specific part of a wide study - *"Anthropometric profile of Soliga tribal population"*. The present paper focuses mainly on relationship between head length and stature in

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Degradation of Resin Restorative Materials by Streptococcus Mutans: A Pilot Study

Ankit K Gautam, Ruchi Thakur, N D Shashikiran, Singla Shilpy, Nikita Agarwal, Shilpi Tiwari

PMID: 28422601 DOI: 10.17796/1053-4628-41.3.225

Abstract

Objective: To evaluate the degradation of three resin based restorative materials by S Mutans.

Study design: Class I cavity was prepared in extracted premolars and were randomly divided into 3 groups (Group I - Conventional composite (CC), Group II - Resin Modified GIC and Group III-Giomer). Teeth were then restored by respective restorative material and equally divided in two subgroups (Control and Experimental). Experiment subgroup samples were then incubated in 2 ml of BHI with 1:10 dilution of SM (MTCC-497) grown overnight in BHI whereas control subgroup samples were incubated in BHI without SM. The incubation solution was collected at 2,14 and 30 days interval, and the analysis for identification and quantification of Bis-HPPP was done by High performance Liquid Chromatography.

Results: Statistical analysis of the collected data revealed a statistically increased Bis HPPP production in the presence of SM in all the tested materials, with minimum in Resin Modified GIC and a maximum in Conventional Composite (CC).

Conclusion: SM degrades the resin based restorative materials & among the tested materials Resin Modified GIC appears to be most Biostable.

Keywords: High performance liquid chromatography; Resin; S mutans; degradation.

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Comparative Study Indian J Dent Res. Sep-Oct 2017;28(5):560-565.

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Comparative evaluation of inhibitory effect of curcumin and doxycycline on matrix metalloproteinase-9 activity in chronic periodontitis

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Free article

Abstract

Background and objectives: The pathogenesis of inflammatory periodontal diseases essentially involves degradation of extracellular matrix molecules, and collagen breakdown and matrix metalloproteinases (MMPs) are proteinases primarily involved in this process. It is known that doxycycline downregulates MMP activity. Curcumin has anti-inflammatory effect and also downregulates MMP activity. Thus, a study was conducted to evaluate the anti-inflammatory effect of curcumin by its inhibition of MMP-9 activity and compare the same with doxycycline, which has known anticollagenase activity.

Subjects and methods: Gingival tissue samples were obtained from thirty patients diagnosed with chronic periodontitis. The tissue extracts were treated with Curcumin and doxycycline and inhibition of MMP-9 analyzed by gelatinzymography. Gels obtained were stained with Coomassie Brilliant Blue, and enzymatic activities detected as bands of gelatinlysis against blue background. Relative MMP-9 levels were measured by scanning the clear zones and analyzing the percentage inhibition.

Results: Results showed that MMP-9 activity was significantly decreased by both the drugs. Curcumin showed 61.01% reduction in the MMP-9 activity at 1500 µg/ml concentration and doxycycline showed

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Research Article

PHYTOCHEMICAL STUDIES AND PHARMACOGNOSTICAL EVALUATION OF *ZINGIBER CASSUMUNAR* ROXB

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ABSTRACT

Objective: *Zingiber Cassumunar* Roxb is a well known medicinal plant employed to cure various diseases were reported to possess good medicinal value in traditional system of medicine. The present investigation deals with microscopic, macroscopic and preliminary phytochemical investigation of rhizome to give clear standards for identification of the drug.

Method: For the microscopic evaluation, the powder was soaked in a solution of 20% chloral hydrate and then mounted on a glass slide with the help of glycerine. The mounted slides were then observed under a photographic microscope. Microscopic sections were cut by free hand sectioning.

Result: The research paper study revealed that the yellow colour inside the rhizome is the main characteristic feature. The presence of central cylinder region containing yellow coloured oleo-resin and oil cells in cortex are the main characteristic feature. The presence irregularly rounded, ovoid starch grains and oil globulues situtated inside the parenchyma are the distinguishing features and can be used as anatomical markers. Rhizome powder showed some of the characteristic features such as starch grains with a rounded shape situated at narrow end and parenchymatous cells with characteristically wrinkled wall, air spaces. Cork, cortex, cork cells, and floem fibres also shows pharmacognostical characteristics of *Z. cassumunar* Roxb. Preliminary phytochemical analysis of the rhizomes revealed the presence of glycosides, sterols, triterpenes, saponins, tannins, flavonoids, amino acids and volatile oils.

Conclusion: The present study signifies the use of TLC (Thin layer chromatography) profiles for determining the identity of active chemical constituents.

Keywords: *Zingiber cassumunar* Roxb, Indigenous medicines, Oil globulues, Pharmacognostical characteristics, Thin layer chromatographic.

 DOI: http://dx.doi.org/10.22159/ajpcr.2017.v10i10.20004

INTRODUCTION

India has heritage of traditional medicine. Materia medica of India provides a lot of information on the folklore practices and traditional aspects of therapeutically important natural products. The evaluation of these drugs is mostly based on phytochemical, pharmacological, and allied approaches including various instrumental techniques such as chromatography, microscopy, and others [1]. The herbal medicine is based on traditional medicine, exists in every continent of the globe and in every cultural area of the world. Each of these traditional medicines has its own origin and an individual basic philosophy [2]. Exploration of the chemical constituents of the plants and pharmacological screening may provide us the basis for developing a lead molecule. Herbs have provided us some of the very important life-saving drugs used in the armamentarium of modern medicine.

About *Zingiber cassumunar* Roxb.

Zingiber cassumunar Roxb. (family: *Zingiberaceae*), known locally as "Phlai" in Thai, is a perennial herb, consisting of underground rhizomes. Conventionally, the rhizome of this plant has been used for treatment of inflammation, muscle and joint problems, menstrual disorders, abscesses, and skin diseases and wound healing the ethnomedical use of *Z. cassumunar* Roxb. (*Zingiberaceae*) and its frequently reported uses of the rhizome include topical treatment of sprains, contusions, abscesses, and skin diseases. The rhizome can be crushed and directly rubbed onto the afflicted area or the sliced rhizome can be fried in a pan together with coconut oil, to obtain a composite oil, which is applied to the inflamed area [3]. The findings support the use in Thai traditional medicine of Zingiberaceous plants, especially *Z. cassumunar*, for treatment of allergy and allergic-related diseases [4].

Phytochemical investigations of *Z. cassumunar* rhizomes have revealed the presence of phenylbutanoids, cyclohexene derivatives, naphthoquinones, vanillin, vanillic acid, veratric acid, terpenoids, β-sitosterol, and curcuminoids.

In combination with other medicinal plants, *Z. cassumunar* was found to be effective in relieving asthmatic symptoms in children and adults. Several isolated compounds have been found to possess anti-inflammatory activity, for example, two phenylbutanoids [5]. (*E*)-4-(3,4-dimethoxyphenyl)but-3-enyl acetate and (*E*)-4-(3,4-dimethoxyphenyl)but-1,3-diene.

Ginger has been used as a spice and as natural additives for more than 2000 years [6]. Furthermore, ginger has many medicinal properties. Studies have shown that the long-term dietary intake of ginger has hypoglycemic and hypolipidemic effect [7]. Ginger has been identified as an herbal medicinal product with pharmacological effect. Ginger suppresses prostaglandin synthesis through inhibition of cyclooxygenase - 1 and cyclooxygenase - 2. In traditional Chinese and Indian medicine, ginger has been used to treat a wide range of ailments including stomach aches, diarrhea, nausea, asthma, and respiratory disorders [8]. Ginger is widely used because it contains good medicinal properties.

Other *Zingiber zerumbet* (L.) Sm. (family: *Zingiberaceae*) have revealed the isolation of flavonoids, sesquiterpenes, and aromatic compounds. The volatile oil of the rhizome contains zerumbone, humulene, camprene α-caryophyllene, and camphene. The rhizomes of this plant are used as an anti-inflammatory agent in traditional medicine. A monocyclic sesquiterpene, zerumbone (2*E*, 6*E*,10*E*-humulatrien-1-one), which

J Oral Maxillofac Pathol. Sep-Dec 2017;21(3):455-456. doi: 10.4103/jomfp.JOMFP_236_14.

Influence of risk factors on patients suffering from potentially malignant disorders and oral cancer: A case-control study

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Free PMC article

Abstract

Background: Tobacco use can alone lead to death worldwide, especially in developing and underdeveloped countries. China and Brazil are the world's largest producer of tobacco. India holds the third place in producing, and it is the fourth largest consumer of tobacco and its products in the world.

Objectives: A case-control study was carried out to assess the influence of risk factors on patients with potentially malignant disorders (PMD) and oral cancer.

Materials and methods: Fifty cases diagnosed with PMD and oral cancer patients were selected for the study. An equal number 50 healthy controls who were also selected after age and gender matching. Multivariate logistic regression analysis was used to estimate the suspected risk factors for PMD and oral cancers. Chi-square test, Adjusted odd's ratios with 95% confidence interval were also used for the statistical analysis.

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ORIGINAL ARTICLE

Prevalence of Oral Mucosal Lesions in Patients with Dermatological Diseases Attending Tertiary Care Hospital in Central India

K. M. Shivakumar[1], Vidya Kadashetti[2], Minal Chaudhary[3], Swati Patil[3], Madhuri Gawande[3], Alka Hande[3]*

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Abstract:

Background: The oral cavity is a unique environment where systemic maladies may be amplified by the oral mucosa. Sometimes, oral lesions are the first indication of a systemic problem. Oral mucosal lesions may be the initial feature or the only clinical sign of mucocutaneous diseases commonly observed in a dermatologic practice. *Aim and Objectives:* To assess the frequency of the oral manifestations in patients who suffer from dermatologic diseases, emphasizing the aspects referring to their, sex and age of the patients. *Material and Methods*: A cross sectional hospital-based study was carried out focusing on patients with skin lesions, for data gathering only patients included in the research were clinically examined aiming at identifying oral and cuteneous alterations. Information was recorded in individual clinical cards, as well as personal information, health conditions, family diseases and current and previous diseases. The structured interview was done in the local language containing questions regarding socio-demographics (gender, age, education and occupation) general and oral health related characteristics and lifestyle. *Results:* In our study, the prevalence rate of oral mucosal lesions in patients with dermatological diseases is relatively low (94/489). Our study results showed that there is a positive correlation of oral manifestations with their respective dermatological diseases *Conclusion:* Oral mucosal lesions in skin diseases deserve special attention, Documenting the frequency of oral mucosal lesions in dermatological diseases may alert the dental surgeons and gives scope for early diagnosis and progress for such diseases and a multidisciplinary approach

Keywords: Dermatological diseases, skin, oral Manifestations, Mucocutaneous Lesions

Introduction:

The oral cavity is a unique environment where systemic maladies may be amplified by the oral mucosa. Sometimes, oral lesions are the first indication of a systemic problem. Oral Mucosal Lesions (OML) may be the initial feature or the only clinical sign of mucocutaneous diseases, a group of mainly chronic diseases, commonly observed in a dermatologic practice. Dermatologic diseases are represented not only by numerous primary diseases that affect the skin but also by the common cuteneous manifestations of more profunds diseases, either visceral or systemic, that may involve the mucosa of the body, including the oral mucosa. Currently, dermatoses constitute an area of great scientific and odontological interest, considering that oral lesions can precede cuteneous marks for long periods of time, being, sometimes, the only signs of the disease. In this context, the

J Clin Diagn Res. 2017 Mar;11(3):LC16-LC19. doi: 10.7860/JCDR/2017/23340.9534. Epub 2017 Mar 1.

Correlation of Cotinine Levels with Use of Smokeless Tobacco (Mishri) among Pregnant Women and Anthropometry of Newborn

Praveen Ganganahalli [1], Asha Pratinidhi [2], Jyotsna Patil [3], Satish V Kakade [4]

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2 Director of Research, Krishna Institute of Medical Sciences, Deemed University, Karad, Maharashtra, India.

3 Associate Professor, Department of Biochemistry, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.

4 Statistician Cum Associate Professor, Department of Community Medicine, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.

PMID: 28511416 PMCID: PMC5427342 DOI: 10.7860/JCDR/2017/23340.9534

Free PMC article

Abstract

Introduction: 'Smokeless tobacco' is the term used for the tobacco that is consumed in un-burnt form and it can be used orally or nasally. Cotinine, a nicotine metabolite, is used to quantify exposure to tobacco, which readily gains access to foetal circulation. Cotinine is invariably found in coelomic, amniotic and foetal serum when maternal serum cotinine levels exceed 25ng/ml.

Aim: To estimate cotinine levels among pregnant women using and not using smokeless tobacco (mishri) and to correlate cotinine level with anthropometry of newborns.

Materials and methods: A hospital based cohort study was conducted at Krishna Hospital, Karad, District Satara, Maharashtra, India. Pregnant women who were using smokeless tobacco (mishri) during pregnancy were analyzed for cotinine levels in blood by using ELISA kit tech and correlated with anthropometry of newborn babies and compared with non users of tobacco.

Results: About 480 gm reduction in Birth weight and 6.5 cm reduction in birth length of babies born to mishri users compared to non users of tobacco and also cotinine levels among users were found significantly negatively correlating with anthropometric measurement of newborn babies.

Int J Appl Basic Med Res. Jan-Mar 2017;7(1):26-31. doi: 10.4103/2229-516X.198516.

Effect of dipeptidyl peptidase 4 inhibitors on acute and subacute models of inflammation in male Wistar rats: An experimental study

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PMID: 28251104 PMCID: PMC5327602 DOI: 10.4103/2229-516X.198516

Free PMC article

Abstract

Introduction: The prevalence of Type 2 diabetes mellitus (T2DM) has reached alarming proportions due to the rapidly increasing rates of this disease worldwide. Preclinical and clinical studies have revealed elevated levels of inflammatory markers in a vast number of illnesses such as T2DM, obesity, and atherothrombosis collectively called metabolic syndrome leading to adverse cardiovascular events. Dipeptidyl peptidase 4 (DPP-4) inhibitors which are the enhancers of glucagon-like peptide 1 (GLP -1), could have anti-inflammatory potential which could help in reducing cardiovascular complications of diabetes and benefit patients suffering from the metabolic syndrome.

Objective: The objective of this study was to analyze the effect of DPP-4 inhibitors, namely vildagliptin and saxagliptin on acute and subacute models of inflammation.

Materials and methods: Male Wistar rats were randomly divided into control, standard, and two treatment groups (6 animals in each group, total 24 animals). The animals received the drugs orally. The effects of vildagliptin and saxagliptin on inflammation were tested in acute (carrageenan-induced paw edema method) and subacute (grass pith and cotton pellet implantation method) models of inflammation.

J Clin Diagn Res. 2017 Jul;11(7):TC01-TC05. doi: 10.7860/JCDR/2017/26030.10182. Epub 2017 Jul 1.

Pelvic Mass Lesions in Females: Tissue Characterization Capability of MRI

Pramod Ramchand Shaha [1], Rahul Khetawat [2], Kulamani Sahoo [3], Ashish Garg [4], Mohd Abbas Ilyas [2], Gaurav Khairnar [2], Sahil Garg [5], Shree Hari Budgemwar [2]

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5 Resident, Department of Radiology, MMU, Maulana, Haryana, India.

PMID: 28892996 PMCID: PMC5583912 DOI: 10.7860/JCDR/2017/26030.10182
Free PMC article

Abstract

Introduction: Magnetic Resonance Imaging (MRI) of adult female pelvis is a well-established tool in the evaluation of utero-ovarian lesions and is often used to supplement ultrasonography. The need for diagnostic surgical intervention has largely been eclipsed with the advent of MRI, which has become the imaging modality of choice for characterization of pelvic masses.

Aim: To assess the role of MRI in female pelvic mass lesions and to exploit the tissue characterization capability of MRI.

Materials and methods: A prospective observational study was done on all patients referred to Department of Radiodiagnosis, Krishna Hospital, Karad, for MRI pelvis with clinically suspected uterine and adnexal masses or with indeterminate diagnosis on ultrasonography. Study was conducted between September 2014 to August 2016 with a sample size of 100 patients. All patients were scanned using 1.5 Tesla Seimens Avanto (Tim+Dot) scanner with Body matrix coil Tim. Histopathology was taken as gold standard. Results on continuous measurements were presented on Mean±SD (Min-Max) and results on categorical measurements were presented in Number (%).

J Forensic Dent Sci. Jan-Apr 2017;9(1):47. doi: 10.4103/jfo.jfds_24_16.

Can dead man tooth do tell tales? Tooth prints in forensic identification

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4 Department of Periodontology, Kalinga Institute of Dental Sciences, KIMS Campus, Bhubaneshwar, Odisha, India.
5 Department of Periodontology, School of Dental Sciences, KIMSDU, Karad, Maharashtra, India.
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PMID: 28584483 PMCID: PMC5450491 DOI: 10.4103/jfo.jfds_24_16
Free PMC article

Abstract

Background: We know that teeth trouble us a lot when we are alive, but they last longer for thousands of years even after we are dead. Teeth being the strongest and resistant structure are the most significant tool in forensic investigations. Patterns of enamel rod end on the tooth surface are known as tooth prints.

Aim: This study is aimed to know whether these tooth prints can become a forensic tool in personal identification such as finger prints. A study has been targeted toward the same.

Settings and design: In the present *in-vivo* study, acetate peel technique has been used to obtain the replica of enamel rod end patterns.

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Turk J Anaesthesiol Reanim. 2017 Apr;45(2):98-102. doi: 10.5152/TJAR.2017.70298. Epub 2017 Apr 1.

A Prospective Randomised Clinical Trial for the Comparison of Two Techniques for the Insertion of Proseal Laryngeal Mask Airway in Adults-Index Finger Insertion Technique versus 90° Rotation Technique

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PMID: 28439442 PMCID: PMC5396907 DOI: 10.5152/TJAR.2017.70298

Free PMC article

Abstract

Objective: The 90° rotation technique for inserting the Proseal laryngeal mask airway (PLMA) is reported to be better than the standard index finger insertion technique to improve the insertion success rate. The objective of this study was to evaluate and compare the ease of insertion through the 90° rotation and standard insertion techniques in terms of number of attempts, duration of insertion and occurrence of complications.

Methods: One hundred and twenty adult patients were allocated to either a standard technique group or rotation technique group with 60 patients in each. In the rotation technique group, the entire cuff of the PLMA was placed in the patient's mouth in a midline approach without finger insertion, rotated 90° counter-clockwise around the patient's tongue, advanced and rotated back until resistance was felt.

Results: The success rate of the rotation technique group at the first insertion attempt was greater than that of the standard index finger insertion technique (98% vs. 78%; p=0.001), and less time for insertion was required (11.88±3.62 s vs. 25.98±10.92 s; p<0.0001). The incidence of post-operative

91

Indian J Med Res. 2017 Mar;145(3):347-352. doi: 10.4103/ijmr.IJMR_36_14

Action-oriented colour-coded foot length calliper for primary healthcare workers as a proxy for birth weight & gestational period

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6 Nursing Student, Krishna Institute of Medical Sciences University, Karad, India.

PMID: 28749397 PMCID: PMC5555063 DOI: 10.4103/ijmr.IJMR_36_14

Free PMC article

Abstract

Background & objectives: Foot length of the newborn has a good correlation with the birth weight and is recommended to be used as a proxy measure. There can be variations in the measurement of foot length. A study was, therefore, carried out to develop a foot length calliper for accurate foot length measurement and to find cut-off values for birth weight and gestational age groups to be used by primary healthcare workers.

Methods: This study was undertaken on 645 apparently healthy newborn infants with known gestational age. Nude birth weight was taken within 24 h of birth on a standard electronic weighing machine. A foot length calliper was developed. Correlation between foot length and birth weight as well as gestational age was calculated. Correctness of cut-off values was tested using another set of 133 observations on the apparently healthy newborns. Action-oriented colour coding was done to make it easy for primary healthcare workers to use it.

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Randomized Controlled Trial Ann Afr Med. Jan-Mar 2017;16(1):6-12.
doi: 10.4103/aam.aam_43_16.

"Nature cures:" An alternative herbal formulation as a denture cleanser

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PMID: 28300045 PMCID: PMC5452698 DOI: 10.4103/aam.aam_43_16
Free PMC article

Abstract in English, French

Background: Candida albicans is one of the microorganisms which harbor the oral cavity, especially in elderly. However, the incidence of existence of this increases in patients using removable dental prosthesis. There is therefore a need to test the anticandidal efficacy of these cost-effective, easily available products to be used as routine denture cleansers.

Aim and objectives: (1) To evaluate antifungal properties of triphala churna on the heat cure denture base material. (2) To evaluate the antifungal effect of chlorhexidine gluconate on the heat cure denture base material. (3) To compare the antifungal effect of triphala churna and chlorhexidine gluconate with a control. (4) To evaluate which among triphala churna and chlorhexidine gluconate has a better antifungal property on the heat cure denture base material.

Materials and methods: Study population consisted of sixty dentures wearers from those attending the Outpatient Department of Prosthodontics of the School of Dentistry, Krishna Institute of Medical Sciences Deemed University, Karad. Swabs were collected from the dentures before and after the use of triphala and chlorhexidine. The swabs were cultured on Sabouraud dextrose agar and the total Candida counts were determined.

Review Gen Dent. Nov-Dec 2017;65(6):e5-e8.

Traumatic bone cyst of an anterior mandible with previous symphyseal fracture in a pediatric patient: a rare finding and etiopathologic correlation

Kumar Nilesh, Aaditee V Vande, Shivsagar Tewary, K V Suresh

PMID: 29099374

Abstract

Traumatic bone cysts (TBCs) are uncommon intraosseous lesions, classified as pseudocysts because they lack an epithelial membrane lining. The etiology of a pseudocyst has not been determined. Various hypotheses have been put forward to explain its pathogenesis, of which the traumatic-hemorrhagic theory is the most commonly accepted. Minor trauma, insufficient to cause fracture or iatrogenic injury, is commonly implicated as the stimulus initiating cyst formation. A TBC presenting after jaw fracture has been rarely reported in the literature. This article presents a case of a TBC of the anterior mandible in a child with a previous history of trauma and fracture of the symphysis. The article also reviews the literature to corroborate the possible role of major trauma in the pathogenesis of TBC.

Keywords: bone cavity; mandible; simple bone cyst; traumatic bone cyst.

Related information

MedGen

Case Reports J Oral Maxillofac Pathol. May-Aug 2017;21(2):273-276.
doi: 10.4103/jomfp.JOMFP_242_15.

Oral focal mucinosis of posterior maxilla

Kumar Nilesh [1], Huzaifa S Kothi [2], Rahul Patil [3], R C Pramod [4]

Affiliations

PMID: 28932039 PMCID: PMC5596680 DOI: 10.4103/jomfp.JOMFP_242_15
Free PMC article

Abstract

Oral focal mucinosis (OFM) is a rare connective tissue disorder characterized by myxoid degeneration of submucosal connective tissue. It usually presents as gingival or mucosal overgrowth. Due to its uncommon occurrence and lack of pathognomonic clinical or radiological features, diagnosis mainly relies on histopathological evaluation. The paper reports a rare case of large OFM in a 58-year-old female patient involving the posterior maxilla and hard palate. Diagnosis of the lesion was established based on histopathological and immunohistochemical analysis. The lesion was excised surgically and showed no recurrence at 1 year follow-up. The cases presented intend to bring OFM to the attention of oral pathologists and clinicians while considering the differential diagnosis of myxoid lesions of oral cavity.

Keywords: Connective tissue disorder; gingival growth; mucosal lesion; myxoid degeneration.

Figures

Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology
Volume 29, Issue 5, September 2017, Pages 458-462

Case Report

Bilaterally symmetrical infected radicular cysts: Case report and review of literature

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Received 18 April 2016, Revised 25 March 2017, Accepted 25 May 2017, Available online 5 June 2017.

https://doi.org/10.1016/j.ajoms.2017.05.008

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Case Reports J Dent Res Dent Clin Dent Prospects. Winter 2017;11(1):56-60.
doi: 10.15171/joddd.2017.011. Epub 2017 Mar 15.

Solitary peripheral ivory osteoma of the mandible presenting with difficulty in deglutition: a case report

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PMID: 28413598 PMCID: PMC5390128 DOI: 10.15171/joddd.2017.011
Free PMC article

Abstract

Osteomas are benign bone tumors which arise from the cortex or medulla of craniofacial and jaw bones. They are usually asymptomatic or present as slow-growing painless masses. Larger lesions may present with aesthetic (facial asymmetry) and functional disturbances (jaw deviation, difficulty in breathing, pain, and sensory deficits). This paper highlights a case of solitary peripheral osteoma composed of a compact bony mass arising from the lower border of the mandible in an adult female patient. The lesion presented with discomfort during deglutition, which was attributed to impingement of muscles of the oral cavity floor, including the anterior belly of digastric muscle.

Keywords: Jaw; osteogenic tumor; radiopaque lesion; swallowing.

Figures

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Case Reports J Dent Res Dent Clin Dent Prospects. Spring 2017;11(2):127-130.
doi: 10.15171/joddd.2017.023. Epub 2017 Jun 21.

Multiple talon cusps on maxillary central incisor: A case report

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3 Department of Periodontology, Yogita Dental College & Hospital, Khed (Ratnagiri), Maharashtra, India.
4 Department of Oral & Maxillofacial Surgery, School of Dental Sciences, Krishna Institute of Medical Sciences, Deemed University, Karad, Satara (District), Maharashtra (State), India.
5 Department of Oral Medicine and Radiology, Amrita School of Dentistry, Kochi, Kerala, India.

PMID: 28748055 PMCID: PMC5519994 DOI: 10.15171/joddd.2017.023
Free PMC article

Abstract

Dental anomalies affecting the teeth are relatively common. Simultaneous occurrence of multiple dental abnormalities in a single tooth is uncommon and relatively rare. One such abnormality routinely encountered in dental clinics is the talon cusp. It is also referred to as dens evaginatus, characterized by the presence of an accessory cusp-like structure projecting from the cingulum of anterior teeth. It has an increased predilection for maxillary teeth and permanent dentition. Although numerous cases of talon cusp have been reported in the literature, occurrence of multiple talon cusps in maxillary central incisors has not been found in the literature. This case report highlights the presence of talon cusps in maxillary anterior teeth with multiple impacted supernumerary teeth.

Keywords: Dens evaginatus; maxilla; multiple; supernumerary tooth; talon cusp.

Figures

Memorandum of Understanding
for
NARI-AIDS Rural Research in Maharashtra (Project: NARRIM)

This Memorandum of Understanding is drawn between the National AIDS Research Institute and Krishna Hospital on 18/5/12.....

Title of the Project:
NARI-AIDS Rural Research in Maharashtra (Project: NARRIM)

Genesis
Maharashtra is one of the earliest states to be affected by HIV/AIDS in India and one of the first to be considered as a high prevalence State. The State has a high influx of in-migration from other Indian states and 32 of its 35 districts are 'Category A' districts, connoting high prevalence of HIV and AIDS in the State. Further, while 72% of Indians dwell in rural areas, where the estimated HIV prevalence is only slightly lower than in urban areas and awareness on HIV and related issues is precariously low. Thus, the NARRIM project has been conceptualized to decentralize HIV prevention efforts in rural areas and expand research capacities in these areas.

Brief Description
The Research Project will establish a HIV research centre as an extension of NARI in rural Maharashtra in collaboration with local organizations and government bodies to address various aspects of HIV Prevention and Prevention research.

Aims and Objectives

- Build HIV research capacity of NARI through:
    - Establishment of Research Centres in the rural areas in collaboration with the State Government offices, NGOs, Medical colleges and State AIDS Control Society
- Study the socio-behavioral and cultural determinants of HIV infection
- Site, community, epidemiology and research preparedness for feasibility of conducting research related to New Biomedical Tools for Prevention of HIV (e.g. Preventive vaccine) in the near future when available.
- Study the transmission dynamics of HIV and immune-pathogenesis among AIDS patients in rural Maharashtra

Term:
This Statement of Work is effective as of 25/5/2012 and will terminate after the present work-scope.

Collaborating Institutes:

- National AIDS Research Institute (NARI), Pune, India
- International AIDS Vaccine Initiative (IAVI), USA
- Site Medical colleges and research institutions

Project Management and Implementation

Project Overseeing Group (POG)

- Director, NARI - (1)
- Country Director, IAVI - (1)
- DG's Nominee, ICMR - (1)
- DG's Nominee, National AIDS Control Organization (NACO) - (1)
- Representatives from Local Partner Research Institutes - (2)

Study Investigators

- Principal Investigator (PI), Dr Seema Sahay NARI;
- Co Investigator, Tapati Dutta IAVI;
- ---Name: PI Udgir site
- ---Name: PI Karad site

Responsibilities

ICMR

- Financial support of the project
- Appoint representatives in the Project Overseeing Group for advisory roles to the project

NARI

- Technical leadership of the Research Project
- Establishment of the NARI-Rural Research Centres
- Hiring and training of Staff at the Rural Research Centre
- Training of the Research Project Staff for successful implementation of activities for project deliverables
- To establish linkages with local ICTC, ART Centres, DAPCU and NGOs
- Community engagement

IAVI

- Financial support of the project
- Provide technical assistance in :

  - Community Mobilization
  - Interfacing with key local influencers and stakeholders
  - Preparation of Community engagement and Education plans
  - Interacting with General Population, mapping of Most at Risk Population Groups
  - Training of the Research Project Staff
  - Preparation of IEC materials for research literacy

Local medical colleges

- Provide space for the Research Centre at Udgir and Karad

- Recruitment of clinical, paramedical and sociobehavioral staff for the centre jointly with NARI
- Management of the Research Centre and its day to day activities (data collection, sample collection processing and transport to NARI and patient management)
- Provide guidance in procurement of accredited equipments
- Study key behavioral and biological indicators among high risk groups and the general population, with support from NARI and IAVI
- With support from NARI and IAVI develop
    - informed consent for HIV VCT
    - informed consent process for both literate and illiterate population
    - SOPs for key processes
- With support from NARI and IAVI come out with the
    - List of Most at risk and hard to reach population groups
    - Size estimation of these groups
    - Number of geographical pockets for high risk groups and hard to reach populations identified
    - Data and information related to Knowledge, attitude, behaviour and practice of general population in the context of HIV and STI collected.
    - HIV prevalence details among most at risk and general populations in and around Udgir and Karad drawn out
- With supervision from NARI and IAVI do data collection and management of the above studies
- With NARI and IAVI support, generate report and disseminate findings

Outcome/project deliverables

a. Establish the Project Overseeing Group
b. Build sustainable partnerships and collaborations with rural research Institutions, local NGOS and CBOs, existing ICTC and ART Centres and DAPCU.
c. Formation of local Ethics Committee and Community Advisory Boards
d. Development and Implementation of Community Education and Engagement Plans including IEC and BCC materials.
e. Establish a Rural Research Centre with linkages to NACO ART and ICTC centres, with capacity and capability for conducting HIV prevention research
f. Map most at risk population and develop database on knowledge in rural Maharashtra on attitude, behaviors and for HIV prevention and perceivable issues for research and introduction of New Biomedical Tools for HIV prevention and output of the research literacy conducted.

Indemnities ——Neither National AIDS Research Institute nor..... will be responsible for omission or commission by the staff associated with respective organizations

Budget and Payment Terms ——
National AIDS Research Institute, Pune, India

- Expenditure of NARRIM project will be coordinated by National AIDS Research Institute Pune, India.
- Purchase of equipment etc for the sites will be done by National AIDS Research Institute, Pune, India.
- Salaries of the staff will be paid from National AIDS Research Institute, Pune, India on 7th working day of each month
- Contingency advance of Rs. 10,000/- will be transferred to the site by NARI.
- Contingency bills will be reimbursed to the site against bills/ receipt/ vouchers by the last working day of each month

Sites [Name]

- Sites will submit Bills/receipts against contingency advance should reach National AIDS Research Institute, Pune by 25th date of each month for reimbursement of contingency.
- Salary bills and leave details of staff would be submitted by site .....[Name] to National AIDS Research Institute, Pune, India by 25th date of every month.

Any Other Terms

IN WITNESS WHEREOF, the Parties agree to the above stated Program for the Research Project.

National AIDS Research Institute

Name:
Title:
Date:

DIRECTOR
National AIDS Research Institute
PUNE - 411 026.

Krishna Institute of Medical Sciences

Name: Dr. A.Y. Kshirsagar
Title: NARI-AIDS Rural Research In Maharashtra
Date 18-OC-2012

Memorandum of Understanding
for
NARI-AIDS Rural Research in Maharashtra (Project: NARRIM)

This Memorandum of Understanding is drawn between the National AIDS Research Institute, a premier institute devoted to research on HIV infection and AIDS, with its office at G 73 MIDC, Bhosari, Pune, Maharatshtra. (ICMR-NARI) and Krishna Institute of Medical Sciences, deemed to be university, with its office at Karad (KIMSDU) on 19th November 2018.

Title of the Project:
NARI-AIDS Rural Research in Maharashtra (Project: NARRIM)

Genesis
Maharashtra is one of the earliest states to be affected by HIV/AIDS in India and one of the first to be considered as a high prevalence State. The State has a high influx of in-migration from other Indian states and 32 of its 35 districts are 'Category A' districts, connoting high prevalence of HIV and AIDS in the State. Further, while 72% of Indians dwell in rural areas, where the estimated HIV prevalence is only slightly lower than in urban areas and awareness on HIV and related issues is precariously low. Thus, the NARRIM project has been conceptualized to decentralize HIV prevention efforts in rural areas and expand research capacities in these areas.

Brief Description
The Research Project will establish a HIV research centre as an extension of ICMR-NARI in rural Maharashtra in collaboration with local organizations and government bodies to address various aspects of HIV Prevention and Prevention research.

Aims and Objectives

- Build HIV research capacity of ICMR-NARI through:
  - Establishment of Research Centres in the rural areas in collaboration with the State Government offices, NGOs, Medical colleges and State AIDS Control Society
- Study the socio-behavioral and cultural determinants of HIV infection
- Site, community, epidemiology and research preparedness for feasibility of conducting research related to New Biomedical Tools for Prevention of HIV (e.g. Preventive vaccine) in the near future when available.
- Study the transmission dynamics of HIV and immune-pathogenesis among AIDS patients in rural Maharashtra

Term:
This Statement of Work is effective for 5 years and will terminate after the present work-scope.
Total Duration: from 19th November 2018 to 18th November 2023

Collaborating Institutes:

- National AIDS Research Institute (ICMR-NARI), Pune, India
- International AIDS Vaccine Initiative (IAVI), USA

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

DIRECTOR
National AIDS Research Institute
PUNE - 411 026.

- Site Medical colleges and research institutions

Project Management and Implementation

Project Overseeing Group (POG)
- Director, ICMR-NARI - (1)
- Country Director, IAVI - (1)
- DG's Nominee, ICMR - (1)
- DG's Nominee, National AIDS Control Organization (NACO) - (1)
- Representatives from Local Partner Research Institutes - (2)

Study Investigators
- Principal Investigator (PI), Dr Seema Sanjay ICMR-NARI;
- Co Investigator, Shweta Charath, IAVI;
- Site Principal Investigator (Site PI) Karad site: Dr. Asha Jadhav

Responsibilities

ICMR
- Financial support of the project
- Appoint representatives in the Project Overseeing Group for advisory roles to the project

ICMR-NARI
- Technical leadership of the Research Project
- Establishment of the ICMR-NARI-Rural Research Centres
- Hiring and training of Staff at the Rural Research Centre
- Training of the Research Project Staff for successful implementation of activities for project deliverables
- To establish linkages with local ICTC, ART Centres, DAPCU and NGOs
- Community engagement

IAVI
- Financial support of the project
- Provide technical assistance in :
  - Community Mobilization
  - Interfacing with key local influencers and stakeholders
  - Preparation of Community engagement and Education plans
  - Interacting with General Population, mapping of Most at Risk Population Groups
  - Training of the Research Project Staff
  - Preparation of IEC materials for research literacy

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NATIONAL AIDS RESEARCH INSTITUTE * I.C.M.R. * PUNE - 411 026.

Local medical colleges

- Provide space for the Research Centre/Clinic at KIMSDU, Karad
- Recruitment of clinical, paramedical and socio-behavioral staff for the centre jointly with ICMR-NARI
- Management of the Research Centre and its day to day activities (data collection, sample collection processing and transport to ICMR-NARI and patient management)
- Provide guidance in procurement of accredited equipments
- Study key behavioral and biological indicators among high risk groups and the general population, with support from ICMR-NARI and IAVI
- With support from ICMR-NARI and IAVI develop
    - informed consent for HIV VCT
    - informed consent process for both literate and illiterate population
    - SOPs for key processes
- With support from ICMR-NARI and IAVI come out with the
    - List of Most at risk and hard to reach population groups
    - Size estimation of these groups
    - Number of geographical pockets for high risk groups and hard to reach populations identified
    - Data and information related to Knowledge, attitude, behaviour and practice of general population in the context of HIV and STI collected.
    - HIV prevalence details among most at risk and general populations in and around Udgir drawn out
- With supervision from ICMR-NARI and IAVI do data collection and management of the above studies
- With ICMR-NARI and IAVI support, generate report and disseminate findings

Outcome/project deliverables

a. Establish the Project Overseeing Group
b. Build sustainable partnerships and collaborations with rural research institutions, local NGOS and CBOs, existing ICTC and ART Centres and DAPCU.
c. Formation of local Ethics Committee and Community Advisory Boards
d. Development and Implementation of Community Education and Engagement Plans including IEC and BCC materials.
e. Establish a Rural Research Centre with linkages to NACO ART and ICTC centres, with capacity and capability for conducting HIV prevention research.
f. Map most at risk population and develop database on knowledge in rural Maharashtra on attitude, behaviors and for HIV prevention and perceivable issues for research and introduction of New Biomedical Tools for HIV prevention and output of the research literacy conducted.

Indemnities: Neither ICMR-NARI nor KIMSDU will be responsible for omission or commission by the staff associated with respective organizations

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National AIDS Research Institute
PUNE - 411 026.

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Budget and Payment Terms:

National AIDS Research Institute, Pune, India

- Expenditure of NARRIM project will be coordinated by National AIDS Research Institute, Pune, India.
- Purchase of equipment etc for the sites will be done by National AIDS Research Institute, Pune, India.
- Salaries of the staff will be paid from National AIDS Research Institute, Pune, India on 7th working day of each month
- Contingency advance of Rs. 15,000/- will be transferred to the site by ICMR-NARI.
- Contingency bills will be reimbursed to the site against bills/ receipt/ vouchers by the last working day of each month

Krishna Institute Of Medical Sciences 'Deemed To Be University' Karad (KIMSDU)

Krishna Institute of Medical Sciences, (KIMSDU)

- KIMSDU will submit Bills/receipts against contingency advance should reach National AIDS Research Institute, Pune by 25th date of each month for reimbursement of contingency.
- Salary bills and leave details of staff would be submitted by site KIMSDU to ICMR-NARI, Pune, by 25th date of every month.

Any Other Terms

IN WITNESS WHEREOF, the Parties agree to the above stated Program for the Research Project.

For: ICMR – ICMR-NARI

Name: Dr. Samiran Panda
Title: The Director
Date: 27/12/2018

डॉ. समीरन पांडा
Dr. SAMIRAN PANDA
निदेशक / Director
राष्ट्रीय एड्स अनुसंधान संस्थान
National AIDS Research Institute
पुणे-411 026. / Pune-411 026.

For: KIMSDU

Name: Dr. M. V. Ghorpade,
Title: The Registrar,
Date

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

NATIONAL AIDS RESEARCH INSTITUTE ★ I.C.M.R. ★ PUNE - 411 026.

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

HIV/AIDS/ADHOC

"Promoting HIV vaccine Research and Development through tech-transfer and capacity building for HIV immune pathogenesis studies (PHV-NARRIM)": Phase-II Study" under Dr.Seema Sahay, Scientist F,

BUDGET STATEMENT
25.03.2017 TO 24.03.2018
(2016-17)

Sl.No.	Item	1st Year
I.	Staff	Amt. in Rs.
1.	Research Assistant@ Rs.32350/- p.m.x12x2	776400
2.	Staff Nurse @ Rs.32890/- p.m.x12x1	394680
3.	Lab. Technician @ Rs.18800/- p.m.x12x1	225600
4.	Field Worker @ Rs.18800/- p.m.x12x1	225600
5.	MTS @ Rs.16500/- x12x1	198000
II.	Consumables	
1.	Vaccutainers, needles etc. blood drawing cost	553400
2.	Clinic consumables – gloves	126620
3.	Laboratory consumables	163500
	Total	2663800

No. ECD/Adhoc/78/2016-17
Dated: 20.3.2017
No.HIV/51/297/2015/ECD-II

A-O for na
cc to Dr.

18/9/18

INDIAN COUNCIL OF MEDICAL RESEARCH
V. Ramalingaswami Bhawan, Ansari Nagar, New Delhi – 110 029
Phone : 26588980, 26588707, 26589336, 26589745, 26589873,
FAX: 011-26588662, 26589791, GRAM : SCIENTIFIC, Web-site:
www.icmr.nic.in, e-mail: icmrhqds@sansad.nic.in

No.HIV/51/297/2015/ECD-II

Dated 13/9/18

To

Dr.Seema Sahay,
Scientist F, National AIDS Research Institute,
G Block, Plot No.73, MIDC,
Bhosari, Pune-411026.

Subject: Sanction of additional grant for the ICMR adhoc Scheme entitled, "Promoting HIV vaccine Research and Development through tech-transfer and capacity building for HIV immune pathogenesis studies (PHV-NARRIM)": Phase-II Study"

Sir,

Please refer to your letter No:NARI/SS/2018-19/1571 dated 23.070.2018 seeking the above mentioned subject.

I am directed to convey herewith sanction of Director General, ICMR for payment of an additional amount of Rs.11,31,300/- (Rupees Eleven Lakh Thirty One Thousand and Three Hundred only) on account of salary of 3 staff working on the above project for the period w.e.f. 1.7.2018 to 31.3.3.2019 as detailed below:-

Post/activities	Persons/Duration	Salary/month	Total
Research Scientist II	Dr.Mandar K.Muralar	Rs.57600/-x9	518400
Research Scientist I	Dr.Sundar Singh Dange	50400x9	450900
DEO	Mr.Nyatan Wankar	18000x9	162000
		Total	**1131300**

Yours faithfully,

(Arti Chawla)
Admn. Officer
For Director General

Copy for information to: 1. The Director, National AIDS Research Institute, G Block, Plot No.73, MIDC, Bhosari, Pune-411026.
2. Accounts Section-V, ICMR along with a formal bill for release of additional grant of Rs.11,31,300/- to Director, NARI, Pune.
3. IRIS Cell, ICMR
4. Mrs.Vandana, Sr.Tech.Officer-II

for Director General

PHV Budget

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NARRIM RURAL RESEARCH CENTER

NARI's Rural Research Initiative in Maharashtra

Project NARRIM was a collaborative project funded by ICMR-NARI, PUNE (ICMR, New Delhi) IAVI, New Delhi and KIMSDU, Karad. This was launched on 01 Dec 2012 by the hands of Director Dr. Paranjape Sir, NARI Pune. It was aimed to establish NARRIM RURAL Research Center of Excellence, Clinic and collaborate with local stakeholders viz. District hospital, MSACS, DAPCU and local health care providers for capacity building and community mobilization towards HIV awareness and prevention research along with other broad areas like non communicable diseases.

Activities performed:

- Establishments of NARRIM Clinic(Facility health checkup, blood testing & counseling)
- Establishments of Community Advisory Board (CAB) at KIMSDU.
- Satara District awareness program & continual activity.
- World AIDS Day & HIV vaccine awareness days- every year
- State of art research laboratory in Microbiology department.

Research Project: (Completed) NARRIM Project = 36, 47, 181 INR Dec 2012 -JAN 2015

No.	Project Name	Year
1	Situational Analysis of Satara District	2013-2014
2	High Risk Group Mapping of Satara District (HRG Mapping)	2014-2015
3	SUPERB study : Prevention & Explore barriers for women (HIV)	2014-2015
4	A Study of Contraceptive Utilization Practices among Married Couple from Rural Area of Satara District: A community based observational study.	2015
5	Identification of clusters for initiation of comminute based open COHORT study.(Rapid assessment and mapping of high risk group and vulnerable population in Satara district)	2015
6	Community Awareness Program For De –Addiction From Tobacco And Tobacco Related Product.	2015
7	Prevalence & Identification of Etiopathogenesis of STI) Infections in women from Karad & Patan	2015

Research Project (Ongoing & forthcoming project)

No.	Project Name	Budget in INR	Duration
1	Promoting HIV Vaccine Research and development through tech-transfer and capacity building for HIV immune-pathogenesis studies – (PHV Project)	1,43,07,647 INR	2016- 2019
2	Cohorts for HIV Resistance and Progression in Indian Children and Adults(CoHRPICA)	104286986 INR	2018-2023
3.	Implementation and Evaluation of Community Based Intervention for Upliftment and Voluntary Participation in Biomedical Research Studies	71,35,250 INR	2019 -2020

Other Ongoing Project:

No.	Project Name
1	Teaching & training of Health Care for adolescents in colleges, ICDS officials, ASHA, ANM's, HCPs
2	Stakeholders and clients involvements various local health needs.
3	Non communicable Diseases Prevention & diagnostic program(Refferal to KIMSDU)

1. Promoting HIV Vaccine Research and development through tech-transfer and capacity building for HIV immune-pathogenesis studies – A NARI-IAVI collaborative project.(Funded by ICMR & IAVI)

   Aim & Objectives:

   To accelerate HIV vaccine research and development activities and build in country HIV research leadership through India and east Africa research linkages, including capacity building for developing recent HIV infection and HIV infected Cohorts culminating into development of studies related socio-behavioral determinants of HIV/AIDS disease transmission, progression, immune pathogenesis and vaccine design work.

2. NATIONAL HIV COHORT PROGRAM : Cohorts for HIV Resistance and Progression in Indian Children and Adults (CoHRPICA) : Funded by DBT, Govt of India, ICMR, IAVI

CoHRPICA will be an open-ended, multi-center, prospective cohort study enrolling HIV uninfected, at high risk, adults (including Exposed-seronegative, and HIV-infected individuals (including Early HIV-infection, HIV-infected adults – with and without comorbidities, and HIV infected children) at the clinical Centers of Excellence across India.

2. Study Objectives

The specific objectives of the study include:

A. Establish well-characterized cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative) and HIV-infected individuals (including Early HIV-infection, HIV-infected adults – with and without comorbidities, and HIV-infected children);

B. Establish a state-of-the-art biorepository of biological specimens collected from the above cohorts and other prospective and retrospective studies in India;

C. Develop a national HIV/AIDS database (with clinical-laboratory-socio-demographic-and research data) to enable a singular digital platform for epidemiological analyses, generation of new research questions and conduct of advanced immuno-biological analyses.

Qualitative study:

Title:

Implementation and Evaluation of Community Based Intervention for Upliftment and Voluntary Participation in Biomedical Research Studies.

Purpose of the Study:

The current study aims at exploring ways to bring more high-risk population into the prevention and treatment space and increasing research preparedness through community messaging and literacy tools about HIV, Sexual and Reproductive Health and Biomedical Research. Qualitative and quantitative baseline and endline surveys will be conducted to assess the impact of the interventions.

Objectives:

- To assess awareness and enhance perception of risks posed by HIV and STIs to sexual & reproductive health;
- To understand the facilitators and barriers for adoption and uptake of protective interventions against HIV & STIs and strengthen uptake;
- To identify hidden populations who are at risk of HIV and STIs and do a comparative analysis of the factors responsible;
- To augment collectivization efforts and capacities for self-addressal of community concerns;
- To advance research literacy in communities and encourage informed and voluntary participation in clinical and biomedical research (BMR) studies (including the National HIV Cohort Study).

Methodology:

Study Duration: 1 year.

Study Partners: Krishna Institute of Medical Sciences Deemed University (KIMSDU); National AIDS Research Institute (NARI).

Study Sites: Karad and Patan in Satara district and Sangli, Maharashtra.

Study Populations: (a) General population who visit/visited the KIMSDU/NARI organized health camps (b) High risk populations like MSM, FSW, PWID, TGW, Adolescents, Truckers, Migrants.

Study Design: The study will be conducted using a mixed methods study design.

- Phase I: A qualitative semi-structured face-to-face interviews and focus group discussions which will enable in-depth understanding of the community perspectives and participatory research action-based tools will be developed;
- Phase II: A quantitative questionnaire survey to provide an overall statistical picture of the impact of the interventions.

After phase I, the community engagement tools and materials will be developed and rolled out into the community. Following this, phase II will be conducted.

PHV PROJECT SUMMARY

Title: Promoting HIV Vaccine Research and development through tech-transfer and capacity building for HIV Immune-pathogenesis studies – A NARI-IAVI collaborative project.

Aim & Objectives:

To accelerate HIV vaccine research and development activities and build in country HIV research leadership through India and east Africa research linkages, including capacity building for developing recent HIV infection and HIV infected Cohorts culminating into development of studies related socio-behavioral determinants of HIV/AIDS disease transmission, progression, immune pathogenesis and vaccine design work.

Infrastructures & Facility:

- NARRIM Clinic, Research staffs (7)
- State of Art laboratory in collaboration with Microbiology Department
- N-ARRIM clinic providing facilities → HIV testing, counseling, Referral services for treatment.

PHASE – I

- ✓ Situational Analysis of entire Satara District.(For basic demography & health disease burden)
- ✓ Awareness campaign for HIV through entire District in rural & urban area - 03 June-18 June 2013.
- ✓ High Risk Group mapping exercise in Rural area of Satara (In depth interview of key informants)
- ✓ Engagement of Local Stakeholders-PHC, DHC,DAPCU,ART Centers, Research Institute.
- ✓ SUPERB Study. (KAP study for microbicide etc.) In Depth interviews
- ✓ State of Art laboratory in collaboration with Microbiology Department.
- ✓ Organization of World AIDS day, HIV Vaccine awareness Day program.
- ✓ Dissemination of facility provision of NARRIM project District authority.
- ✓ Socio-behavioral studies for baseline data of rural Satara, (Contraceptive utilization and STI prevalence study)

PHASE-II

- ✓ GCP and GPP Training workshop, MSM Sensitivity Training, Vaxlit Training, Skill building on Qualitative research & Organization of World AIDS day , HIV Vaccine awareness Day program.
- ✓ Identification of clusters for initiation of comminute based open COHORT study.(Rapid assessment and mapping of high risk group and vulnerable population in Satara district)
- ✓ Community Sensitization Program and Networking & linkages with NGO, PHC, SDH, ART center
- ✓ Regulatory approvals, Tool Development, SOP Training, Data management, Preparatory work.
- ✓ Organization of Health Checkup in selected 65 clusters. Follow up for 2 years after each 6 months.

Upcoming activities:

1. Exploring Hard to Reach MSM network structure & dynamic in India.
2. HIV VCT and PPTCT program study in rural setting
3. Exposed but Sero-Negative to HIV Cohort study.
4. Development of curriculum for Research personal

INDIAN COUNCIL OF MEDICAL RESEARCH
V. Ramalingaswami Bhawan, Ansari Nagar, Post Box No. 4911
New Delhi - 110029

APPLICATION FOR GRANT-IN-AID OF AD-HOC RESEARCH PROJECT

(Not to be used for Projects)

SECTION A

GENERAL

1. Title of the Research Project: Promoting HIV Vaccine research and development through tech-transfer and capacity building for HIV immune-pathogenesis studies - A NARI IAVI collaborative project.

2. Name and Designation of

Study Chair: Dr. R. R. Gangakhedkar
Investigators:
i) Principal Investigator & Email : Dr. Seema Sahay: ssahay@nariindia.org
Co-Investigator(s) & Email:
NARI
ii)Dr. Madhuri Thakar: mthakar@nariindia.org
iii) Dr. Sachin Kamble: skamble@nariindia.org
iv) Dr. Vijay Nema: vnema@nariindia.org
V)Dr. S. Dhayarkar: sdhayarkar@nariindia.org
NARI-Karad
Dr. Asha Jadhav, Dr.G. S. Karande, Dr.S. T. Mohite, Dr S R Patil
IAVI
i) I. Dutta: idutta@iavi.org

3. Duration of Research Project : 3 years

i) Period which may be needed for collecting the data — 2.5
ii) Period that may be required for analyzing the data — 0.5

4. Amount of grant-in-aid asked for (details are to be furnished in Section B)

Budget head	1st Year	2nd Year	3rd Year	Cost	Justification
Staff (Total)	3,891,668	3,400,835	3,930,918	18,233,421	Total salary for 9 posts (6 by ICMR & 3 by IAVI)
Contingency	200,000			200,000	Incidental expenditure, miscellaneous expenses like telephone, fax and other emergency needs, patients incentive
Recurring	685,000	710,000	732,000	2,127,000	
Non-recurring	85,000			85,000	
Travel	200,800	200,800	200,800	602,400	Expenses on travel for monitoring and supervision, meetings & field work
Total	4,362,468	4,311,635	4,673,718	13,247,821	
Institutional charges @ 8% of total	340,997	337,931	365,908	1,039,826	
Grand Total	4,663,465	4,650,566	5,047,616	14,287,647	

4.Amount of grant-in-aid asked for (details are to be furnished in Section B)

Budge head	1st Year	2nd Year	3rd Year	Cost	Justification
Staff (Total)	2439840	2683824	2952204	8075868	Total salary for 8 posts
Contingency	125000	75000	50000	250000	Incidental expenditure, miscellaneous expenses like telephone, fax and other emergency needs, patients incentive
Recurring	548080	582830	619480	1750390	Field work, consumables
Non-recurring	35000	-	-	35000	Devices
Travel	202000	202000	202000	606000	Expenses on travel for monitoring and supervision, meetings & field work
Institutional charges @ 8% of total	267994	283492	305895	857381	
Grand Total	3617914	3827146	4129579	11574639	(IAVI will separately support the capacity building activities: is Cost: Rs765000/- (not included in grand total)

5.Institution responsible for the research project :

Name	National AIDS Research Institute
Postal address	73G, MIDC, Bhosari, Pune 411026
Telephone	020-27331200
e-mail	020-27121071
Fax No.	

6.Institutional ethical clearance and Project approval (Necessary documents indicating institutional ethical clearance must be enclosed for research involving human subjects as also animal experiments).
Yes ✓

7.Is radio tagged material proposed to be used in the project either for clinical trials or experimental purposes? If so, clearance from Nuclear Medicine Committee, Bhabha Atomic Research Centre, Mumbai, indicating should be attached.
NA

8.Projects involving recombinant DNA/Genetic engineering work should be examined and certificate by the Institutional Biosafety Committee (IBSC) to be enclosed. Guidelines for constitution of IBSC can be obtained from Secretary, Department of Biotechnology, CGO Complex, Lodhi Road, New Delhi-110003.
NA

9.Approval of the Institutional ethics Committee (IEC) should be enclosed. Guidelines for IEC for animal experiments should follow CPCSEA requirements and for human studies should follow ICMR

BUDGET 2017-2018

INTEGRETED COUNSELING AND TESTING CENTER (ICTC)

MAHARASHTRA STATE AIDS CONTROL SOCIETY (MSACS)

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD.

(Declared U/s 3 of UGC Act, 1956 vide Notification No. F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India.)

Karad, Dist. Satara (Maharashtra State) Pin: 415 110 **Tel: 02164-241555-58 Fax: 02164 243272/242170**

Website: www.kimsuniversity.in E-mail: contact@kimsuniversity.in

Dr. Asha J. Jadhav
Program Director,
PPTCT-ICTC KIMSDU,
Karad.

This is to certify that following is the financial support for ICTC program at KIMSDU, Karad under PPTCT Program by Maharashtra State AIDS Control Society (MSACS) Mumbai that is through District AIDS Prevention Control Unit (DAPCU) Satara for the year 2017-2018

Sr. No	Post	Year	Monthly Salary	Yearly Salary	Total Expenses
1	Counselor	2017-2018	16275	195300	195300
2	Lab Technician	2017-2018	13650	163800	163800
3	Kit Use Rs. 205.75*7397	2017-2018	-	-	1521932.75
	Total	2017-2018	29925	359100	1881032.75

Program Director,
PPTCT-ICTC KIMSDU,
Karad.

STAFF ORDER 2017-2018

INTEGRETED COUNSELING AND TESTING CENTER (ICTC)

MAHARASHTRA STATE AIDS CONTROL SOCIETY (MSACS)

महाराष्ट्र राज्य एड्स नियंत्रण संस्था
(महाराष्ट्र शासन)
आर. ए. किडवाई मार्ग, ॲलवर्थ लेप्रसी कॉम्प्लेक्स, वडाळा (प.), मुंबई - ४०००३१

मराएनिसं/प्रशासन/आयसीटीसी/पुर्न:नियुक्ती/ २०१७-१८/ १७७०
दिनांक: ०१ एप्रिल, २०१७.

पुर्न:नियुक्ती आदेश

विषय: महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमाअंतर्गत "समुपदेशक" या पदावर कंत्राटी कर्मचारी म्हणून करारपध्दतीने पुर्न:नियुक्ती.

महाराष्ट्र राज्य एड्स नियंत्रण संस्था, मुंबई अंतर्गत **जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय, सातारा** यांच्या अधिनस्त **एकात्मिक समुपदेशन व चाचणी केंद्र (आयसीटीसी), कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा** या ठिकाणी आपणास **"समुपदेशक"** या पदावर **दि.०३ एप्रिल २०१७ ते दि.३१ मार्च २०१८** या कालावधीकरिता **दरमहा रु. १६,२७५/-(रु.सोळा हजार दोनशे पंच्याहत्तर फक्त)** इतमा एकत्रित परिश्रमिकावर खालील नमुद अटी व शर्तीस अधिन राहुन कंत्राटी कर्मचारी म्हणून करारपध्दतीने पुर्न:नियुक्ती देण्यात येत आहे.

अटी व शर्ती:

१. आपणांस उपरोक्त नमुद एकत्रित परिश्रमिकाव्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता, घरभाडे भत्ता वा नियमित शासकीय कर्मचाऱ्यांस मिळणारे लाभ व सवलती इत्यादी अनुज्ञेय असणार नाहीत. तसेच आपल्या सेवेच्या प्रारंभी व अंती नेमको, नवी दिल्ली यांनी वेळोवेळी दिलेल्या मार्गदर्शक सूचनांनुसार राहतील तथा त्यात वेळोवेळी होणारे बदल आपणांस बंधनकारक राहतील.
२. आपण रुजू झाल्यानंतर मराएनिसं कार्यालयाने ठरवून दिलेल्या विविध नमुन्यातील करारनामा कार्यालयास सादर करावा.
३. आपणांस करारतत्वावरील सेवा सोडतांना एक महिन्याची पुर्व सूचना देणे अथवा एक महिन्याचे एकत्रित परिश्रमिक वेतन अदा करणे बंधनकारक राहील.
४. आपले काम व कार्यालयीन उपस्थिती समाधानकारक नसल्यास आपणांस कोणतीही पुर्व सूचना न देता किंवा कारण नमुद न करता मराएनिसं कार्यालयाकडून आपली कंत्राटी सेवा केव्हाही समाप्त करण्यात येईल.
५. करार पध्दतीवरील अधिकारी/कर्मचारी यांनी त्यांचे विभागातील कागदपत्रे/माहिती व आस्थापनाविषयक गोपनियता पाळणे आवश्यक राहील तथा गोपनियतेचा भंग केल्यास कंत्राटी सेवा तात्काळ समाप्त करण्यात येईल.
६. वरिष्ठांनी/अधिकाऱ्यांनी दिलेल्या सुचना/आदेशप्रमाणे वेळोवेळी सोपविलेले कार्यालयीन काम करावे लागेल. तसेच कार्यालयीन कामकाजासाठी काही वेळेस सार्वजनिक सुट्टीच्या दिवशी तसेच कार्यालयीन वेळेपूर्वी आणि/किंवा वेळेनंतरही वरिष्ठांनी आदेशित केल्याप्रमाणे थांबून काम करावे लागेल. यासाठी वेगळ्या/जादा आर्थिक मोबदला किंवा भत्ता देय असणार नाही.
७. आवश्यकतेनुसार संस्थेच्या नियंत्रणा खालील इतर विभाग / केंद्र / कार्यालय इ. ठिकाणी प्रतिनियुक्ती / बदली केल्यास काम करावे लागेल.
८. करार संपल्यानंतर पुढील नियुक्ती देणे अथवा न देणेबाबत अधिकार प्रकल्प संचालक यांना राहतील.
९. अधिकारी/कर्मचारी यांनी, मराएनिसंच्या विभागातील सोपविलेल्या कामकाजास निष्काळजीपणामुळे किंवा जाणीवपूर्वक नुकसान करणेचे हेतूने यंत्रसामुग्रीचे नुकसान होणे, औषधी वापरासाठी अयोग्य होणे इत्यादि ज्यामुळे संस्थेचे आर्थिक नुकसान होईल अशी कृती केल्यास संबंधितांविरुध्द कायदेशिर दंडात्मक कार्यवाही करुन नुकसानीची रक्कम वसूल करण्यात येईल.

(कमलाकर बी.फंड)
प्रकल्प संचालक,
महाराष्ट्र राज्य एड्स नियंत्रण संस्था, मुंबई.

प्रति,
श्रीमती प्रमिला जाधव,
समुपदेशक, एकात्मिक समुपदेशन व चाचणी केंद्र (आयसीटीसी),
कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा.

प्रत माहितीसाठी:
१. जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय, सातारा
२. जिल्हा कार्यक्रम व्यवस्थापक, जिल्हा एड्स प्रतिबंधक व नियंत्रण कक्ष(डापकू), सातारा (बोध कार्यवाहीस्तव)
३. जिल्हा आयसीटीसी पर्यवेक्षक, सातारा (बोध कार्यवाहीस्तव)
४. कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा.
५. वित्त विभाग, मराएनिसं, मुंबई (सन २०१७-१८ सीत वेतनाच्या कार्यवाहीस्तव)

MSACS

महाराष्ट्र राज्य एड्स नियंत्रण संस्था
(महाराष्ट्र शासन)
प्लॉट नं. ए, किडवाई मार्ग, ॲकवर्थ लेप्रसी कॉम्प्लेक्स, वडाळा (प.), मुंबई - ४०००३१

मराएनिसं/प्रशासन/आयसीटीसी/पुर्न:नियुक्ती/२०१७-१८/१७९३
दिनांक: ०१ एप्रिल, २०१७.

पुर्न:नियुक्ती आदेश

विषय: **महाराष्ट्र राज्य एड्स नियंत्रण कार्यक्रमाअंतर्गत "प्रयोगशाळा तंत्रज्ञ" या पदावर कंत्राटी कर्मचारी म्हणून करारपध्दतीने पुर्न:नियुक्ती.**

महाराष्ट्र राज्य एड्स नियंत्रण संस्था, मुंबई अंतर्गत **जिल्हा शल्य चिकित्सक**, सामान्य रुग्णालय, सातारा यांच्या अधिनस्त **एकात्मिक समुपदेशन व चाचणी केंद्र (आयसीटीसी), कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा** या ठिकाणी आपणास **"प्रयोगशाळा तंत्रज्ञ"** या पदावर <u>**दि.०१ एप्रिल २०१७ ते दि.३१ मार्च २०१८**</u> या कालावधीकरिता **दरमहा रु. १३,५५०/-(रु.तेरा हजार सहाशे पन्नास फक्त)** इतक्या एकत्रित परिश्रमिकावर खालील नमुद अटी व शर्तीस अधिन राहून कंत्राटी कर्मचारी म्हणून करारपध्दतीने पुर्न:नियुक्ती देण्यात येत आहे.

अटी व शर्ती:

१. आपणांस **उपरोक्त नमूद** एकत्रित परिश्रमिकाव्यतिरिक्त कोणत्याही प्रकारचा महागाई भत्ता, घरभाडे भत्ता वा नियमित **शासकीय कर्मचा-यांस मिळणारे** लाभ व सवलती इत्यादी अनुज्ञेय असणार नाहीत. तसेच आपल्या सेवेच्या अटी व शर्ती नॅको, नवी दिल्ली यांनी वेळोवेळी दिलेल्या मार्गदर्शक सूचनांनुसार राहतील तथा त्यात वेळोवेळी होणारे बदल आपणांस **बंधनकारक** राहतील.

२. आपण **कामावर** हजर झाल्यानंतर मराएनिसं कार्यालयाने ठरवून दिलेल्या विहित नमुन्यातील करारनामा कार्यालयास सादर करावा.

३. आपणांस करारतत्वावरील सेवा सोडतांना एक महिन्याची पुर्व सूचना देणे अथवा एक महिन्याचे एकत्रित परिश्रमिक वेतन अदा करणे बंधनकारक राहील.

४. आपले काम व कार्यालयीन उपस्थिती समाधानकारक **नसल्यास** आपणांस कोणतीही पुर्व सूचना न देता किंवा कारण नमूद न करता **मराएनिसं कार्यालयाकडून** आपली कंत्राटी सेवा केव्हाही समाप्त करण्यात येईल.

५. करार पध्दतीवरील **अधिकारी**/कर्मचारी यांनी त्यांचे विभागातील कागदपत्रे/माहिती व आधारसामुग्रीबाबत गोपनियता पाळणे आवश्यक **राहील** तथा **गोपनियतेचा** भंग **केल्यास कंत्राटी** सेवा तात्काळ समाप्त करण्यात **येईल**.

६. **वरिष्ठांनी/अधिकाऱ्यांनी** दिलेल्या सुचना/**आदेशाप्रमाणे** वेळोवेळी सोपविलेले कार्यालयीन काम करावे लागेल. तसेच <u>**कार्यालयीन कामकाजासाठी काही** वेळेस **सार्वजनिक सुट्टीच्या दिवशी** तसेच कार्यालयीन **वेळेपूर्वी** आणि/**किंवा वेळेनंतरही**</u> **वरिष्ठांनी** आदेशित **केल्याप्रमाणे** थांबून काम करावे लागेल. यासाठी **वेगळा/जादा आर्थिक मोबदला** किंवा भत्ता देय असणार नाही.

७. **आवश्यकतेनुसार** संस्थेच्या **नियंत्रणा खालील** इतर विभाग / केंद्र / कार्यालय इ. ठिकाणी प्रतिनियुक्ती / **बदली** केल्यास काम करावे लागेल.

८. करार **संपल्यानंतर** पुढील **नियुक्ती** देणे अथवा न देणेबाबत अधिकार प्रकल्प **संचालक** यांना राहतील.

९. **अधिकारी**/कर्मचारी यांनी, मराएनिसंच्या विभागातील सोपविलेल्या कामकाजात निष्काळजीपणामुळे किंवा जाणीवपूर्वक नुकसान करणेच्या हेतूने यंत्रसामुग्रीचे नुकसान होणे, औषधी वापरासाठी **अयोग्य** होणे **इत्यादि** ज्यामुळे संस्थेचे आर्थिक **नुकसान होईल अशी कृती** केल्यास संबधितांविरुध्द कायदेशिर दंडात्मक कार्यवाही करुन नुकसानीची रक्कम वसूल **करण्यात येईल**.

(कमलाकर बी.फंड) भा.प्र.से.
प्रकल्प संचालक,
महाराष्ट्र राज्य एड्स नियंत्रण संस्था, मुंबई.

प्रति,
श्रीमती. सरिता जाधव,
प्रयोगशाळा तंत्रज्ञ, एकात्मिक समुपदेशन व चाचणी केंद्र (आयसीटीसी),
कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा

प्रत माहितीस्तव:
१. जिल्हा शल्य चिकित्सक, सामान्य रुग्णालय, सातारा
२. जिल्हा कार्यक्रम व्यवस्थापक, जिल्हा एड्स प्रतिबंधक व नियंत्रण कक्ष(डापकु), सातारा <u>**(योग्य कार्यवाहीस्तव)**</u>
३. जिल्हा आयसीटीसी पर्यवेक्षक, सातारा <u>**(योग्य कार्यवाहीस्तव)**</u>
४. कृष्णा इन्स्टिटयूट ऑफ मेडीकल सायन्स, जिल्हा सातारा
५. वित्त विभाग, मराएनिसं, मुंबई <u>**(सन २०१७-१८ तील वेतनाच्या कार्यवाहीस्तव)**</u>

ORIGINAL

No. 60762

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	253320
Date	23/04/2013
Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-02 in respect of the application of such design to FOOT LENGTH CALIPER in the name of KRISHNA INSTITUTE OF MEDICAL SCIENCES THROUGH DR. M. V. GHORPADE (REGISTRAR), NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, MAHARASHTRA, INDIA

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

Controller General of Patents, Designs and Trade Marks

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Copyright in the design will subsist for ten years from the date of Registration, and may underthe terms of the Act and Rules, be extended for a further period of five years.
This Certificate is not for use in legal proceedings or for obtaining registration abroad

MRS. GAURI N. BHAVE,
"CHHAYA", PLOT NO. 42, SANGAM SOCIETY,
PADMAVATI, PUNE-SATARA ROAD, PUNE 411037,
MAHARASHTRA, INDIA

Date of Issue 22/12/2017 17:19:41

ORIGINAL

No. 60761

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	253322
Date	23/04/2013
Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 09-03 in respect of the application of such design to CONTAINER in the name of KRISHNA INSTITUTE OF MEDICAL SCIENCES THROUGH DR. M. V. GHORPADE (REGISTRAR), NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, MAHARASHTRA, INDIA

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

Controller General of Patents, Designs and Trade Marks

*The reciprocity date (if any) which has been allowed and the name of the country.
Copyright in the design will subsist for ten years from the date of Registration, and may underthe terms of the Act and Rules, be extended for a further period of five years.
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MRS. GAURI N. BHAVE,
"CHHAYA", PLOT NO. 42, SANGAM SOCIETY,
PADMAVATI, PUNE-SATARA ROAD, PUNE 411037,
MAHARASHTRA, INDIA

Date of Issue 22/12/2017 17:19:06

ORIGINAL

No. 60764

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	253323
Date	23/04/2013
Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-02 in respect of the application of such design to MEDICAL AID USED FOR OBSTETRICIANS in the name of KRISHNA INSTITUTE OF MEDICAL SCIENCES THROUGH DR. M. V. GHORPADE (REGISTRAR), NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, MAHARASHTRA, INDIA

in pursuance of and subject to the provisions of the Designs Act, 2000 and the Designs Rules, 2001.

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*The reciprocity date (if any) which has been allowed and the name of the country.
Copyright in the design will subsist for ten years from the date of Registration, and may underthe terms of the Act and Rules, be extended for a further period of five years.
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MRS. GAURI N. BHAVE,
"CHHAYA", PLOT NO. 42, SANGAM SOCIETY,
PADMAVATI, PUNE-SATARA ROAD, PUNE 411037,
MAHARASHTRA, INDIA

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GOVERNMENT OF INDIA

Controller General of Patents,Designs and Trademarks
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry

Application Details

APPLICATION NUMBER	201623023433
APPLICATION TYPE	PATENT OF ADDITION FOR ORDINARY APPLICATION
DATE OF FILING	08/07/2016
APPLICANT NAME	1 . Indian Institute of Technology, Bombay 2 . Krishna Institute of Medical Sciences 3 . Department of Biotechnology
TITLE OF INVENTION	BIOARTIFICIAL PANCREAS
FIELD OF INVENTION	MECHANICAL ENGINEERING
E-MAIL (As Per Record)	patent@depenning.com
ADDITIONAL-EMAIL (As Per Record)	patent@depenning.com
E-MAIL (UPDATED Online)	
PARENT APPLICATION NUMBER	2697/MUM/2010
PRIORITY DATE	NA
REQUEST FOR EXAMINATION DATE	08/07/2016
PUBLICATION DATE (U/S 11A)	12/01/2018

Application Status

APPLICATION STATUS	**Application Awaiting Examination**

View Documents

E-101/39124/2016.

200222489

FORM 1 THE PATENTS ACT 1970 (39 of 1970) and The Patents Rules, 2003 APPLICATION FOR GRANT OF PATENT (See section 7, 54 & 135 and sub-rule (1) of rule 20)		(FOR OFFICE USE ONLY)
	Application No. :	
	Filing Date :	
	Amount of Fee Paid :	
	CBR No. :	
	Signature :	
1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)		

2. TYPE OF APPLICATION [Please tick() at the appropriate category]					
Ordinary(✓)		Convention()		PCT-NP ()	
Divisional ()	Patent of Addition (✓)	Divisional ()	Patent of Addition ()	Divisional ()	Patent of Addition ()

3A. APPLICANT(S)

Name in Full	Nationality	Country of Residence	Address of the Applicant
Indian Institute of Technology, Bombay	Indian	India	Powai, Mumbai-400076, Maharashtra, India
Krishna Institute of Medical Sciences	Indian	India	Malkapur, Karad-415539, District Satara, Maharashtra, India
Department of Biotechnology	Indian	India	Ministry of Science and Technology, 6th - 8th Floor, Block 2, CGO Complex, Lodhi Road, New Delhi-110003, India

3B. CATEGORY OF APPLICANT [Please tick() at the appropriate category]			
Natural Person ( )	Other than Natural Person		
	Small Entity ( )	Startup ( )	Others (✓)
4. INVENTOR(S) [Please tick() at the appropriate category]			
Are all the inventor(s) same as the applicant(s) name above?	Yes ()	No (✓)	
If "No", furnish the details of the inventor(s)			

Name in Full	Nationality	Country of Residence	Address of the Inventor
Bellare, Jayesh	Indian	India	Indian Institute of Technology, Bombay, Department of Chemical Engineering , Powai, Mumbai-400076, Maharashtra, India
Teotia, Rohit Satvir	Indian	India	Indian Institute of Technology, Bombay, Department of Biosciences and Bioengineering, Powai, Mumbai-400076, Maharashtra, India
Singh, Atul Kumar	Indian	India	Indian Institute of Technology, Bombay, Department of Centre for Research in Nanotechnology and Science (CRNTS), Powai, Mumbai-400076, Maharashtra, India
Verma, Surendra Kumar	Indian	India	Indian Institute of Technology, Bombay, Department of Chemical Engineering, Powai, Mumbai-400076, Maharashtra, India
Kadam, Sachin	Indian	India	Krishna Institute of Medical Sciences, Department of Genetics, Malkapur, Karad-415539, District Satara, Maharashtra, India

5. TITLE OF THE INVENTION		
BIOARTIFICIAL PANCREAS		
6. AUTHORISED REGISTERED PATENT AGENT(S)	IN/PA No.	584
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	Telephone No.	+9122 - 42208383
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	Fax No.	+9122 - 42208300
	Email ID	patent@depenning.com

8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION

Country	Application No.	Filing Date	Name of the Applicant	Title of the Invention	IPC (as classified in the convention country)
NA	NA	NA	NA	NA	NA

9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)	
International Application Number	International Filing Date
NA	NA
10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL (FIRST) APPLICATION	
Original (First) Application No.	Date of Filing of Original (First) Application
NA	NA
11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT	
Main Application / Patent No.	Date of Filing of Main Application
2697/MUM/2010	**28 September 2010**

12. DECLARATIONS

(i) Declaration by the inventor(s)

(In case the applicant is an assignee: the inventor(s) may sign herein below or the applicant may upload the assignment or enclose the assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).

I/We, the above named inventor(s) is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/~~are~~ ~~my~~/our assignee or legal representative.

(a) Date
(b) Signature
(c) Name Bellare, Jayesh 25/7/2016

(a) Date
(b) Signature 22/07/2016
(c) Name Teotia, Rohit Satvir

(a) Date
(b) Signature
(c) Name Singh, Atul Kumar 22/7/16

(a) Date
(b) Signature
(c) Name Verma, Surendra Kumar 22/7/16

(a) Date 22/09/2016
(b) Signature
(c) Name Kadam, Sachin

(ii) Declaration by the applicant(s) in the convention country

(In case the applicant in India is different than the applicant in the convention country: the applicant in the convention country may sign herein below or applicant in India may upload the assignment from the applicant in convention country or enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).

~~I~~/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: NA
(b) Signature(s): NA
(c) Name(s) of the signatory: NA

(iii) Declaration by the applicant(s)

~~I~~/We, the applicant(s) hereby declare(s) that:-

☑ ~~I am~~/We are in possession of the above mentioned invention.
☑ The ~~provisional~~ / complete specification relating to the invention is filed with this application.
☑ The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by ~~me /~~ us before the grant of patent to ~~me~~/us.
☑ There is no lawful ground of objections to the grant of the Patent to ~~me~~/us.
☒ ~~I am~~ / We are the true & first inventor(s).
☑ ~~I am~~ / We are the assignee or legal representative of true & first inventor(s).
☒ The application or each of the applications, particulars of which are given in Para 8 was the first application in convention country/countries in respect of ~~my~~/our invention(s).
☒ ~~I~~ / We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before the date by ~~me~~/us or by any person from which ~~I~~/we derive the title.
☒ ~~My~~/Our application in India is based on International application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9.
☒ The application is divided out of my/our application particulars of which is given in Paragraph-10 and pray that this application may be treated as deemed to have been filed on.....under sec.16 of the Act.
☑ The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph – 11.

13. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

a) Form 2

Item	Details	Fee	Remarks
Complete/~~provisional~~ specification #	No. of pages – 30	Rs.8000/- + Rs. 9600/-	Fee for extra 12 pages

No. of Claim(s)	No. of Claims - 20 No. of Pages - 4	Rs. 16000/-	Fee for extra 10 claim
Abstract	No. of Pages - 1	----	----
No. of Drawing(s)	No. of Drawings - 11 No. of Pages -7	----	----

~~# In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule13(4), the no. of such pages filed with the provisional specification are required to be mentioned here.~~

(b) complete specification
(c) Drawings
(d) Statement and undertaking on Form 3
(e) Declaration of Inventorship on Form 5
(f) Request for Examination on Form 18

Total Fee Rs.33600/- + Rs.20000/- = Rs.53600/- is paid by e-filing module.

~~I~~ / We hereby declare that to the best of ~~my~~/our knowledge, information and belief the fact and matters stated herein are correct and ~~I~~/we request that a patent may be granted to me/us for the said invention.

Dated this 08 day of July 2016

(1) Indian Institute of Technology, Bombay
(2) Krishna Institute of Medical Sciences
(3) Department of Biotechnology

K K Goleria

Karuna Goleria
IN/PA No. 584
Of De Penning & De Penning
Agent for the Applicants

To,
The Controller of Patents
The Patent Office, at Mumbai

ORIGINAL

No. 60763

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भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

CERTIFICATE OF REGISTRATION OF DESIGN

Design No.	253321
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Reciprocity Date*	
Country	

Certified that the design of which a copy is annexed hereto has been registered as of the number and date given above in class 24-02 in respect of the application of such design to NAIL SHADE DEVICE FOR SCREENING OF ANEMIA in the name of KRISHNA INSTITUTE OF MEDICAL SCIENCES THROUGH DR. M. V. GHORPADE (REGISTRAR), NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, MAHARASHTRA, INDIA

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Extracts from the Register of Copyrights

Dated : 05/06/2017

1.	Registration Number	: L-66090/2017
2.	Name, address and nationality of the applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, THROUGH ITS REGISTRAR DR. M. V. GHORPADE , KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN
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4.	Class and description of the work	: LITERARY/ DRAMATIC WORK PATIENTS RISK FACTORS AND RESPONSE MEASURES THAT CAN BE USED EARLY DURING TREATMENT
5.	Title of the work	: FIELD LEVEL WORKER SCORING SYSTEM FOR TUBERCULOSIS TREATMENT OUTCOMES
6.	Language of the work	: ENGLISH
7.	Name, address and nationality of the author and if the author is deceased, date of his decease	: DR. ASHA PRATINIDHI , DIRECTOR OF RESEARCH, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. SWAPNIL LALE , DISTRICT TUBERCULOSIS OFFICER SATARA, DIST-SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. GERALD QUINNAN , PUBLIC HEALTH CONSULTANT, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. SWATI AUNDHKAR , PROFESSOR & HEAD, DEPARTMENT OF MEDICINE, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. A. C. BOTRE , ASSISTANT PROFESSOR, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. A. V. JADHAV , MEDICAL OFFICER, DISTRICT TUBERCULOSIS CENTER SATARA, DIST- SATARA, MAHARASHTRA-415539 INDIAN DR. K. D. DAYAL , MEDICAL OFFICER, DISTRICT TUBERCULOSIS CENTER SATARA, DIST- SATARA, MAHARASHTRA, INDIA-415539 INDIAN
8.	Whether the work is published or unpublished	: UNPUBLISHED
9.	Year and country of first publication and name, address and nationality of the publisher	: N.A.
10.	Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	: N.A.
11.	Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each, together with particulars of assignments and licences, if any	: KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, THROUGH ITS REGISTRAR DR. M. V. GHORPADE , KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN
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14.	If the work is an 'Artistic work', whether it is registered under the Designs Act 2000 if yes give details.	: N.A.
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Extracts from the Register of Copyrights

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2.	Name, address and nationality of the applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, THROUGH ITS REGISTRAR DR. M. V. GHORPADE , KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN
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4.	Class and description of the work	: LITERARY/ DRAMATIC WORK SCREENING AID THE ADULT AND CHILDHOOD CONTACTS CAN BE SCREENED FOR SYMPTOMATIC SUSPECTED CASES OF T.B. BY THE HEALTH VISITORS
5.	Title of the work	: TUBERCULOSIS CONTACT TRACING PICTORIAL CARD
6.	Language of the work	: ENGLISH
7.	Name, address and nationality of the author and if the author is deceased, date of his decease	: DR. ASHA PRATINIDHI , DIRECTOR OF RESEARCH, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. SWAPNIL LALE , DISTRICT TUBERCULOSIS OFFICER SATARA, DIST-SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. GERALD QUINNAN , PUBLIC HEALTH CONSULTANT, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR.P. M. DURDAWALE , PROFESSOR & HEAD DEPARTMENT OF COMMUNITY MEDICINE, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. V. V. RAJE , PROFESSOR, DEPARTMENT OF COMMUNITY MEDICINE, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. A. V. JADHAV , MEDICAL OFFICER, DISTRICT TUBERCULOSIS CENTER SATARA, DIST- SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. K. D. DAYAL , MEDICAL OFFICER, DISTRICT TUBERCULOSIS CENTER SATARA, DIST- SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. MRS. NEELIMA A. MALIK , EX- PRINCIPAL, SCHOOL OF DENTAL SCIENCE, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY, NEAR DHEBEWADI ROAD, MALKAPUR TAL - KARAD. PIN - 415539 DIST. - SATARA, MAHARASHTRA, INDIA-415539 INDIAN
8.	Whether the work is published or unpublished	: UNPUBLISHED
9.	Year and country of first publication and name, address and nationality of the publisher	: N.A.
10.	Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	: N.A.
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13.	If the work is an 'Artistic work', the location of the original work, including name, address and nationality of the person in possession of the work. (In the case of an architectural work, the year of completion of the work should also be shown)	: N.A.

Randomized Controlled Trial N Engl J Med. 2018 Nov 29;379(22):2097-2107.
doi: 10.1056/NEJMoa1801174. Epub 2018 Nov 7.

Alirocumab and Cardiovascular Outcomes after Acute Coronary Syndrome

Gregory G Schwartz [1], P Gabriel Steg [1], Michael Szarek [1], Deepak L Bhatt [1], Vera A Bittner [1], Rafael Diaz [1], Jay M Edelberg [1], Shaun G Goodman [1], Corinne Hanotin [1], Robert A Harrington [1], J Wouter Jukema [1], Guillaume Lecorps [1], Kenneth W Mahaffey [1], Angèle Moryusef [1], Robert Pordy [1], Kirby Quintero [1], Matthew T Roe [1], William J Sasiela [1], Jean-François Tamby [1], Pierluigi Tricoci [1], Harvey D White [1], Andreas M Zeiher [1],
ODYSSEY OUTCOMES Committees and Investigators

Collaborators, Affiliations
PMID: 30403574 DOI: 10.1056/NEJMoa1801174
Free article

Abstract

Background: Patients who have had an acute coronary syndrome are at high risk for recurrent ischemic cardiovascular events. We sought to determine whether alirocumab, a human monoclonal antibody to proprotein convertase subtilisin-kexin type 9 (PCSK9), would improve cardiovascular outcomes after an acute coronary syndrome in patients receiving high-intensity statin therapy.

Methods: We conducted a multicenter, randomized, double-blind, placebo-controlled trial involving 18,924 patients who had an acute coronary syndrome 1 to 12 months earlier, had a low-density lipoprotein (LDL) cholesterol level of at least 70 mg per deciliter (1.8 mmol per liter), a non-high-density lipoprotein cholesterol level of at least 100 mg per deciliter (2.6 mmol per liter), or an apolipoprotein B level of at least 80 mg per deciliter, and were receiving statin therapy at a high-intensity dose or at the maximum tolerated dose. Patients were randomly assigned to receive alirocumab subcutaneously at a dose of 75 mg (9462 patients) or matching placebo (9462 patients) every 2 weeks. The dose of alirocumab was adjusted under blinded conditions to target an LDL cholesterol level of 25 to 50 mg per deciliter (0.6 to 1.3 mmol per liter). The primary end point was a composite of death from coronary heart disease, nonfatal myocardial infarction, fatal or nonfatal ischemic stroke, or unstable angina requiring hospitalization.

Results: The median duration of follow-up was 2.8 years. A composite primary end-point event occurred in 903 patients (9.5%) in the alirocumab group and in 1052 patients (11.1%) in the placebo group (hazard ratio, 0.85; 95% confidence interval [CI], 0.78 to 0.93; P<0.001). A total of 334 patients (3.5%) in the alirocumab group and 392 patients (4.1%) in the placebo group died (hazard ratio, 0.85;

Comparative Study Lancet. 2018 Nov 10;392(10159):1859-1922.
doi: 10.1016/S0140-6736(18)32335-3.

Global, regional, and national disability-adjusted life-years (DALYs) for 359 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017

GBD 2017 DALYs and HALE Collaborators

Collaborators

PMID: 30415748 PMCID: PMC6252083 DOI: 10.1016/S0140-6736(18)32335-3
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2019 Jun 22;393(10190):e44. doi: 10.1016/S0140-6736(19)31043-8.
PMID: 31232376 Free PMC article. No abstract available.

Abstract

Background: How long one lives, how many years of life are spent in good and poor health, and how the population's state of health and leading causes of disability change over time all have implications for policy, planning, and provision of services. We comparatively assessed the patterns and trends of healthy life expectancy (HALE), which quantifies the number of years of life expected to be lived in good health, and the complementary measure of disability-adjusted life-years (DALYs), a composite measure of disease burden capturing both premature mortality and prevalence and severity of ill health, for 359 diseases and injuries for 195 countries and territories over the past 28 years.

Methods: We used data for age-specific mortality rates, years of life lost (YLLs) due to premature mortality, and years lived with disability (YLDs) from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017 to calculate HALE and DALYs from 1990 to 2017. We calculated HALE using age-specific mortality rates and YLDs per capita for each location, age, sex, and year. We calculated DALYs for 359 causes as the sum of YLLs and YLDs. We assessed how observed HALE and DALYs differed by country and sex from expected trends based on Socio-demographic Index (SDI). We also

Lancet. 2018 Nov 10;392(10159):1789-1858. doi: 10.1016/S0140-6736(18)32279-7. Epub 2018 Nov 8.

Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017

GBD 2017 Disease and Injury Incidence and Prevalence Collaborators

Collaborators

PMID: 30496104 PMCID: PMC6227754 DOI: 10.1016/S0140-6736(18)32279-7
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Erratum in

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[No authors listed]
Lancet. 2019 Jun 22;393(10190):e44. doi: 10.1016/S0140-6736(19)31047-5.
PMID: 31232377 Free PMC article. No abstract available.

Abstract

Background: The Global Burden of Diseases, Injuries, and Risk Factors Study 2017 (GBD 2017) includes a comprehensive assessment of incidence, prevalence, and years lived with disability (YLDs) for 354 causes in 195 countries and territories from 1990 to 2017. Previous GBD studies have shown how the decline of mortality rates from 1990 to 2016 has led to an increase in life expectancy, an ageing global population, and an expansion of the non-fatal burden of disease and injury. These studies have also shown how a substantial portion of the world's population experiences non-fatal health loss with considerable heterogeneity among different causes, locations, ages, and sexes. Ongoing objectives of the GBD study include increasing the level of estimation detail, improving analytical strategies, and increasing the amount of high-quality data.

Methods: We estimated incidence and prevalence for 354 diseases and injuries and 3484 sequelae. We used an updated and extensive body of literature studies, survey data, surveillance data, inpatient admission records, outpatient visit records, and health insurance claims, and additionally used results from cause of death models to inform estimates using a total of 68 781 data sources. Newly available

103

Lancet. 2018 Jun 2;391(10136):2236-2271. doi: 10.1016/S0140-6736(18)30994-2. Epub 2018 Jun 1.

Measuring performance on the Healthcare Access and Quality Index for 195 countries and territories and selected subnational locations: a systematic analysis from the Global Burden of Disease Study 2016

GBD 2016 Healthcare Access and Quality Collaborators

Collaborators

PMID: 29893224 PMCID: PMC5986687 DOI: 10.1016/S0140-6736(18)30994-2
Free PMC article

Abstract

Background: A key component of achieving universal health coverage is ensuring that all populations have access to quality health care. Examining where gains have occurred or progress has faltered across and within countries is crucial to guiding decisions and strategies for future improvement. We used the Global Burden of Diseases, Injuries, and Risk Factors Study 2016 (GBD 2016) to assess personal health-care access and quality with the Healthcare Access and Quality (HAQ) Index for 195 countries and territories, as well as subnational locations in seven countries, from 1990 to 2016.

Methods: Drawing from established methods and updated estimates from GBD 2016, we used 32 causes from which death should not occur in the presence of effective care to approximate personal health-care access and quality by location and over time. To better isolate potential effects of personal health-care access and quality from underlying risk factor patterns, we risk-standardised cause-specific deaths due to non-cancers by location-year, replacing the local joint exposure of environmental and behavioural risks with the global level of exposure. Supported by the expansion of cancer registry data in GBD 2016, we used mortality-to-incidence ratios for cancers instead of risk-standardised death rates to provide a stronger signal of the effects of personal health care and access on cancer survival. We transformed each cause to a scale of 0-100, with 0 as the first percentile (worst) observed between 1990 and 2016, and 100 as the 99th percentile (best); we set these thresholds at the country level, and then applied them to subnational locations. We applied a principal components analysis to construct the HAQ Index using all scaled cause values, providing an overall score of 0-100 of personal health-care access and quality by location over time. We then compared HAQ Index levels and trends by quintiles on the Socio-demographic Index (SDI), a summary measure of overall development. As derived from the broader GBD study and other data sources, we examined

Lancet. 2018 Nov 10;392(10159):1995-2051. doi: 10.1016/S0140-6736(18)32278-5. Epub 2018 Nov 8.

Population and fertility by age and sex for 195 countries and territories, 1950-2017: a systematic analysis for the Global Burden of Disease Study 2017

GBD 2017 Population and Fertility Collaborators

Collaborators

PMID: 30496106 PMCID: PMC6227915 DOI: 10.1016/S0140-6736(18)32278-5
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2019 Jun 22;393(10190):e44. doi: 10.1016/S0140-6736(19)31045-1.
PMID: 31232381 Free PMC article. No abstract available.

Abstract

Background: Population estimates underpin demographic and epidemiological research and are used to track progress on numerous international indicators of health and development. To date, internationally available estimates of population and fertility, although useful, have not been produced with transparent and replicable methods and do not use standardised estimates of mortality. We present single-calendar year and single-year of age estimates of fertility and population by sex with standardised and replicable methods.

Methods: We estimated population in 195 locations by single year of age and single calendar year from 1950 to 2017 with standardised and replicable methods. We based the estimates on the demographic balancing equation, with inputs of fertility, mortality, population, and migration data. Fertility data came from 7817 location-years of vital registration data, 429 surveys reporting complete birth histories, and 977 surveys and censuses reporting summary birth histories. We estimated age-specific fertility rates (ASFRs; the annual number of livebirths to women of a specified age group per 1000 women in that age group) by use of spatiotemporal Gaussian process regression and used the ASFRs to estimate total fertility rates (TFRs; the average number of children a woman would bear if she survived through the end of the reproductive age span [age 10-54 years] and experienced at each age a particular set of ASFRs observed in the year of interest). Because of sparse data, fertility at ages

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Indian J Psychiatry. 2018 Jan-Mar; 60(1): 114–120.
doi: 10.4103/psychiatry.IndianJPsychiatry_200_17

PMCID: PMC5914239
PMID: 29736073

A study of neuropsychological profile of human immunodeficiency virus-positive children and adolescents on antiretroviral therapy

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Abstract

Aims:

The aim is to study the neuropsychological and functional profile of children and adolescents with human immunodeficiency virus (HIV) infection on antiretroviral therapy (ART) and the association between the neuropsychological status and medical illness variables, treatment variables, and functional status in the cases of the sample and compare with normal controls.

Materials and Methods:

Forty-two HIV-positive children and adolescents on ART were evaluated and compared with 40 matched controls not known to be HIV-positive. The tools used were the Wechsler Intelligence Scale for Children-III R for neuropsychological evaluation, the Brief Impairment Scale to assess functional impairment, and a semi-structured questionnaire to obtain other relevant details.

Results:

There were significant differences between the verbal, performance intelligence quotients (IQs), global IQ score, and several individual subtests between cases and controls. The HIV group was also found to have a significant functional impairment.

Conclusion:

Our findings show that HIV infection is associated with significant cognitive and functional impairment. The role of ART in these impairments requires further study. Such understanding can help to introduce wholesome and relatively safer management strategies for youngsters with HIV infection and improve their quality of life.

Keywords: Adolescents, anti-retroviral therapy, children, HIV, intelligence

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Multicentric study on prevalence and risk factors for hypertension and diabetes in tribal communities in Western and Northern Maharashtra

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Free PMC article

Abstract

Background and objectives: Although a number of studies have been conducted on the prevalence of hypertension (HTN) and diabetes on tribal populations in different parts of India, comparative tribe-specific information is very meager. The main objective of this study is to generate tribe-specific information on the noncommunicable disorders (NCDs) and associated risk factors in scheduled tribes (STs) in Coastal and Western Maharashtra.

Methods: The study was conducted on 1864 (females 960) adults (≥18 years) of both sexes in four dominant tribes in the region, namely, Bhils (748), Katkaris (560), Kokana (352), and Thakars (204), using the protocols approved by the Institutional Review Board. The study areas were geographically separated by large distances (250-500 km apart). Prevalence of overweight, diabetes, HTN, and hypercholesterolemia was measured using standard field-based techniques described in our earlier publication.

Results: All STs in this study are grossly underweight; the Katkaris are worst affected. The prevalence of obesity (body mass index ≥30 kg/m2), HTN (blood pressure ≥140 mmHg), diabetes (capillary blood glucose >126 mg/dl), and hypercholesterolemia (cholesterol ≥200 mg/dl) was 0.9%, 11.7%, 6.7%, and 0.6% respectively. There are no statistically significant inter-tribal differences in the prevalence of these parameters. Age and obesity appeared to be the most dominant risk factors for HTN. However, there is no clear-cut picture about the influence of risk factors on diabetes or hypercholesterolemia.

Clinical Trial Vaccine. 2018 Feb 21;36(9):1220-1226. doi: 10.1016/j.vaccine.2018.01.006. Epub 2018 Feb 1.

Immunogenicity and safety of measles-mumps-rubella vaccine delivered by disposable-syringe jet injector in India: A randomized, parallel group, non-inferiority trial

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Abstract

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ORIGINAL ARTICLE

Toxoplasma Antibody Titers in Mania: A Cross Sectional Study

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Abstract:

Background: Recent studies have found a role of infectious agents, especially *Toxoplasma gondii*, in pathology of bipolar disorder - mania. *Aim and Objectives*: This study was conducted with the aim to find the prevalence of toxoplasma antibody titers in Indian patients with mania and to assess its specificity towards the clinical profile. *Material and Methods:* Thirty-four patients having mania were recruited who were psychotropic naïve/free, along with 74 healthy controls. Psychopathology was assessed using structured assessment scales. Serum concentration of Toxoplasma IgG was measured using Diesse Enzywell Toxoplasma IgG immunoassay kit. *Results:* Mann–Whitney U test revealed that the toxoplasma antibody levels were significantly higher in the mania group than healthy controls ($U = 766.5$, $z = 3.25$, $p = 0.001$). Spearman correlation analyses did not reveal any significant correlation between toxoplasma antibody levels and age at onset ($\rho = 0.19$, $p = 0.26$) or YMRS scores ($\rho = 0.15$, $p = 0.39$). *Discussion:* The herein reported association could have potential implications in better understanding the patho-physiology of mania and its treatment. This is the first study to evaluate the association between toxoplasma titers and mania in India with only a few studies done elsewhere in the world.

Keywords: Bipolar, Mania, Psychosis, Toxoplasma

Introduction:

Bipolar Disorders (BD) are a group of psychotic disorders of as yet uncertain etiology, characterized by episodes of mania and depression. Genetic variations have a major underlying role to play in the susceptibility and pathogenesis of BD, but the exact molecular mechanisms are yet to be fully ascertained [1]. Recent study found a role for both infection and inflammation in pathology of BD which is contingent upon genetic variations [2]. Among the infectious agents, *Toxoplasma gondii* has received lot of research interest recently as a causative agent for a number of psychiatric disorders [3].

T. gondii is a ubiquitous parasite found in a variety of hosts. It is increasingly being recognized as a global threat [4]. It is one among many parasites which have been found to alter the host behaviour [5,6]. There is only one species, *gondii* in the genus toxoplasma. Different strains of *T. gondii* have been identified which employ different strategies to avoid, deflect or subvert host defense mechanisms [7]. It can inhabit and multiply in all nucleated cells [8]. It has two phases during replication, each occurring in different hosts – a sexual phase in cats and an asexual phase in other hosts. Humans are infected when exposed to cat

Indian Heart J. Mar-Apr 2018;70(2):296-302. doi: 10.1016/j.ihj.2017.07.019. Epub 2017 Aug 1.

Catheter ablation for electrical storm in Brugada syndrome: Results of substrate based ablation

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Free PMC article

Abstract

Background: Brugada syndrome (BrS) is known to cause malignant ventricular arrhythmia (VA) and sudden cardiac death (SCD). Patients with implantable cardioverter defibrillator (ICD) may experience recurrent shocks from ICD. Recent reports indicate that radiofrequency ablation (RFA) in BrS is feasible, and effective. Catheter ablation of premature ventricular complexes (PVCs) triggering VA and substrate modification of right ventricular outflow tract (RVOT) has been described.

Methods and results: Five patients (4 males, age-23 to 32 years) with BrS and electrical storm (ES) despite being on isoprenaline infusion and cilostazol (phosphodiestrase-3 inhibitor) underwent 3 dimensional electroanatomic mapping and RFA. Ventricular fibrillation was easily inducible in two patients. Voltage map of right ventricle was created in sinus rhythm in all patients. Substrate modification of RVOT was performed endocardially in one patient, both endocardial and epicardial in three and only epicardially in one patient. Brugada pattern gradually resolved over one week in all patients post procedure. These patients completed follow up of median 40 months (1.5-70). One patient had inappropriate shock due to atrial fibrillation, one had an episode of VF and appropriate

Study of Mucin Histochemistry in Benign hyperplasia and Malignant Lesions of Human Prostate Gland

Manoj P Ambali*, Megha A. Doshi*, Gaurishankar M Ganga**, Sujata R Kanetkar*, Satish V Kakade*

Abstract

Aim: Prostatic enlargement occurs due to nodular hyperplasia, prostatitis and neoplasm of prostate gland. Incidence of prostate cancer increases by 1% yearly which has been reported in the last three years. Early detection of prostate cancer is important. Also, the differentiation between benign hyperplasia and malignant lesions of prostate is very important for the treatment of patient. Aim of the present study is to evaluate the usefulness of Mucin stains in differentiating between benign hyperplasia and malignant lesions of prostate.

Material and Methods: The study was done on ninety-five specimens of benign hyperplasia (n=73) and malignant (n=22) prostates which were collected from postmortem and surgically resected specimens in KIMSU and KHMRC hospital. Routine Hematoxylin & Eosin and special stains such as PAS, PAS-Diastase, PAS-Phenyl Hydrazine, Alcian Blue PH -2.5 and 1, Aldehyde Fuchsin, combined AB-PAS and AF-AB were performed

Results: We tabulated our results according to color intensity into different grades ranging from -ve to +++. Acid mucins were present predominantly in prostate carcinoma.

Conclusion: Hence, mucin histochemistry may be a valuable and cost-effective tool for the differentiation between benign hyperplasia and carcinoma of prostate.

Key words: Prostate, Carcinoma of prostate, Mucin, Histochemistry, Benign hyperplasia, Acid mucin, PAS.

Introduction

Benign prostate hyperplasia (BPH) is a histological diagnosis describing a hyper-proliferative process of epithelial and stromal cells in the transition zone of the prostate. [1] Age itself is the major risk factor for BPH. The prevalence of BPH rises markedly with aging. [2]Carcinoma of the prostate (CaP) is responsible for 10% of internal malignancies death in males. [3]As the age increases the incidence of CaP rises progressively especially after the age of 50 years with a peak incidence in the age group of 75 years and above.[4] However, most of the patients of CaP die of other unrelated causes because they never have symptoms or very late diagnosis. [5]BPH and neoplasm are the two major causes of prostate hypertrophy and to differentiate between both, the prostate needle biopsy is commonly used. However, in this procedure limited amount of tissue is available for diagnosis. Sometimes BPH may mimic adenocarcinoma of prostate. The diagnosis of CaP is one of the most challenging areas of surgical pathology. [6]For precise differential diagnosis of BPH and CaP there is a need of a marker which is specific, cost effective and can be easily used in remote areas.

Various types of mucins are present in mammalian tissue. Mucosubstances are tissue components, other than glycogen which are rich in carbohydrates and present in connective tissue, or secreted by certain epithelial structures. [7]. Muco-substances secreted by epithelia are known as "mucins"[8]. Mucins perform different types of functions like lubrication, protection against acids etc. Two types of mucosubstances are present: A) Neutral mucins and B) Acidic mucins

Neutral mucins are slightly alkaline which help for reducing the pH and toxicity of substances. Acidic mucins are sub classified into weakly acidic and strongly acidic.[8, 9, 10]

Histochemistry is a technique in which a chemical reaction is involved in coloring tissue, be it staining with dyes. The designation of a stain as special may be arbitrary but generally

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Research Article - Basic and Applied Anatomy

A study on coronary dominance and luminal diameters of major coronary arteries in cadaveric human hearts of the Maharashtra population

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Abstract

The study was undertaken to assess the coronary dominance and variations in luminal diameters of major coronary arteries and to compare the relation between the coronary dominance and variation in luminal diameter and between coronary dominance and number of vessels measuring less than 2.5 mm in diameter, in 75 cadaveric human hearts obtained from the Department of Anatomy from the various medical colleges of western Maharashtra, India. Out of 75 hearts, 58 (77.33%) showed right dominance, 14 (18.67%) showed left dominance and 3 (4%) showed codominant pattern. No significant difference was noted in the luminal diameters of coronary arteries (right coronary artery, marginal artery, posterior interventricular artery, left coronary artery, anterior interventricular branch, circumflex branch) among the dominance type. It was also observed that 63 hearts (84%) showed more than 2 arteries measuring less than 2.5mm in diameter. To conclude, a majority of the population has a right predominance and hence the chances of suffering from coronary artery disease are relatively less, but however 84% of the sample under study had more than two coronary arteries measuring less than 2.5 mm in diameter out of the 6 arteries studied, thus increasing susceptibility of thrombosis in these arteries and therefore increasing the chances of myocardial infarction.

Key words

Right dominance, left dominance, codominance, posterior interventricular artery.

Introduction

Coronary heart disease (CHD) is a leading cause of mortality and morbidity in developed countries. The prevalence in India had increased rapidly from 1% in 1960 to 9.7% in 1995 and it is further increasing year after a year. This raise in the disease burden may be due to changing lifestyle, urbanization and sedentary lifestyle (Mandal et al. 2009). Hence an in-depth study of the coronary arteries has become important for better understanding the coronary pathophysiology and better management of coronary heart diseases like myocardial infarction and angina pectoris.

The heart is supplied by two coronary arteries (right and left) and their branches. Coronary arteries are known for their wide variations with regard to origin, size, course ,termination and branching pattern (Das et al., 2010). Knowledge of this vari-

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View PDF

Evaluation of Synergistic *In vitro* Anti-inflammatory Activity of *Eulophia ochreata* Lindl and *Zingiber cassumunar* Roxb

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ABSTRACT:

Medicines derived from plant extracts are being increasingly utilized to treat a variety of diseases, though relatively little knowledge about their activity is available. Based on survey, herbs used for the study has well established histories of human use for the treatment of arthritic conditions. The present research paper highlights the invitro anti-inflammatory activity of *Eulophia ochreata* Lindl, *Zingiber cassumunar* Roxb *and its* 1:1 blend of both the extracts. The test extracts of varying concentrations were incubated with egg albumin under controlled experimental conditions and subjected to determination of absorbance to assess the anti-inflammatory property. The results obtained exhibited a concentration- dependent inhibition of protein denaturation by both extracts, including the 1:1 blend of the extracts. Membrane stabilization activity was evaluated using the human red blood cells(HRBC) membrane stabilization method as HRBC membranes are similar to lysosomal membrane components. The prevention of HRBC membrane lysis was taken as a measure of anti-inflammatory activity of test extracts including the 1:1 blend of the extracts. A standard anti-inflammatory drug, diclofenac, was used as reference drug. From the present findings it can be concluded that both *Eulophia ochreata Lindl and Zingiber cassumunar Roxb* and its 1: 1 bend of extract possessed marked anti-inflammatory effect .Thus 1:1 bend of extract being more effective. Hence, there is urgent need to utilize ancient knowledge of herbal plants and its synergistic activity to bring its maximum potential in the field of medical and pharmaceutical sciences in novel herbal drug development which will economically benefited for common man.

KEYWORDS: *Eulophia ochreata* Lindl, *Zingiber cassumunar* Roxb , anti-inflammatory ,membrane stabilizing, protein denaturation.

INTRODUCTION:

Arthritis is an autoimmune disorder characterized by pain, swelling and inflexibility[1]. Rheumatoid joint inflammation influences more or less 1% of the population around the world. Its etiology is still obscure[2] . Inflammation, usually characterized by redness, swelling, pain and a sensation of heat, is one of the body's self-defense systems. This biological response is a protective mechanism of organisms for defense against noxious physical or chemical stimuli.

However, chronic inflammation has been reported to be involved in the development of various diseases such as, rheumatoid arthritis[3,4] cancer[5,6] multiple sclerosis[7,8] inflammatory bowel disease[9], bronchial asthma[10] and atherosclerosis[11-17] and increase of protein denaturation and membrane alterations[18], allergic rhinitis[19], atopic dermatitis[20] etc These inflammatory mediators come from plasma proteins or cells including mast cells, platelets, neutrophils and monocytes /macrophages. The commonly used drugs for management of inflammatory conditions are nonsteroidal anti-inflammatory drugs (NSAIDs), which have several adverse effects especially gastric irritation and ulcer[21].

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Page : AC16 - AC18

Histological Evaluation of the Effect of Tamra Bhasma (Copper Based Metallic) and Jasada Bhasma (Zinc Based Mineral) Formulations on Testis of Wistar Albino Rats

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Abstract

Introduction

The metallic or herbo-mineral preparations used in the Indian system of medicine may cause a toxic effect on mammalian tissues. The broad therapeutic usage of these formulations in the form of Bhasmas is required to be ascertained for any adverse effects on the reproductive system.

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J Dent Res Dent Clin Dent Prospects. Summer 2018;12(3):153-158. doi: 10.15171/joddd.2018.024. Epub 2018 Sep 18.

Comparative evaluation of platelet rich plasma in socket healing and bone regeneration after surgical removal of impacted mandibular third molars

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PMID: 30443299 PMCID: PMC6231145 DOI: 10.15171/joddd.2018.024
Free PMC article

Abstract

Background. Surgical removal of mandibular third molars results in pain, swelling and bony defects, causing prolonged postoperative recovery. The growth factors present in platelet-rich plasma (PRP) can accelerate the healing, thereby shortening postoperative recovery period. This study was undertaken to evaluate the role of PRP in postoperative socket healing, pain, swelling and bone regeneration following surgical removal of impacted mandibular third molars. ***Methods.*** The present case-control study was conducted on 20 patients with identical bilateral mandibular third molar impaction. PRP was placed randomly on one side of 3rd molar extraction socket and the contralateral side was used as control. Evaluation of soft tissue healing, pain, swelling and radiologic bone density was carried out. ***Results.*** Soft tissue healing was better in the PRP compared to the control site. Immediate postoperative assessment of pain scores showed no significant difference between the two groups (Mann-Whitney U test). On the 7th day, pain scores were lower in case site compared to the control site. Measurement of swelling on the 1st, 3rd and 7th day showed statistically significant differences between the case and control sites ($P<0.0001$). Postoperative mean bone density at the 3rd and 6th postoperative months was significantly higher in the case site compared to the control site ($P=0.00001$). ***Conclusion.*** The results showed an improvement in wound healing and swelling and

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Histogenesis of Thyroid Gland in Dead Human Foetuses of Different Gestational Age

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Abstract

Introduction

In human beings the thyroid gland is one of the largest differentiated endocrine gland. The function of thyroid gland is to promote growth and development of the brain during foetal life and for the first few years of post-natal life.

Aim

To study the histological features of thyroid gland in human Foetuses of different gestational age.

Materials and Methods

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Pathological and Biochemical Evaluation of Toxic Effects of Repeated Administration of Jasada Bhasma (Zinc Ash Formulation) in Wistar Albino Rats

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Abstract

Introduction

Jasada Bhasma is the well known potent zinc formulation commonly used in 'Ayurveda' medicine system. Its extensive usage in the health care divtor is proved to be successful in the treatment of certain illness and is considered to be popular in its stability, lower dose, and its availability.

Aim

To evaluate the toxicity profile of Jasada Bhasma with primary emphasis on haematological, biochemical and histopathological changes in Wistar albino rats.

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Randomized Controlled Trial J Clin Pediatr Dent. 2018;42(2):109-113.
doi: 10.17796/1053-4628-42.2.5. Epub 2017 Oct 31.

Antibacterial Efficacy of Mouthwash Prepared from Pomegranate, Grape Seed and Guava Extracts against Oral Streptococci: An in Vivo Study

Shilpy Singla, Ritika Malhotra, Shashikiran Nd, Sudhanshu Saxena

PMID: 29087796 DOI: 10.17796/1053-4628-42.2.5

Abstract

Background: Pomegranate, Grape seed and Guava extracts have much been reviewed in Ayurveda and has been proven to have antibacterial action Aim: The objective of the study is to investigate and compare the mouthwash prepared from pomegranate, grape seed and guava extracts on salivary streptococci levels at the end of 48 hr and 7 days, of twice a day usage.

Study design: 40 school going children aged 8-10 yrs, randomly allocated into 4 groups (n=10 for experimental group) were asked to rinse with a) Mouthwash prepared from Pomegranate extract, 15 ml twice a day b) Mouthwash prepared from Grape seed extract, 15 ml twice a day, c) Mouthwash prepared from guava extract, 15 ml twice a day, d) Control- Distil water, twice a day. The oral streptococci colony forming units/ml (CFU/ml) was assessed by inoculating the salivary samples on blood agar media at the end of 48 hrs, and 7 days.

Results and conclusion: the aqueous extracts of the chosen herbal plants showed an acceptable antibacterial efficacy against oral streptococci.

Keywords: Pomegranate extract; antibacterial; grape seed extract; guava extract.

Related information

MedGen
PubChem Compound (MeSH Keyword)

LinkOut - more resources

Full Text Sources
Allen Press, Inc.
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Clinical Trial J Indian Soc Pedod Prev Dent. Apr-Jun 2018;36(2):191-197.
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A clinical trial comparing antimicrobial efficacy of "essential oil of *Ocimum sanctum*" with triple antibiotic paste as an intracanal medicament in primary molars

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Abstract

Objectives: To evaluate the aerobic and anaerobic antimicrobial efficacy of Ocimum Sanctum (Tulsi) essential oil and compare it with that of triple antibiotic paste (TAP) by collecting microbiological samples from the root canals of primary molars.

Study design: Forty children were selected for the study and were randomly divided into two groups of twenty each, namely, TAP group and O. sanctum group (basil). Six intracanal samples were collected for every patient, comprising of two each after access opening, irrigation and after 3 days of intracanal medicament placement. These samples were cultured in aerobic and anaerobic environment and later colony-forming units (CFUs) were counted and intragroup as well as intergroup comparison was done.

Results: Analysis of the results showed that there was a statistically significant reduction in CFUs after using essential oil of O. sanctum as an intracanal medicament. Saline use also leads to a statistically significant reduction in CFUs irrespective of the intracanal medicament used. TAP showed better antibiotic properties in comparison with that of O. sanctum.

Conclusion: Antibiotic use is often associated with the adverse effects and development of resistance due to injudicious use. O. sanctum can be used in cases of long-standing infection owing to its

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ANALGESIC ACTIVITY OF EXTRACTS OF *EULOPHIA OCHREATA* LINDL. AND *ZINGIBER CASSUMUNAR* ROXB. IN ANIMAL MODEL

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Keywords:

Analgesic activity, *Eulophia ochreata* Lindl., *Zingiber cassumunar* Roxb., Acetic acid induced writhing method, Hot plate method

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ABSTRACT: The present study was designed to investigate Analgesic activity of Chloroform extract and isolate 1 of *Eulophia ochreata* Lindl. and dicholoromethanolic extract and isolate 2 of *Zingiber cassumunar* Roxb. The analgesic activity was assessed by using acetic acid induced writhing method and hot plate method. In acetic acid induced writhing method the extracts and isolates of both plants was administered intraperitoneally at dose of 200 mg/kg to Swiss-albino mice. Chloroform extract (60.17%) Isolate 1(45.59%) and dichloromethanolic extract (55.48%) and isolate 2(48.07%) of *Eulophia ochreata* Lindl. and *Zingiber cassumunar* Roxb. respectively showed significant inhibition as in pain response as compared with standard aceclofenac (51.10%) at the dose of 10 mg/kg. In Hot plate method the extracts and isolates of both plants was administered orally at dose of 200 mg/kg to Swiss-albino mice. The chloroform extract and isolate 1 of *Eulophia ochreata* Lindl showed significant analgesic activity showing 55.84% and 66.25% when compared to the standard pentazocine(5mg/kg) as 50% at 60 min. Dichloromethanolic extract and isolate 2 of *Zingiber cassumunar* Roxb. showed significant analgesic activity showing 93.90% and 93.90% respectively when compared to the standard pentazocine (5mg/kg) as 79.26% at 90 min. Chloroform extract and isolate 1 showed peak effect at 60 min. Whereas dichlorormethanolic extract and isolate 2 showed peak effect at 90 min. The results obtained gives important information regarding use of these extracts as new potential source in the treatment of pain.

INTRODUCTION: Algesia (pain) is an ill-defined, unpleasant sensation, usually evoked by an external or internal noxious stimulus. An analgesic selectively relieves pain by acting in the CNS or on peripheral pain mechanisms, without significantly altering consciousness. So analgesic activity means capacity of a substance to neutralize the pain sensation [1].

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Pain is an important signal and primarily protective in nature which causes discomfort. Analgesics relieve pain as a symptom, without affecting its cause [2]. Analgesics are a class of drugs used to relieve pain. The pain relief induced by analgesics occurs either by blocking pain signals going to the brain or by interfering with the brain's interpretation of the signals, without producing anesthesia or loss of consciousness.

Inflammation is the response to injury of cells and body tissues through different factors such as infections, chemicals, and thermal and mechanical injuries [3]. Most of the anti-inflammatory drugs are potential inhibitors of cyclooxygenase (COX) pathway of arachidonic acid metabolism which

Original Article

Solid State Characterization and Tableting Studies of Ethanol Based Cocrystals of Fenofibrate with Nicotinamide

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ABSTRACT

Objectives: The pharmaceutical cocrystals can be defined as dissociable "API-excipient" molecular complexes or Co-crystals are solids that are crystalline materials composed of two or more molecules in the same crystal lattice as per U.S. Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research (CDER) April 2013. The objectives of present investigation were to formulate cocrystals of fenofibrate with nicotinamide by solution cocrystallization technique. **Methods:** The cocrystals were prepared by solution cocrystallization technique by using ethanol as a solvent and nicotinamide as a coformer in the ratio of 1:1 & 1:2. The prepared cocrystals were evaluate for, solid state characterization by FTIR, PXRD, Raman spectroscopy and evaluated for tableting performance. **Results:** The formation of cocrystals has been confirmed by FTIR and Raman spectroscopy. The formulations 1:1 and 1:2 ratios showed better flow properties. The order of tableting performance 1:2 ratio cocrystals > 1:1 ratio cocrystals > Recrystallized nicotinamide > Nicotinamide > > Recrystallized Fenofibrate > > Fenofibrate. **Conclusion:** The cocrystals showed superior tableting performance. This might be due to the co-crystals, contains hydrogen-bonded two dimensional flat slip planes which exhibits higher plasticity.

Key words: Cocrystals, Crystallizaton, Fenofibrate, Nicotinamide, Tableting

INTRODUCTION

Cocrystals can be defined as crystalline materials consist of two or more different components (or commonly called multi-component crystals). For the pharmaceutical cocrystals, one component is an active pharmaceutical ingredient and other components are called as coformers. Cocrystals have gained considerable interest in pharmaceutical research due to its ability to improve physicochemical characteristics of an API such as such as mechanical behavior, compressibility, solubility, dissolution rate, moisture stability, and bioavailability of drugs with their chemical structure unchanged.[1,2] In a short time span cocrystals are of the interest of the researchers because fast forward to 2015 and the first example of a pharmaceutical ionic cocrystal drug was approved by the US-FDA in accordance with its cocrystal guidance paper for drug substances in 2012 – 2013.[3] Entresto is a novel drug launched by Novartis for the treatment of chronic heart failure with the composition monosodium sacubitril, disodium valsartan, and water. Other examples include escitalopram oxalate,[4] a marketed drug in a crystal form that is composed of protonated escitalopram cations, water molecules, oxalate dianions, and diprotonated oxalic acid molecules. The anti-diabetes drug Ertugliflozin,[5] currently

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Published online 2018 January 23. Case Report

An Unusual Case of Nosocomial *Trichosporon asahii* Fungemia in a Patient with *Tuberculous meningitis*

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Abstract

Introduction: Invasive *Trichosporon* species have been documented mostly in neutropenic patients with underlying hematological malignancies with high mortality, and in critically ill patients exposed to multiple invasive medical procedures. This fungus has been recognized as the second or third most common agent of yeast fungemia.
Case Presentation: This study reports on invasive infection with *Trichosporon asahii* in a non-neutropenic patient with *Tuberculous meningitis*, who was a known case of diabetes mellitus type II.
Conclusions: Although fungemia due to *Trichosporon* species is an opportunistic pathogen in granulocytopenic patients, there is a steady increase in the number of such cases in non-neutropenic and non-hematological malignant patients. Thus, clinicians as well as microbiologists should be aware of such infections in critically ill patients as early diagnosis and timely management with appropriate antifungal drugs could decrease morbidity and mortality rate.

Keywords: Fungemia, Antifungal Agents, *Trichosporon asahii*

1. Introduction

Over the past 2 decades, invasive mycoses due to emerging fungal pathogens have increased significantly and are usually associated with high mortality rate (1). *Trichosporon* species is a basidiomycete that may be part of the normal flora in the gastrointestinal tract and transiently colonize the skin, nails, and respiratory tract in humans (2, 3). *Trichosporon* is a known cause of white piedra in immunocompetent hosts (4). Invasive infection has emerged as an opportunistic infection in immunocompromised hosts with hematological malignancies, solid organ tumors, burn patients, patients with human immunodeficiency virus (HIV) infection, end stage renal disease, and recipients of prosthetic heart valves (2). *Trichosporon asahii*, the most common of the *Trichosporon* species in systemic *Trichosporon* infection, is life threatening due to decreased susceptibility to amphotericin B, especially in severely granulocytopenic patients with underlying hematological malignancy (5, 6). This study reports on a case of fungemia due to *Trichosporon asahii* in a non-neutropenic patient with *Tuberculous meningitis* with diabetes mellitus.

2. Case Presentation

A 72-year-old female presented with fever, altered sensorium, and seizure (new onset) for 1 day was admitted to Krishna hospital, 1100 bedded private hospital attached to a medical college; krishna institute of medical sciences and research, Deemed University, Karad, India. The patient had severe headache, fatigue, and malaise one week prior to admission in the hospital. She was a known case of type 2 diabetes mellitus for the last 15 years and was on oral hypoglycemic drugs, which was uncontrolled. There was no history of vomiting. On general examination, the patient was averagely built, drowsy, with mild pallor, pulse rate of 96/minute, blood pressure of 130/80 mm Hg, and respiratory rate of 24/minute. Other vital parameters were within normal limits.

The patient was immediately shifted to the medical intensive care unit, intubated, and the intravenous catheter was inserted and anticonvulsant drugs, injection of monocef and vancomycin were initiated. Blood investigations were as follows: Hemoglobin (Hb) = 10.8 gram percentage, total white blood count (WBC) count = 9800 mm^3, platelet

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Leprosy of the hard palate: A rare case report

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ABSTRACT

Leprosy is a chronic granulomatous infection caused by *Mycobacterium leprae*, a bacillus that presents a peculiar tropism for the skin and peripheral nerves. Leprosy instigates various types of clinical presentation and exerts influence on the patient's immune response. The clinical gamut of leprosy ranges from the tuberculoid form (TT) to the disseminative and progressive lepromatous form (LL). Oral lesions are uncommon but, when present, occur in the lepromatous form and are broadly divided into nonspecific and specific lesions. In this article, we present a case of leprosy of the hard palate in a 25-year-old male. The case is been presented for its rarity.

Keywords: Lepromatous leprosy, leprosy, leprotic oral lesions, *Mycobacterium leprae*, palate

INTRODUCTION

Leprosy, also known as Hansen's disease is a chronic infectious granulomatous disease caused by *Mycobacterium leprae*, an acid-fast bacillus that has peculiar tropism for skin, mucous membranes of the nose, peripheral nerves,[1,2] and eyes.[3,4] It was discovered by the physician, Gerhard Armauer Hansen, in 1873.[1,2] The word Leprosy is derived from the Latin word "leprosus," which means "defilement."[1] Recently, the number of cases of leprosy has decreased histrionically, from 5.2 million cases in 1985–204,800 cases at the end of 2009 as a result felicitous detection and effective multi-drug treatments.[5,6]

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Review Article

The talk test—A costless tool for exercise prescription in Indian cardiac rehabilitation

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Abstract

Exercise-based cardiac rehabilitation (CR) plays a vital role in improving function and preventing mortality of cardiovascular disease (CVD) patients. Outpatient (Phase II and III) CR is almost nonexistent in India because of several reasons such as time, cost, distance, education level, scarcity of resources and so forth. Cardiologists or cardiac surgeons can directly advise patients and their family members to do an optimal dose of exercise in low-resource settings that is

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Case Reports JACC Clin Electrophysiol. 2018 Nov;4(11):1484-1485.
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Split Intracardiac Potentials: Marker of Cardiac Inflammation

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Keywords: ICD; cardiac inflammation; split potentials.

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Effects of alirocumab on cardiovascular and metabolic outcomes after acute coronary syndrome in patients with or without diabetes: a prespecified analysis of the ODYSSEY OUTCOMES randomised controlled trial

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Abstract

Background: After acute coronary syndrome, diabetes conveys an excess risk of ischaemic cardiovascular events. A reduction in mean LDL cholesterol to 1·4-1·8 mmol/L with ezetimibe or statins reduces cardiovascular events in patients with an acute coronary syndrome and diabetes. However, the efficacy and safety of further reduction in LDL cholesterol with an inhibitor of proprotein

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Development and Validation of High-Performance Liquid Chromatographic Method for Quantitative Estimation of Glycyrrhetinic Acid in Microemulsion

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SUMMARY. **The aim of this study was to develop a simple, accurate, precise, and reproducible reverse-phase high-performance liquid chromatography method for the determination of glycyrrhetinic acid in microemulsion. The chromatographic separation was achieved on a chromatographic column HiQ Sil C_8 (250 × 4.6 mm, 5 μm), for separation at a flow rate of 1 mL/min using 10 mM KH_2PO_4 buffer: Acetonitrile (5:95 v/v) as mobile phase and detection at 250 nm. The retention time was found to be 3.6 min. Method was linear over the range of 5-30 μg/mL with regression coefficient 0.9983. The developed method can be applied for routine quality control analysis of glycyrrhetinic acid in microemulsion formulation. The method was validated as per the guideline of International Conference on Harmonization (ICH, Q2 [R1]). Hence, attempts were made to develop a simple, rapid, precise, and accurate reverse-phase chromatographic method for estimation of glycyrrhetinic acid in microemulsion formulation.**

RESUMEN. El objetivo de este estudio fue desarrollar un método de cromatografía líquida de alto rendimiento de fase inversa, simple, preciso y reproducible para la determinación del ácido glicirretínico en microemulsión. La separación cromatográfica se logró en una columna cromatográfica HiQ Sil C_8 (250 × 4,6 mm, 5 μm), para la separación a un caudal de 1 mL/min utilizando tampón KH_2PO_4 10 mM:acetonitrilo (5:95 v/v) como fase móvil y detección a 250 nm. El tiempo de retención fue de 3.6 min. El método fue lineal en el rango de 5-30 μg/mL con un coeficiente de regresión de 0.9983. El método desarrollado puede aplicarse para el análisis de control de calidad de rutina del ácido glicirretínico en formulación de microemulsión. El método se validó según las pautas de la Conferencia Internacional sobre Armonización (ICH, Q2 [R1]). De este modo se ha desarrollado un método cromatográfico de fase inversa simple, rápido, preciso y seguro para la estimación del ácido glicirretínico en formulación de microemulsión.

KEY WORDS: Glycyrrhetinic acid, formulations, high-performance liquid chromatography, validation

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Blue vitiligo: A dermoscopic perspective

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Solitary Mucus Cast at the Wharton Duct Orifice

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Dermoscopy of Eumycotic Mycetoma: A Case Report

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Keywords: dermoscopy; eumycotic mycetoma; patterns; yellow globules.

Figures

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Endogenous ochronosis: a dermoscopic view

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Randomized Controlled Trial Trials. 2019 Apr 11;20(1):214. doi: 10.1186/s13063-019-3327-2.

Safety and efficacy of curcumin versus diclofenac in knee osteoarthritis: a randomized open-label parallel-arm study

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Abstract

Background: The purpose of this study was to compare the efficacy and safety of curcumin with those of diclofenac in the treatment of knee osteoarthritis (OA).

Methods: In this randomized, open-label, parallel, active controlled clinical study, 139 patients with knee OA were randomly assigned to receive either a curcumin 500-mg (BCM-95®) capsule three times daily or a diclofenac 50-mg tablet two times daily for 28 days. Patients underwent assessment at baseline and days 7, 14, and 28. The main outcome measure was severity of pain using visual analogue scale score at days 14 and 28. Knee Injury and Osteoarthritis Outcome Score (KOOS) (at days 14 and 28), anti-flatulent effect (at day 7), anti-ulcer effect, weight-lowering effect, and patient's and physician's global assessment of therapy at day 28 were included as secondary outcome measures. Safety after treatment was evaluated by recording adverse events and laboratory investigation.

Results: At days 14 and 28, patients receiving curcumin showed similar improvement in severity of pain and KOOS scale when compared with diclofenac, and the difference was not statistically significant. At day 7, the patients who received curcumin experienced a significantly greater reduction in the number of episodes of flatulence compared with diclofenac ($P < 0.01$). At day 28, a weight-

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Original article

Comparative Effects of Cimetidine on Hypoglycaemic Activity of Glibenclamide in Rabbits

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Abstract:

Background: Multiple drug therapy is common in Type 2 diabetes mellitus treatment. Aim and Objectives: To study the effect of Cimetidine (H_2 antagonist) in combination with Glibenclamide on the blood sugar level in rabbits. The objectives of present study were to check drug-drug interaction for avoiding multi-drug therapy in diabetes.

Material and Methods: Six albino rabbits were taken for the study. Glibenclamide was administrated to each rabbit as a single drug therapy on day 1 while was co-administrated with Cimetidine to each rabbit as a combinational drug therapy on day 7. Cimetidine was administrated to each rabbit from day 2 to day 6 as a single drug therapy. Blood sugar levels were estimated on day 1 and on day 7 at 0, 1, 2, 4, and 6 hours.

Results: When compared on day 1 and day 7, no significant reduction was observed in blood sugar level at 0 hour. The reduction of blood sugar levels at 1 and 2 hours were extremely significant ($P< 0.001$)while highly significant at 4 and 6 hours after co-administration of Glibenclamide and Cimetidine.

Conclusion: Cimetidine when co-administered with glibenclamide significantly increases the hypoglycaemic action of glibenclamide.

Keywords: Cimetidine, Glibenclamide, Hypoglycaemic

Introduction:

Multiple drug therapy is common in Type2 diabetes mellitus treatment. Sulphonylurea or biguanides are two groups of drugs, which are used for treatment of type-2 diabetes mellitus. The simultaneous use of H_2 antagonist with sulphonylurea has been reported in type-2 diabetic patient also suffering from gastric ulcer [1]. Therefore in such condition use of several drugs is often essential to obtain a desired therapeutic effect or to treat the coexisting diseases.

Cimetidine is well known to interact with a number of drugs concurrently administered by inhibiting hepatic microsomal enzymes [2]. Adverse effects due to interaction of Cimetidine with Warfarin [3], Phenytoin [4], Theophylline [5], Propranolol [6] have been reported. Drug interaction with sulphonylurea group of oral hypoglycaemic agents may have important therapeutic consequences as hypoglycaemia

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Hyperglycemia-induced seizures - Understanding the clinico- radiological association

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Abstract

Objectives: To highlight the typical magnetic resonance imaging (MRI) findings in hyperglycemia-induced seizures and compare the results with similar previous studies with a brief mention of pathophysiological mechanisms.

Materials and methods: This retrospective study included medical and imaging records of six consecutive patients with hyperglycemia-induced seizures. The data analysis included a clinical presentation and biochemical parameters at admission. The MRI sequences were evaluated for region involved, presence of subcortical T2 hypo-intensity, cortical hyper-intensity, and restricted diffusion. Similar previous studies from the National Library of Medicine (NLM) were analyzed and compared with our study.

Results: Twenty-four patients were included from four studies in previous literature for comparison. In our study, on imaging, posterior cerebral region was predominantly involved, with parietal involvement in 83.3%, followed by occipital, frontal, and temporal involvement in 33.3% patients compared with occipital in 58.3%, parietal in 45.8%, and frontal and temporal in 16.6% of patients in previous literature. The subcortical T2 hypo-intensity was present in 83.3% of the patients, cortical

RESEARCH ARTICLE

Amorphous Mixtures of Albendazole with Carboxylic Acids By Cogrinding Technique: Solid State Characterizations and *In Vitro* Efficacy Study

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ABSTRACT

Purpose: To improve the physicochemical properties of poorly aqueous soluble albendazole by formulating its amorphous mixtures by different techniques. **Methods:** cogrind amorphous mixtures were successfully formulated with different carboxylic acids like citric acid, benzoic acid, salicylic acid and succinic acid in equimolar ratios by grinding and solvent drop grinding technique without formation of cocrystals. The physicochemical properties of pure albendazole and corresponding cogrind mixtures were assessed in terms of melting point, drug content, saturation solubility and dissolution studies, Infrared spectroscopy (IR), X-ray powder diffractometry (XRPD) and Differential scanning colorimetry (DSC). **Results:** The results indicated a marked improvement in flow properties and saturation solubility of amorphous mixtures. Further, in case of dissolution experiments, the amorphous mixtures showed a significant enhancement in the dissolution profiles as compared to pure albendazole. In-vitro anthelmintic as well as in In vitro antifungal activity was also improved. It could be concluded that better improvement of physicochemical properties of albendazole could be possible with salicylic acid and citric acid using cogrinding technique. **Conclusion:** It is possible to formulate amorphous mixtures of albendazole with different carboxylic acids without forming cocrystals still strong agreement to form cocrystals by solubility parameters, structural features.

Keywords: Albendazole, Amorphous, Dissolution rate, Mxtures, ΔpKa.

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INTRODUCTION

In drug discovery, solubility information is widely used to enhance the quality of drug candidates to diagnose early solubility issues of a new chemical entity and further modifications. In drug development, the solubility of the active pharmaceutical ingredient (API) is a crucial attribute with respect to selecting the dosage forms for clinical trials, designing experiments to identify potential salt forms, cocrystal forms, polymorphic forms, solvates, and hydrates, developing analytical procedures and aiding drug manufacturing. The solubility of new chemical entities (NCE) is emerging as a significant issue in drug discovery and development as it affects many aspects of drug discovery and development, including in vitro/in vivo assay quality, formulation, human PK, clinical trial design and biowaivers. Various strategies have been developed to overcome solubility issues using medicinal chemistry approaches and formulation techniques throughout the pharmaceutical industry to de-risk the solubility impact on the drug candidate.[1]

Molecular complexation is of two type's inclusion complexes, and coordination assisted lattice-type complexes former depends on stereochemical host, and guest interaction and latter depends on noncovalent interaction between drug and coformer and their complementary functional groups. Coordination type of molecular complexes is also known as molecular crystal, and it comes under the multicomponent system, includes the formation of hydrates, solvates, salts,

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Physiological parameters for Prognosis in Abdominal Sepsis (PIPAS) Study: a WSES observational study

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Original Research Article

Electrocardiographic Changes in Hypertensive Crisis in a Tertiary Care Hospital

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ABSTRACT

BACKGROUND

Cardiovascular disorders are the leading causes of disability and death worldwide, and a great majority of Cardiovascular Disorders are associated with dyslipidemia. Worldwide, there is broad variation in serum lipid profile levels among different population groups. Increased serum levels of total cholesterol, triglycerides, low density lipoproteins and decreased high density lipoproteins are known to be major risk factors for cardiovascular disorders. The present study was conducted to assess the lipid levels among cases of accelerated hypertension presenting to a tertiary healthcare institute.

METHODS

The present study was a cross sectional observational study done on 96 patients who presented with hypertensive emergencies. They were admitted under Department of Medicine, KIMS, Karad, from August 2018 to December 2018. On admission, detailed history was taken, and complete clinical examination was done. It was a hospital based cross sectional study.

RESULTS

Serum levels of TC, TG, HDL and LDL in hypertensives were 182±3.4, 143.62±6.3, 49.68 and 95.83±7.8 mg/dL, respectively.

CONCLUSIONS

Our results suggest that elevated BP may predict certain disturbances in lipoprotein metabolism.

KEYWORDS

Accelerated Hypertension, Hypertensive Crisis, Lipid Profile, Blood Pressure, Total Cholesterol, Triglycerides, HDL, LDL

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A Community based Cross Sectional Study to Assess the Association between Indices of Obesity and Hypertension

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Abstract

Background: Hypertension is associated with a reduced quality of life and also an increased risk for various cardiovascular, renal, neurological and multiple systemic complications. **Objectives:** To determine the prevalence of hypertension and to find out the association between anthropometric indices and hypertension. **Material and Method:** A cross-sectional survey was conducted in 1509 individuals ≥30 years in the rural population of Kasegaon village, Maharashtra by a house to house survey during December 2015 to May 2016. Blood pressure (BP), Waist Circumference (WC), Waist Hip Ratio (WHR) and Body Mass Index (BMI) were measured according to WHO guidelines. Data was analyzed in SPSS version 20 using chi-square test and odds ratio. **Results:** The prevalence of hypertension in our study was 10.74%. An increase in BMI, WC, WHR were found as risk factors for hypertension. 6.8% (n=7) were hypertensives among those with underweight, 7.5% (n=75) of the population with a normal BMI were found to be hypertensive, 13.0% (n=42) were hypertensives among the overweight category, and 19.5% (n=16) were hypertensive among the obese category. The prevalence of hypertension among those having normal WC was found to be 7.3% (n=88), 12.7% (n=18) were hypertensive among those with WC in the increased risk category and the 21.4% (n=34) were hypertensive among those who had a substantially increased risk WC. Among those who were in less risk WHR category, the prevalence of hypertension were 7.2% (n=88) and 18.2 % (n=52) individuals were hypertensives among the substantially increased risk WHR category. **Conclusion:** The importance and need of weight reduction by increasing physical activity, lifestyle modification should be incorporated into the community to control this problem.

Keywords: *Hypertension, Body Mass Index, Waist Circumference, Waist Hip Ratio.*

Introduction

The wealthy and resource constrained countries are now facing the same health issues the shift of communicable diseases to Non- Communicable Diseases(NCDs) such as cardiovascular disease, cancer, diabetes and chronic lung diseases, as the world's leading cause of mortality.[1]

According to the World Health Organization (WHO) estimates in 2015,- global deaths due to non-communicable diseases (NCDs) were 40 million, accounting for 70% of the overall total of 56 million deaths. Majority of such deaths were caused by the four main NCDs: namely: cardiovascular disease, 17.7 million deaths (accounting for 45% of all NCD deaths; cancer, 8.8 million deaths (22%); chronic respiratory disease, 3.9 million deaths (10%); and diabetes, 1.6 million deaths (4%)(2,3).

One of the key risk factors for cardiovascular disease is Hypertension (HTN) which already affects one billion people worldwide, leading to heart attacks and strokes. Researchers have estimated that raised blood pressure currently kills 9 million people every year[1]. Hypertension is ranked as the third most important risk factor for attributable disease burden

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Association between Urinary Cotinine Levels and Buccal Mucosal Micronuclei Cells of Smokeless Tobacco Chewers Attending a Tertiary Care District Hospital

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Abstract

Introduction: Oral squamous cell carcinoma encompasses at least 90% of all oral malignancies. It is sixth most common malignancy and the major cause of cancer morbidity and mortality worldwide. Early detection of a premalignant oral lesion would improve the survival to a greater extent. Tobacco lays an enormous effect of disease for health, economic, social and environment issues. Cross sectional study was done at tertiary care hospital to find association between urinary cotinine levels and buccal mucosal micronuclei cells of smokeless tobacco chewers.

Method: Study comprised of 300 Smokeless Tobacco chewers (STC) and 300 Non tobacco chewers (NTC). Physical examination and Anthropometric parameters were recorded. Fasting urine samples collected for extraction of cotinine. Buccal smears were prepared for exfoliated cells. Slides were stained by Papanicolaou stain and micronuclei (MN) cells was examined by using 100X, 400X magnification as per the Tolbert et al criteria.

Results: Mean Urinary Cotinine in STC was enhanced as compared to NTC. The MN cells were also increased in STC as compared to NTC and statistically highly significant (Mean SD of STC 21.30±10.55, 95% CI : 20.11 to 22.49 , NTC Mean SD 3.74±3.43, 95 % CI : 3.35 to 4.12). The MN cells of STC showed strong positive association and statistically highly significant correlation with urinary cotinine levels (r= 0.692, p=<0.0001).

Conclusions: The present study establishes link between rise in exfoliated buccal MN and determination of urinary cotinine levels which is a biomarker of genotoxicity and epithelial carcinogenic progression.

Key words: *Smokeless tobacco chewers, Non tobacco chewers, Micronuclei, Cotinine*

Introduction

Oral cancer is one of the commonest causes of disease and death rate nowadays. In developing countries, both smokeless tobacco chewing and smoking have cancerous causing behavior that contributes to increasing global burden of oral cancer. The World Health Organization figured out that proportion of deaths that result due to tobacco-related diseases would rise in India from 1.4% of all in 1990 to 13.3% of all deaths in 2020[1,2].

Tobacco lays an enormous effect of disease for contrary health, economic, social and environment issues. The tobacco epidemic is among the largest public health threat at present situation which almost kills six million peoples per year. Among mortality of ten adults

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Effect of lansoprazole on acute and sub-acute models of inflammation in male Wistar rats: an experimental study

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Abstract

Aims & Objective: *To evaluate effect of lansoprazole on acute and sub-acute models of inflammation in rats.*

Materials and Methods: *The study was carried out in two models of inflammation viz: carrageenan induced rat paw edema and foreign body induced granuloma. Animals were divided into three groups. Control group received 0.5ml of 1% gum acacia suspension while test groups received lansoprazole and aspirin. The rat paw volume was measured with the help of a mercury plethysmograph at regular intervals and percentage inhibition of edema was calculated. In sub-acute model of inflammation, two sterile cotton pellets and two sterile grass piths were implanted subcutaneously in the axilla and groin. The treatment was started on the day of implantation and was repeated every twenty-four hours, regularly, for ten days. On eleventh day, rats were sacrificed and mean granuloma dry weight of cotton pellets for various groups was calculated. The sections of grass piths were sent for histopathological studies.*

Results: *In the present study, lansoprazole showed significant anti-inflammatory effect in acute as well as sub-acute models of inflammation when compared to control.*

Conclusion: *Lansoprazole showed anti-inflammatory effect in the current study.*

Key words: *Lansoprazole, aspirin, inflammation, Carrageenan, PPI, foreign body granuloma.*

Introduction

The ability of organisms to get rid of damaged or necrotic tissues is essential for their survival. Host response to noxious stimuli in the form of inflammation accomplishes these goals. Inflammation is a complex reaction in tissues that consists mainly of vascular and cellular response. The inflammatory response is closely interwined with the process of repair. During repair, the injured tissue is replaced through regeneration of native parenchymal cells or by filling of the defect with fibrous tissue (scarring) or most commonly by a combination of these two processes.[1]

Many steroidal and non-steroidal anti-inflammatory drugs (NSAIDs) are in clinical use to reduce inflammation. Also, some other drugs like penicillamine,[2] allopurinol etc.,[2] have been in clinical use to treat inflammatory conditions like rheumatoid arthritis, gout etc. Some adrenergic agonists,[3] calcium channel blockers[4], calcium[5], angiotensin receptor blockers[6,7], dipeptidyl peptidase 4 inhibitors[8], statins[9,10,11] and sulfamethizole[12] have also been reported to possess anti-inflammatory activity in experimental studies though they are not routinely used in the treatment of inflammatory disorders. But, these drugs are not completely devoid of adverse effects.[2] Hence the search for safer and better anti-inflammatory agents continues.

Gastro-oesophageal reflux disease (GERD) and peptic ulcer disease (PUD) are among the most prevalent gastro-intestinal inflammatory disorders. Population based studies show that up to 15% of individuals have heartburn or regurgitation at least once a week and 7% have daily.[13] Untreated GERD may cause erosive or non-erosive oesophagitis. Erosive oesophagitis may lead to peptic stricture due to fibrosis or intestinal metaplasia (Barrett's oesophagus) which is risk factor for oesophageal adenocarcinoma. Reflux may also cause peptic ulcer formation in oesophagus.

Histopathological features of GERD and peptic ulcer show neutrophils with other inflammatory infiltrates and granulation tis-

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Research Article

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Neusilin based liquisolid compacts of albendazole: Design, development, characterization and *in vitro* anthelmintic activity

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ABSTRACT: The present investigation deals with enhancement of dissolution rate of high dose drug albendazole (ABZ) using liquisolid compacts. Study of precompression characteristics, influence of excipients on drug release characteristics and to compare drug release profile of the formulated liquisolid compacts with the directly compressible laboratory made formulation. Liquisolid compacts were prepared by using three by twofactorial designs and evaluated for differential scanning calorimetry (DSC), powder X-ray diffraction (PXRD), *in vitro* nthelmintic, *in vitro* antifungal study and *in vitro* dissolution study. There was improvement in the dissolution rate and solubility was attributed to decreased melting point and crystallinity of albendazole. *In vitro* anthelmintic and antifungal activities of neusilin based liquisolid compacts were more than pure albendazole. The drug content of liquisolid compacts was not affected when stored at room temperature for a period of 3 months. This study also provided evidence that it is possible to load high amounts of drug into liquisolid compacts due to the neusilin allows higher liquid adsorption capacities. Neusilin based technique is useful for the preparation of liquisolid compacts of high dose drug like albendazole with enhancement in dissolution rate

KEYWORDS: Albendazole; dissolution; liquisolid; compacts.

1. INTRODUCTION

There are various routes of administration has been evaluated for new drug entities, the most popular remains the oral route due to the greater flexibility in design and high patient compliance. Because of greater stability, accuracy in dose, easy of production, formulation in the form of tablets is the preferred oral dosage form [1]. The drug must be presents in solution form for absorption through gastrointestinal tract (GIT) when given orally. In the case of poorly soluble drugs, dissolution is the rate-limiting step in absorption process. Generally, compounds with aqueous solubility less than 100 µg/mL shows dissolution rate limited absorption and erratic and/or incomplete absorption from the gastrointestinal tract of animals and humans [2].

Different methods are employed to improve the dissolution characteristics of poorly water soluble drugs including various formulation approaches to enhance solubility of drugs e.g. use of solvent mixtures, cyclodextrins, particle engineering and lipid based approaches. The principle limitation of all these approaches is that the drug needs to possess certain physicochemical properties or to 'fit' to the solubilizing principle (e.g. having the right molecular size to fit into the cyclodextrin ring). For many decades by reducing the particle size to increase the dissolution rate of poorly water-soluble drugs is the most popular practice. Micronization of sparingly or poorly soluble drugs is by no means a guarantee of better dissolution and absorption. A hydrophobic powder with small particle size leads to aggregation, making it difficult to disperse. The particles float on the dissolution medium because of entrapped air. It is difficult to remove or wet these particles. All these effects, in fact, reduce the rate of dissolution consequently; the next step was taken to move from

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FORMULATION AND IN VITRO, IN VIVO EVALUATION OF PRONIOSOMAL GEL OF NEOMYCIN SULPHATE

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ABSTRACT

Objective: The objectives of present investigation were to prepare and evaluate proniosomes of neomycin sulphate (NS) by coacervation phase separation method by using sorbitan monostearate (span 60) and lecithin as a surfactant to increase the penetration through the skin and study the effect of concentration of the same.

Methods: Proniosomes of neomycin sulphate (NS) were prepared by coacervation phase separation method by using span 60 and lecithin. The effect of concentration of span 60 and lecithin was studied by factorial design. The prepared proniosomes were converted to gel by using carbopol as a gelling agent. The prepared formulations were evaluated for entrapment efficiency, *in vitro* drug diffusion, *in vitro* antibacterial activity and *in vivo* skin irritation test etc.

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Pattern of Poisoning Cases at a Tertiary Health Care Centre– A Cross Sectional Study.

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ABSTRACT

Introduction and Objectives: Poisons are responsible for more than 3 million cases worldwide annually, India being among the highest contributor. Thus, this study identifies burden of poisoning cases at regional level and helps formulate preventive measures.

Materials and Method: Prospective, hospital based cross sectional study conducted at KLE's Dr Prabhakar Kore Hospital and MRC, with autopsy unit, Belagavi - for 1 year. Data collected using pretested proforma and analyzed.

Results: Total 306 poisoning cases, out of which, 35 cases (11.4%) expired. Highest being pesticide poisoning – 150 cases (49%) and 20 deaths (57.2%). Age group 21 - 30 years was most commonly involved. Male : female ratio - 1.51 : 1 for total cases and 1.69 : 1 for total deaths. Most cases and deaths were suicidal - 67.1% and 80% respectively, common cause being alleged family problems (34.1%). Majority cases were farmers (24.8%). Mortality high in cases coming within 5 hours (19.3%). Majority cases belonged to grade 1 (36.3%) Poison severity score.

Conclusion: Poison management centres should be started at rural places, proper education and mental strength should be imparted to the population to curb intentional cases.

Keywords: *Poison, Poison Severity Score, Pesticide poisoning, Belagavi.*

INTRODUCTION

Poisoning cases, both accidental and intentional (homicidal/suicidal), are a significant contributor to mortality and morbidity throughout the world[1].

Poisoning cases and deaths due to poisoning are on a rise over the years despite of the advanced knowledge and newer techniques available for management. According to WHO, more than 3 million acute poisoning cases with more than 2,20,000 deaths occur annually worldwide. Of these cases, 90% of fatal poisoning occur in developing countries particularly among agricultural workers[1,2].

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According to an estimate, number of poisoning cases in India was 39254 in 1991 and risen to an alarming level of 60809 cases in 1995[3], making our country one of the highest incidence of poisoning in the world. It is estimated that more than 50,000 die every year from toxic exposure[4].

Mortality from poisoning varies from country to country depending upon type of poisons encountered, extent of awareness about poisoning, availability of treatment facilities and presence or absence of qualified personnel. In developed countries rate of mortality from poisoning is as low as 1–2%, but in India it varies from shocking 15–35%[5].

In spite of such alarming levels of mortality and morbidity, no statistics are available in India regarding incidence of poisoning at home or at hospital. This may be due to lack of data at central level as most of the cases are not reported. The known cases are just as the tip of the iceberg.

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Evaluation of Sensorineural Hearing Loss as a Consequence of Conventional Radiotherapy in Head and Neck Cancer

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Abstract

Introduction

Sensorineural Hearing Loss (SNHL) is potentially disabling and yet overlooked, while subjecting patients of head and neck cancer to conventional ionising radiation at most tertiary care centers. The demand for cancer care, along with the rising cost of therapy using newer treatment technologies such as intensity modulated radiotherapy is a concern to the health care system in India. Cochlea often remains in the field of radiation and hence need to be shielded to prevent development of SNHL.

Aim

To assess role of radiotherapy causing sensorineural hearing loss in patients of head and neck cancer.

Materials and Methods

A prospective study was initiated on 110 cases with normal hearing requiring Radiotherapy (RT), for biopsy proven tumours of head and neck in the Department of Otorhinolaryngology. All cases were treated with external beam conventional radiotherapy using telecobalt machine and a shielding collimator. Out of 110 cases treated by either curative or palliative dose of RT which was around 60 Gray (Gy) and 30 Gray (Gy) respectively, 16 did not come for follow-up. The study was concluded with remaining 94 cases who completed the follow-up. Hearing acuity was assessed using 500, 1000 and 2000 Hz frequency before start of radiotherapy, immediately following radiotherapy and at first follow-up after six months in all cases. Quantification of the degree of SNHL was done using one-way

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Dermatoscopy in Actinomycetoma: An Observation

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2 Department of Dermatology, Krishna Institute of Medical Sciences, Karad, Maharashtra, India.

PMID: 31149586 PMCID: PMC6536083 DOI: 10.4103/idoj.IDOJ_268_18
Free PMC article

No abstract available

Figures

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GEOGRAPHICAL INDICATIONS

क्रमांक : 022106367
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	323819
आवेदन सं. / Application No.	:	623/MUM/2010
फाइल करने की तारीख / Date of Filing	:	09/03/2010
पेटेंटी / Patentee	:	KRISHNA INSTITUTE OF MEDICAL SCIENCES

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SIMULATION TRAINING DEVICE FOR ASSESSMENT OF THE CERVICAL DILATATION नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 9th day of March 2010 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SIMULATION TRAINING DEVICE FOR ASSESSMENT OF THE CERVICAL DILATATION as disclosed in the above mentioned application for the term of 20 years from the 9th day of March 2010 in accordance with the provisions of the Patents Act,1970.

THE PATENT OFFICE GOVT. OF INDIA

अनुदान की तारीख : 28/10/2019
Date of Grant :

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, **9th day of March 2012**को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।

Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on **9th day of March 2012** and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
पेटेन्ट/PATENTS | डिजाईन्स/DESIGNS |
व्यापार चिह्न/TRADE MARKS | भौगोलिक
उपदर्शन/GEOGRAPHICAL INDICATIONS

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पेटेन्ट कार्यालय /THE PATENT OFFICE
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वेबसाइट /Website:http://ipindia.nic.in

सं. \ No. 623/MUM/2010

दिनांक \ Dated the 28/10/2019

सेवा मे, \ To :

Address of Service:- Lex-Regia, 246, Gandhi Nagar, Nagpur-440 010, Maharashtra, India"
Email Id:- advgnbhave@gmail.com,mailbox@lexregia.in,royak777@gmail.com

विषय :- पेटेंट आवेदन संख्या 623/MUM/2010 के संबध मे अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर मे प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 623/MUM/2010

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व 08/08/2019 को हुई सुनवाई] के उपरांत एतद्द्वारा पेटेंट अनुदान किया जाता है तथा पेटेंट अनुदान की प्रविष्टि 28/10/2019 को पेटेंट रजिस्टर मे कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on 08/08/2019] a patent is hereby granted and recorded in the Register of Patents on the 28/10/2019. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 323819
आवेदक का नाम \ Name Of Applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES
पेटेंट दिनांक \ Date of Patent	: 09/03/2010
पूर्विक्ता तिथि \ Priority Date	: 09/03/2010
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filing date of Request for examination	: 07/03/2011
शीर्षक \ Title	: SIMULATION TRAINING DEVICE FOR ASSESSMENT OF THE CERVICAL DILATATION
दावों की संख्या \ Number of claims	: 1 Claim filed on 21/09/2019

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल मे किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय मे नवीकरण शुल्क जमा किया जाना चाहिए।
The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act,1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Santosh Mehtry
(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वेबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।
For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in
2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

FORM 1 THE PATENTS ACT 1970 (39 of 1970) & The Patents Rules, 2003 **APPLICATION FOR GRANT OF PATENT** (See section 7, 54&135 and rule 20(1))	(FOR OFFICE USE ONLY) Application No: 623/MUM/2010 Filing Date: 9/3/2010 Amount of Fee Paid CBR No: Signature

1. APPLICANT

Name	Nationality	Address
KRISHNA INSTITUTE OF MEDICAL SCIENCES	Deemed to be University declared U/s 3 of UGC Act, 1956 vide notification no. F.9-15/2001-U-3 of the Ministry of Human Resource Development, Govt. of India	KRISHNA INSTITUTE OF MEDICAL SCIENCES NEAR DHEBEWADI ROAD, MALKARPUR, KARAD, MAHARASHTRA, INDIA

2. INVENTORS

Name	Nationality	Address
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2. ARVIND KANHERE	Indian	759/25, DECCAN GYMKHANA, PUNE 411 004, MAHARASHTRA, INDIA
3. ADITYA KRISHNA PRATINIDHI	Indian	64, PANMALA, PUNE 411 030, MAHARASHTRA, INDIA

3. TITLE OF THE INVENTION

"SIMULATION TRAINING DEVICE FOR ASSESSMENT OF THE CERVICAL DILATATION"

4. ADDRESS FOR CORRESPONDENCE OF APPLICANT IN INDIA Mrs. Gauri N. Bhave Patent Agent IN/PA 520, "Chhaya", Plot No. 42, Sangam Society, Padmavati,	Telephone no. 020 24221047 Fax No. Mobile no. 9422565625 Email. advgnbhave@rediffmail.com advgnbhave@gmail.com

623 | मुंबई MUM. | 2010

Pune- Satara Road, Pune 411037. Maharashtra India	

5. PRIORITY PARTICULARS OF THE APPLICATION (S) FILED IN THE CONVENTION COUNTRY:

Country	App. No	Filing Date	Name of the Applicant	Title of the invention
NA	NA	NA	NA	NA

6. PARTICULARS FOR FILING PATENT COOPERATION TREATY NATIONAL PHASE:

International Application Number	International filing date as allotted by the Receiving Office
NA	NA

7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) application no.	Date of filing of Original (first) application
NA	NA

8. PARTCULARS FOR FILING PATENT OF ADDITION

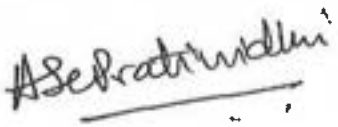
Main application/patent no.	Date of filing of main application
NA	NA

9. DECLARATIONS:

(i) Declaration by the inventors:

We, the applicant the above named inventor am the true & first inventor for this invention and declare that the applicant herein is my assignee or legal representative

(a) Date:

(b) Signature: 

(c) Names: DR. ASHA KRISHNA PRATINIDHI

(a) Date:

(b) Signature: 

(c) Names: ARVIND KANHERE

(a) Date:

(b) Signature:

(c) Names: ADITYA KRISHNA PRATINIDHI

(ii)Declaration by the applicant in the convention country:
I, the applicants in the convention country declare the applicant herein is my assignee or legal representative

(a) Date:

(b) Signature:

(c) Name of the signatory: For KRISHNA INSTITUTE OF MEDICAL SCIENCES
KRISHNA INSTITUTE OF MEDICAL SCIENCES, NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, MAHARASHTRA, INDIA

(iii) Declaration by the applicants:
I/ We, the applicant(s) hereby declare that:-

(a) *I'm in possession of the above mentioned invention.*
(b) The complete specification relation to the invention is filled with this application.
(c) The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by us before the grant of patent to me.
(d) There is no lawful ground of objection to grant of patent to me.
(e) I'm the assignee or legal representative of true & first inventor.
(f) The application or each of the applications , particulars of which are given in para 5 was the first application in convention country/countries in respect of our invention
(g) I claim the priority from the above mentioned applications filed in convention countries and state that no application for protection in respect of invention had been made in a convention country before that date by us or by any person from which I derive the title
(h) My application in India is based on International Application under Patent Cooperation Treaty (PCT) as *mentioned in para 6*
(i) The application is divided out of my application particulars of which are given in para 7 & pray that this application may be treated as deemed to have been filed on ___under section 16 of the Act.
(j) The said invention is in improvement or modification of the invention particulars of which are given in para 8.

10. Following are the attachments with the application:
(a) Complete Specification
(b) Complete Specification (2 copies), No. of pages 10, No. of claims 5
(c) Drawings (2 copies), No. of sheets 5
(d) Statement and undertaking on Form 3
(e) Declaration as to Inventorship on Form 5
(e) Power of authority

(f) Fee Rs. 4000/- (in words rupees four thousand only) in Cheque bearing No. dated on .

I hereby declare that to my knowledge, information and belief the matters stated herein are correct and I request that a patent may be granted to me for the said invention.

Dated this 9th day of February 2010

For KRISHNA INSTITUTE OF MEDICAL SCIENCES

REGISTRAR
KRISHNA INSTITUTE OF MEDICAL SCIENCES
UNIVERSITY
KARAD

To
The Controller of Patents
The Patent Office
At Mumbai 400 037

INTELLECTUAL PROPERTY INDIA
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सत्यमेव जयते

क्रमांक : 022106627
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	325699
आवेदन सं. / Application No.	:	216/MUM/2011
फाइल करने की तारीख / Date of Filing	:	24/01/2011
पेटेंटी / Patentee	:	KRISHNA INSTITUTE OF MEDICAL SCIENCES

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित ENDOCERVICAL & ECTOCERVICAL SPATULA FOR COLLECTION OF SAMPLE FOR CERVICAL CYTOLOGY नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 24th day of January 2011 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled ENDOCERVICAL & ECTOCERVICAL SPATULA FOR COLLECTION OF SAMPLE FOR CERVICAL CYTOLOGY as disclosed in the above mentioned application for the term of 20 years from the 24th day of January 2011 in accordance with the provisions of the Patents Act,1970.

THE PATENT OFFICE GOVT.OF INDIA

अनुदान की तारीख :
Date of Grant : 25/11/2019

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 24th day of January 2013को और उसके पश्चात प्रत्येक वर्ष मे उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 24th day of January 2013 and on the same day in every year thereafter.

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व्यापार चिह्न/TRADE MARKS | भौगोलिक उपदर्शन/GEOGRAPHICAL INDICATIONS

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वेबसाइट /Website: http://ipindia.nic.in

सं. \ No. 216/MUM/2011

दिनांक \ Dated the 25/11/2019

सेवा मे, \ To :

Address of Service:- Lex-Regia, 246, Gandhi Nagar, Nagpur-440 010, Maharashtra, India"
Email Id:- advgnbhave@gmail.com,mailbox@lexregia.in,mailbox@lexregia.in

विषय :- पेटेंट आवेदन संख्या 216/MUM/2011 के संबंध मे अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर मे प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 216/MUM/2011

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व 08/08/2019 को हुई सुनवाई] के उपरांत सादर पेटेंट अनुदान किया जाता है। तथा पेटेंट अनुदान की प्रविष्टि 25/11/2019 को पेटेंट रजिस्टर मे कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on 08/08/2019] a patent is hereby granted and recorded in the Register of Patents on the 25/11/2019. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 325699
आवेदक का नाम \ Name Of Applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES
पेटेंट दिनांक \ Date of Patent	: 24/01/2011
पूर्विका तिथि \ Priority Date	: 24/01/2011
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filling date of Request for examination	: 07/03/2011
शीर्षक \ Title	: ENDOCERVICAL & ECTOCERVICAL SPATULA FOR COLLECTION OF SAMPLE FOR CERVICAL CYTOLOGY
दावों की संख्या \ Number of claims	: 1 Claim filed on 24/10/2019

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल मे किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय मे नवीकरण शुल्क जमा किया जाना चाहिए।
The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act,1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Santosh Mehtry
(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

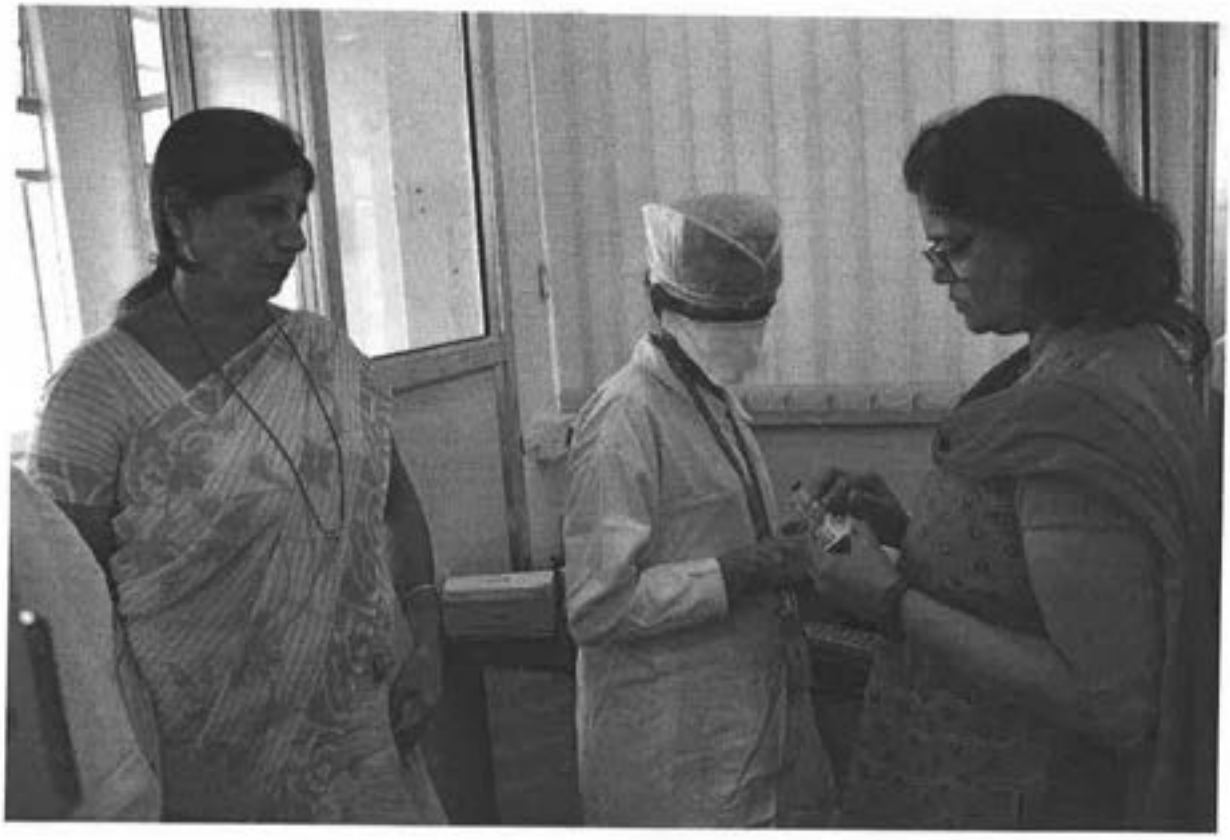
1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वैबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।
For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in
2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

Departmental Visit by National Institute of Virology (NIV) Team

A team from National Institute of Virology visited the Virology section of the department of Microbiology on 15.03.2019 to assess and evaluate the facility existing for H_1N_1 testing. Mrs. M. S. Chadha Consultant Influenza division, NIV and Mrs. Varsha Potdar, Scientist D, Influenza Group Leader, ICMR – NIV, assessed the infrastructure as well as observed the procedure and interpretation of H_1N_1 testing and its result respectively.

They reported that - overall the facility was sastifactory for Influenza testing. Expert commtteee insisted to perform the testing for all seasonal Influenza.

10 Samples received from NIV for Proficiency testing, was tested in the Virology laboratory of our department and all samples were concordant with the NIV Panel results.



KIMSDU Financial information

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	Nil	Nil	Nil	Nil	Nil	Nil
						Manpower
Doctor-1	826500	851700	876900	902100	927300	4384500
Counselor-1	372000	388200	404400	420600	436800	2022000
Field worker-1	216000	225600	235200	244800	254400	1176000
Total	1414500	1465500	1516500	1567500	1618500	**75,82,500**
Laboratory Tests & participant care cost	686125	1224333	1148916	644875	316183	**40,20,433**
Community engagement cost	500000	500000	500000	500000	500000	**25,00,000**
Shipment charges	25000	25000	25000	25000	25000	**1,25,000**
Travel						
Contingency	15000	15000	15000	15000	15000	**75,000**
Total	2640625					**1,43,02,933**

Annexure I – Financial Information

The Total Cost of the Project is INR **216685524** as per details given below (all costs in INR):

Institute	Year 1	Year 2	Year 3	Year 4	Year 5	Total
NARI	53552735	12336028	13850161	12486005	11804557	104029486
YRGCARE	7689832	10386503	9628764	7477819	5893511	41076429
NIRT	5211290	5749163	5336038	4800412	4304411	25401314
GHTM	2291344	2788275	2401217	2445617	2490018	12416471
IGICH	2511000	3039980	3145760	3197240	3248720	15142700
NIE	2306600	851800	877000	902200	927400	5865000
PCU	1985900	3270524	2605900	2665900	2225900	12754124
TOTAL	75548701	38422273	37844840	33975193	30894517	216685524

Institute-wise details

1. National AIDS Research Institute (NARI)
   - *Establishment of Cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative and Early HIV-infection) and HIV-infected adults – with and without comorbidities;*
   - Establishment of the state-of-the-art biorepository

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	42760000	0	0	0	0	42760000
Manpower	4932000	5126760	5321520	5515880	5710440	26606600
Laboratory tests, Participant Care and Community engagement costs (Cohorts)	4510735	6739268	6136641	4654125	3642117	25682886
Consumables (Biorepository)	1000000	100000	1000000	800000	800000	3700000
Shipment charges	200000	220000	242000	266000	292000	1220000

AMC for Biorepository Equipment	0	0	1000000	1100000	1210000	3310000
Travel	100000	100000	100000	100000	100000	500000
Contingency	50000	50000	50000	50000	50000	250000
TOTAL	**53552735**	**12336028**	**13850161**	**12486005**	**11804557**	**104029486**

1a. *Equipment*

Name of Equipment	No.	Cost
For Biorepository		
Bio Bank system (LN2)	2	30000000
LN2 shipment tank	2	2400000
70 freezer	2	2400000
Computer	1	60000
LN2 supply facility	1	500000
Sub-total		*35360000*
For Cohorts		
Tablet/Note book	4	100000
Upgradation of FACS Area	1	7300000
Sub-total		*7400000*
TOTAL		**42760000**

1b. *Manpower*

Head	No.	Monthly salary	Year 1	Year 2	Year 3	Year 4	Year 5	Total
For Biorepository								
Technical assistant	1	31000	372000	388200	404400	420600	436800	2022000
Technical Officer	1	32000	384000	400680	417360	434040	450720	2086800
Lab attendant	1	15800	189600	198000	206400	214800	223200	1032000
Sub-total			*945600*	*986880*	*1028160*	*1069440*	*1110720*	*5140800*
For Cohorts								
Scientist B (Medical) - For HIV uninfected cohorts	1	66250	795000	820200	845400	870400	895600	4226600

Scientist B (Non-Medical) – For HIV uninfected cohorts	1	52200	626400	651600	676800	702000	727000	3383800
Field Worker/Data Entry Operator – One each for HIV uninfected and HIV-infected Adult Cohort	2	18000	432000	451200	470400	489600	508800	2352000
Counselor – One each for HIV uninfected and HIV-infected Adult Cohort	2	31000	744000	776400	808800	841200	873600	4044000
Scientist B (Medical) – For HIV-infected Adult Cohort	1	66250	795000	820200	845400	870400	895600	4226600
Lab Technician (shared for HIV uninfected and HIV-infected Adult Cohort)	1	18000	216000	225600	235200	244800	254400	1176000
Staff nurse (shared for HIV uninfected	1	31500	378000	394680	411360	428040	444720	2056800

and HIV-infected Adult Cohort)							
Sub-total			3986400	4139880	4293360	4446440	4599720	21465800
TOTAL			**4932000**	**5126760**	**5321520**	**5515880**	**5710440**	**26606600**

1c. *Laboratory Tests, Community Engagement and Participant Care Costs for Cohorts*

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Laboratory Tests and Participant Care Costs						
HIV-uninfected cohorts	2058375	3673000	3446750	1934625	948550	12061300
Early HIV Infection cohorts	69516	180893	235974	187916	161984	836283
Exposed-seronegative cohorts				77667	77665	155332
HIV-infected Cohorts	882844	1385375	953917	953917	953918	5129971
Community Engagement Cost	1500000	1500000	1500000	1500000	1500000	7500000
TOTAL	**4510735**	**6739268**	**6136641**	**4654125**	**3642117**	**25682886**

2. Y.R. Gaitonde Center for AIDS Research and Education (YRGCARE)

- *Establishment of Cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative and Early HIV-infection) and HIV-infected adults – with and without comorbidities*

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	210000	0	0	0	0	210000
Manpower	2440500	2536980	2633460	2729940	2826420	13167300
Laboratory tests, Participant Care and Community engagement costs	4889332	7699523	6845304	4597879	2917091	26949129
Travel	100000	100000	100000	100000	100000	500000
Contingency	50000	50000	50000	50000	50000	250000
TOTAL	7689832	10386503	9628764	7477819	**5893511**	**41076429**

भारतीय गैर न्यायिक

भारत INDIA

रु. 500 FIVE HUNDRED RUPEES

पाँच सौ रुपये Rs. 500

सत्यमेव जयते

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ● 2018 ● AR 051336

Agmt

National Aids Research Inst.

Vamp Sangli Bhosari

Tumkur Kaheng

500 3394 26.3.19

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संमती पत्र (MOU)

दोघांमध्ये

राष्ट्रीय एड्स अनुसंधान संस्थान (ICMR-NARI)

आणि

वेश्या एड्स मुकाबला परिषद (VAMP)

एचआयव्ही / एड्स संशोधन आणि विकास क्षेत्रात सहकार्यासाठी

सदर संमती पत्र खालील / पुढील नमूद केलेल्या दोन संस्थांमध्ये आहे:

मायाशुरव

Dr Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR COMRPICA

मायाशुरव

Dr. Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR COMRPICA

आय.सी.एम.आर - राष्ट्रीय एड्स अनुसंधान संस्थान - (ICMR-NARI): जी-73, एमआयडीसी, भोसरी, पुणे, महाराष्ट्र येथील एचआयव्ही संसर्गावर आणि एड्सवर संशोधन करण्यासाठी समर्पित व अग्रणी असलेली संस्था.

<u>आणि</u>

वेश्या एड्स मुकाबला परिषद (VAMP): हि परिषद सध्या वेश्या अन्याय मुक्ती परिषद म्हणूनही ओळखली जाते, वाढत्या एचआयव्ही / एड्स चळवळीच्या अनुषंगाने, सन १९९६ मध्ये स्थापन झालेले हे संघटन वेश्या व्यवसाय करणाऱ्या महिलांसाठीचे आहे. या परिषदेचे कार्यालय बाल जगत, बालाजी नगर, कुपवाड रोड, सांगली, महाराष्ट्र येथे असून, हि परिषद या महिलांच्या प्रश्नांचे व अधिकारांचे सक्षमीकरण करण्याचा दृष्टीकोन बाळगते.

ICMR-NARI ची स्थापना ऑक्टोबर १९९२ मध्ये झाली आणि तेव्हापासून एचआयव्ही/एड्स विरुद्धच्या लढ्यात या संस्थेने गुणवत्तापूर्ण संशोधन करून वैद्यकीय अभ्यासांद्वारे उपचार आणि काळजीसाठी अनुकूलता निर्माण केली. भारतातील प्रचलित एचआयव्ही-१ उपप्रकार-सी संसर्गासंदर्भात, प्रतिबंधासाठी नवनवीन पद्धतींचा विकास आणि परीक्षण करून एचआयव्ही ची नवीन जीवशास्त्रीय माहिती सिद्ध केली आहे. ही संस्था आपल्या विविध उपक्रमांद्वारे, मुख्यतः देखरेख, क्षमता निर्मिती, प्रयोगशाळा सेवा व औषध प्रतिरोधनाच्या माध्यमातून राष्ट्रीय एड्स नियंत्रण कार्यक्रमास योग्य ती मदत करीत आहे.

संस्थेच्या संशोधन उपक्रमांचे मार्गदर्शन एका वैज्ञानिक सल्लागार समितीद्वारे केले जाते ज्यामध्ये विविध विषयांवरील प्रख्यात शास्त्रज्ञांचा समावेश आहे. ICMR-NARI ची संस्थात्मक नैतिक समिती संस्थेचे सर्व प्रकल्प काळजीपूर्वक अभ्यासते व मंजूर करते तसेच उच्च नीतिमत्तेच्या आधारावर संशोधनाच्या कार्याची पडताळणीही करते.

वेश्या एड्स मुकाबला परिषद (VAMP) हे वाढत्या एचआयव्ही / एड्स चळवळीच्या अनुषंगाने, सन १९९६ मध्ये स्थापन झालेले हे संघटन वेश्या व्यवसाय करणाऱ्या महिलांसाठीचे आहे जे या महिलांसाठी सामान्यत: साधनभूत दृष्टीकोन ठेवते. वेश्या व्यवसाय करणाऱ्या स्त्रियांची हळूहळू एक सामान प्रतिमा / ओळख बनविणे, त्यांना एकसंध / संघटित ठेवणे, त्यांच्या अधिकारांसंबंधी जागरूक करणे तसेच एचआयव्ही च्या संसर्गापासून स्वत:चा बचाव करण्यास सक्षम करणे असे उद्दिष्ट आहे.

येथून पुढे ICMR-NARI व VAMP ला एकवचनात "पार्टी" तर बहुवचनात "पक्ष" म्हणून संबोधले जाईल.

माया 2024

Dr. Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR COHRPICA

पार्श्वभूमी

भारत सरकारच्या विविध मंत्रालयांद्वारे राष्ट्रीय एड्स नियंत्रण संस्था (NACO), बायोटेक्नॉलॉजी विभाग (DBT) आणि ICMR विभाग यांच्या संयुक्त प्रयत्नांद्वारे भारताने एचआयव्ही-महामारी नियंत्रित करण्यासाठी लक्षणीय प्रयत्न केले आहेत. तरीसुध्दा महामारीच्या बदलत्या स्वरूपामुळे नवीन आव्हाने निर्माण झाली आहेत. प्रगती चालू ठेवण्यासाठी आणि महामारीचा उन्मूलन करण्याचा वेग वाढविण्यासाठी भारताने वैज्ञानिक प्रगती करणे आवश्यक आहे.

या दिशेने, 2017 साली भारतीय बाल व प्रौढांमध्ये एचआयव्ही प्रतिकार आणि प्रगती यांच्या अभ्यासासाठी (CoHRPICA) प्रोग्राम मधील कोहॉर्टस् द्वारे, भारतातील स्थारस्य असलेल्या एचआयव्हीच्या पद्धतशीर आणि संरचित अभ्यासाचे अशा प्रकारचे प्रथम राष्ट्रव्यापी प्रयत्न सुरु झाले. हा कार्यक्रम खुला-प्रतिसादात्मक अभ्यास (open-ended study) असून डी.बी.टी., आय.सी.एम.आर. आणि आय.ए.व्ही.आय. यांच्या नेतृत्वाने आणि NACO च्या सहभागाने केला जाणार आहे. या संशोधनात उत्कृष्ट दर्जाच्या आठ राष्ट्रीय संस्था एकत्र येणार आहेत. अति जोखमीचे वर्तन असणाऱ्या परंतु एचआयव्ही अबाधित प्रौढांचा आणि मुलांचा अनुकालिक अभ्यास गट (एचआयव्ही संपर्क आलेल्या सेरो-नेव्हिगेटसह) आणि एचआयव्ही बाधित व्यक्तींच्या गटाचा अभ्यास केला जाणार आहे (लहान वयातील एचआयव्ही संक्रमण, दुसऱ्या आजारांसह / शिवाय असलेला दीर्घकालीन संसर्ग आणि कोमॉरबिडिटीज आणि एचआयव्ही बाधित मुले, असा या अभ्यासाचा विस्तार असेल). प्रथम गटाचा अभ्यास समुदायांमधील शाखांमध्ये केला जाईल आणि दुसऱ्या गटाचा अभ्यास चिकित्सालयीन शाखांमध्ये केला जाईल. अभ्यासातील सहभागी व्यक्तींना आरोग्य-संबंधित माहिती दिली जाईल आणि रक्तद्रव्य / म्यूकोसल / पेशींचे नमुने नियमित वेळेवर घेतले जातील तसेच हे नमुने केंद्रीकृत राष्ट्रीय जैवविविधता संग्रहालयात संग्रहित केले जातील. यासंबंधित सर्व माहिती ही अतिप्रगत व अतिसुरक्षित गोपनीयतेच्या नियमानुसार राष्ट्रीय डेटाबेसशी (माहितीशी) संलग्न केली जाईल.

विविध शास्त्रज्ञ, संशोधक आणि समुदायाचे नेतृत्व करणाऱ्या संघटना यांमधील सहकार्य आणि सहयोगात्मक सहभाग यांद्वारे देशातील एचआयव्ही / एड्स च्या प्रभावी व्यवस्थापनासाठी नवीन साधने, हस्तक्षेप कार्यक्रम, उत्पादने आणि तंत्रज्ञान यांचा विकास केला जाऊ शकतो हे ओळखून या संमती पत्रात सहभागी होण्याचा हेतू असणारे सर्व पक्ष (पार्टी) त्यांच्या कार्यक्षमतेचा विस्तार आणि वापर करण्याचा उद्देश ठेवतील आणि संशोधन कार्याच्या सुलभतेसाठी त्यांच्या अनुभव आणि कौशल्यांचा वापर करतील. तसेच, विशिष्ट एचआयव्ही कोहॉर्ट्सच्या (गटाच्या) स्थापनेसाठी परस्पर सहकार्याने जनसमुदायाला संशोधनात सहभागासाठी सामील / संलग्न करून घेण्याच्या कृतीयोजनांची रचना आणि अंमलबजावणी करतील ज्यामुळे, भविष्यात एचआयव्ही / एड्स प्रतिबंध आणि उपचार यांवर संशोधन करण्यास मदत होईल.

Dr. Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR COHRPICA

- हे येथे सर्वांना मान्य आहे

1. पक्षांचे उद्दिष्ट:

येथे अटींच्या आधीन असलेले सर्व पक्ष या समजुती / संमती ज्ञापनाद्वारे पुष्टी करतात की, ते एचआयव्ही / एड्स संबंधित संशोधन आणि विकासासाठी त्यांचे अनुभव आणि संसाधने यांचे योगदान देण्याचा आणि त्यासाठी भागीदारी करण्याचा प्रस्ताव सादर करीत आहेत. सर्व पक्ष त्यांच्या भागीदार नेटवर्कसह (सहभागी संघटनांसह) कार्य करण्याची पुष्टी करत आहेत - VAMP आणि त्याचे नेटवर्क्स (सहयोगी संघटना), क्लिनिकल रिसर्च सेंटर (वैद्यकीय संशोधन केंद्र) / ICMR-NARI सह संलग्न असलेले संशोधन उत्कृष्टतेचे केंद्रे जसे, कृष्णा इन्स्टिटयूट ऑफ मेडिकल सायन्सेस डीम्ड युनिव्हर्सिटी (KIMSDU) आणि इतर, त्यांच्या क्षमता आणि कार्यकुशलता यांचे एकीकरण आणि गुणवत्ता विकसन यांद्वारे देशातील विद्यमान संसाधनांचा महामारी विज्ञान, वर्तन, चिकित्सा आणि जैव-वैद्यकीय एचआईवी / एड्स प्रतिबंध आणि उपचार संशोधन यासाठी सहयोग करतील. एचआईवी / एड्स आजार व्यवस्थापनासाठी सद्यस्थितीत अस्तित्वात असलेल्या आणि नवीन जैव-वैद्यकीय साधनांच्या विकासासाठी तसेच त्यामधील प्रगतीची माहिती देण्यात सहयोग करतील. यामध्ये विशिष्ट एचआयव्ही कोहॉर्ट्सची (गटांची) स्थापना करणे समाविष्ट आहे जे विविध भविष्यलक्षी आणि पूर्वलक्षी एचआयव्ही संबंधित अभ्यासांमधून जैविक नमुन्यांचे जैविक संग्रहालय निर्माण करण्यास मदत करेल.

2. भूमिका आणि जबाबदाऱ्या

ICMR-NARI ची भूमिका आणि जबाबदाऱ्या

- आयसीएमआर- नारी केंद्रीय कारभार, प्रशिक्षण आणि CoHRPICA अभ्यासाच्या प्रोटोकॉलचे पालन करणाऱ्याबाबतच्या बाबींवरील व्यवस्थापन आणि समन्वय यासाठी जबाबदार असेल.
- संशोधन साहाय्यता निधी, व्यवस्थापन, अनुपालन आणि गुणवत्ता निकष यांच्यापुरते मर्यादित नसून कार्यक्रमात अपेक्षितलेले सर्व प्रकारचे साहाय्य प्रदान करेल..
- नियोजन, आराखडा आणि समाजाच्या सहभागाची अंमलबजावणी, संशोधनाची तयारी, सहभागी साधनांचा प्रसार आणि त्याचे मूल्यांकन याबाबत VAMP बरोबर एकत्रितपणे कार्य करेल.

KIMSDU च्या भूमिका

- ICMR-NARI च्या ग्रामीण पुढाकारांतर्गत सातारा आणि आसपासच्या जिल्ह्यामधील सर्व वैद्यकीय अभ्यासांसाठी ICMR-NARI सोबत असलेल्या कृष्णा आरोग्य विज्ञान विद्यापीठ (अभिमत) (KIMSDU), कराड, CoHRPICA अभ्यासा संबंधित सर्व बाबींची अंमलबजावणी व पूर्तता यासाठी जबाबदार असतील.

31/01/2024

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- ICMR-NARI आणि VAMP सोबत नियोजन, आराखडा आणि समाजाच्या सहभागाची अंमलबजावणी, संशोधनाची तयारी, सहभागी साधनांचा प्रसार आणि त्याचे मूल्यांकन याबाबत एकत्रितपणे कार्य करतील.

VAMP ची भूमिका

- VAMP, त्यांच्या नेटवर्कच्या माध्यमातून CoHRPICA ला समान सहभागासाठी पाठिंबा देईल व त्यायोगे FSW चा संशोधनातील सहभाग वाढविण्यास मदत करेल. समूहप्रमुखांच्या सहकार्याने, नेटवर्कच्या माध्यमातून अधिकाधिक FSW पर्यंत पोहोचेल.
- ICMR-NARI सोबत समुदायातील सदस्य व नेत्यांसोबत सभा / मिटींग्ज करण्यासाठी सहकार्य करेल, ज्याद्वारे एचआयव्ही संशोधनाबाबत समाजाचे विचार समजून घेण्यास, आपआपसातील समज दृढ करण्यास आणि प्रभावी समुदाय सहभाग मिळवण्यासाठी मदत करेल.
- ICMR-NARI आणि KIMSDU यांच्यासोबत एकत्र नियोजन, आराखडा आणि संशोधनाची तयारी करताना समुदायाचा सहभाग दृढ करण्याची अंमलबजावणी आणि सहभागी साधनांचा प्रसार आणि त्याचे मूल्यांकन करण्यास सहकार्य करेल.
- सहभागीशी संपर्क कायम ठेवण्यासाठी आणि संपर्काचे संदर्भ आणि व्यवस्थापनामध्ये मदत करुन CoHRPICA साठी अंमलबजावणी करण्यास पाठिंबा देईल.

3. VAMP चे लाभ:

VAMP भारत सरकारच्या नेतृत्वातील CoHPRICA कार्यक्रमात अधिकृत भागीदार म्हणून दाखल / सहभागी होईल आणि जनसमुदायाच्या संशोधनातील सहभागासाठी आणि समुदायाला संशोधनाबद्दल साक्षर करण्यासाठी तसेच या कार्यक्रमाविषयी माहिती प्रसारित करण्यासाठी सातारा आणि सांगली जिल्ह्यातील वेश्या व्यवसाय करणाऱ्या महिलांना संशोधनात सहभागी करुन घेण्यासाठी ICMR-NARI आणि KIMSDU यांना मदत करण्यास जबाबदार असेल. बायोटेक्नोलॉजी विभाग आणि इंडियन कौन्सिल ऑफ मेडिकल रिसर्च यांचे अधिकृत भागीदार म्हणून ओळखले जाण्याव्यतिरिक्त VAMP संशोधन प्रक्रियेच्या कार्यक्रमात सामाजिक दृष्टीकोन बनविण्यासाठी अग्रणी असेल तसेच भारताच्या प्रमुख संशोधन संस्थांबरोबर भागीदार म्हणून कार्यरत असल्यामुळे देशात अधिक व्यापक स्वरुपात काम करेल.

4. समाजाला असणारे फायदे

सध्याच्या एचआयव्ही संशोधनातील काही प्रगत संकल्पनांची या समुदायास ओळख करुन दिली जाईल त्यात, जसे विषाणू विविधता, व्यापक निष्प्रभावक प्रतिपिंड, HIV ची सुप्तता आणि सक्रियता इत्यादी विषयांचा समावेश असेल तसेच या सर्वांचे भारतातील सामाजिक आरोग्यावर होणारे परिणाम याचाही उल्लेख असेल.

माया 2024

Dr. Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR COHRPCA

सहभागी खेळ, संवादात्मक नाटक (थिएटर) आणि अनुभवात्मक शिक्षण क्रियांचा वापर करून संशोधन साक्षरतेसाठी नाविन्यपूर्ण पद्धतींचा वापर करून / करण्यासाठी त्यांना प्रशिक्षण देण्यात येईल.

5. अभ्यास माहितीची उपलब्धता (अभ्यास माहितीचा उपयोग करण्याची संधी)

कराड आणि सांगली येथील संशोधनातून VAMP यांच्या समर्थनाद्वारे प्राप्त झालेली संशोधन माहिती VAMP साठी उपलब्ध असेल.

6. संशोधन प्रकल्प/ शोध निबंधांचे लेखकत्व

VAMP सह भागीदारीतून संशोधनाद्वारे प्राप्त केलेल्या माहितीचा समावेश असलेल्या सर्व प्रकाशनांमध्ये VAMP ला योग्य श्रेय आणि ऋणनिर्देश दिले जातील ज्यात सह-लेखकत्वाचाही समावेश असेल.

7. शोधनिबंधांचे प्रकाशन

CoHRPICA प्रकल्पांतर्गत असलेल्या वैज्ञानिक आणि तांत्रिक समितीच्या पुनरावलोकनंतरच/समीक्षणानंतरच VAMP ला या प्रकल्पातून/अभ्यासातून त्यांचे स्वतंत्र संशोधन प्रकाशित करता येतील कारण CoHRPICA संशोधन प्रकल्पातून होणाऱ्या सर्व संशोधनांसाठी आणि त्यातून प्रकाशित होणाऱ्या सर्व प्रकाशनाचे संशोधन मानदंड / मूल्यांना कायम ठेवण्यासाठी CoHRPICA कार्यक्रम/प्रकल्प जबाबदार आहे.

8. जबाबदाऱ्या

ICMR-NARI खालील बाबींसाठी जबाबदार राहणार नाही:

- VAMP च्या कोणत्याही कर्मचा-यांद्वारे केलेल्या रकमेची मागणी
- VAMP ने केलेली कोणतीही आर्थिक वचनबद्धता
- VAMP ने कोणत्याही प्रकारे सर्व हक्क राखीव (कॉपीराईट) चे आणि अन्य कायद्यांच्या उल्लंघनाची मागणी केल्यास, ज्याचा संमती पत्राच्या उद्देशाशी काही संबंध नाही.

9. VAMP ला लॉजिस्टिकल पाठिंबा

काही विशिष्ट परिस्थितींमध्ये ICMR-NARI, VAMP च्या टीम सदस्यांसाठीचे लॉजिस्टिकल खर्च सहन करण्यास सक्षम असू शकतात. तथापि, कोणतेही लॉजिस्टिकल खर्च करण्यापूर्वी, VAMP ला ICMR-NARI च्या संचालकांकडून पूर्व मंजुरी घ्यावी लागेल. VAMP टीमच्या सदस्यांद्वारे अभ्यास क्षेत्रासाठी होणाऱ्या लॉजिस्टिकल खर्चाची परतफेड ICMR-NARI कडून थेट VAMP टीमच्या सदस्यांना केली जाईल.

10. वैधता कालावधी

हा करार सुरुवातीला हस्ताक्षर केलेल्या तारखेपासून एक वर्षासाठी वैध असेल आणि नंतर दोन्ही पक्षांच्या परस्पर संमतीने या कराराचे नूतनीकरण केले जाईल.

Dr. Seema Sahay WITNESS FROM ICMR-NARI

& INVESTIGATOR COHRPICA

11. VAMP आणि त्यांच्या समुदाय सदस्यांची माघार

VAMP आणि त्याचे समुदाय सदस्य कोणत्याही वेळी कोणतेही कारण न देता CoHRPICA अभ्यासासाठी त्यांनी दिलेला पाठिंबा काढून घेण्यास मोकळे / स्वतंत्र आहेत.

12. कराराचा भंग

करारात नमूद केल्याप्रमाणे, दोन पक्षांपैकी एक पक्ष जर समुदाय-सदस्यांचे साहाय्य मिळविण्यास असमर्थ ठरला किंवा करारातील व CoHRPICA अभ्यासातील प्रोटोकॉल मधील एखाद्या भागाचे / विभागाचे / विधानाचे उल्लंघन केल्यास किंवा समुदाय-सदस्यांचे शोषण / गैरवापर केल्यास किंवा कोणत्याही प्रकारे ICMR-NARI संबंधाच्या भागीदारीचा गैरवापर केल्यास दोन्ही पक्षांना करार समाप्त करण्याचा अधिकार असेल.

13. करारातील दुरुस्ती

या करारात VAMP आणि ICMR-NARI च्या दायित्व / कर्तव्यांचे वर्णन केले गेले आहे. तथापि, कराराच्या प्रक्रियेदरम्यान अशी काही परिस्थितीही उद्भवू शकते की जी या करारात फेरफार किंवा फेरबदल / परिवर्तन करण्याची मागणी करू शकते. हे फेरबदल / परिवर्तन परस्पर चर्चा आणि लिखित स्वरुपात दोन्ही पक्षांकडून सहमत होतील.

14. नैसर्गिक आपत्ती

आग, युद्ध, दंगल, संप / बंद , नैसर्गिक आपत्ती इत्यादि कोणत्याही कारणामुळे कराराच्या अटी आणि नियमांची पूर्तता होत नसल्यास, VAMP किंवा ICMR-NARI किंवा KIMS कोणत्याही नुकसान किंवा परिणामी नुकसानासाठी जबाबदार राहणार नाही.

15. मध्यस्थता

या संमती पत्राच्या अंतर्गत प्रत्येक पक्ष भारतातील सर्व लागू राष्ट्रीय कायदे, धोरणे आणि नियमांचे पालन करून त्यांचे कर्तव्ये पार पाडेल. या कराराच्या कोणत्याही बाबी संबंधित उद्भवणारा कोणताही विवाद करार किंवा भारतीय कायद्यानुसार पक्षांद्वारे आप-आपसात सल्लामसलत आणि करारादवारे सोडविला जाईल.

वेश्या एड्स मुकाबला परिषद साठी	आयसीएमआर- नारी साठी
माया उमेश गुरव	
(संचालक, वेश्या एड्स मुकाबला परिषद) संचालक	(संचालक, ICMR-NARI) संचालक

VESHYA AIDS MUKABLA PARISHAD SANGLI Regd. No. MAH 5679

ICMR NATIONAL AIDS RESEARCH INSTITUTE PUNE-411 026

29/3/13

29/March/2013

Dr. Seema Sahay WITNESS FROM ICMR-NARI & INVESTIGATOR, COHRPICA

KIMSDU Financial information

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	Nil	Nil	Nil	Nil	Nil	Nil
						Manpower
Doctor-1	826500	851700	876900	902100	927300	4384500
Counselor-1	372000	388200	404400	420600	436800	2022000
Field worker-1	216000	225600	235200	244800	254400	1176000
Total	1414500	1465500	1516500	1567500	1618500	**75,82,500**
Laboratory Tests & participant care cost	686125	1224333	1148916	644875	316183	**40,20,433**
Community engagement cost	500000	500000	500000	500000	500000	**25,00,000**
Shipment charges	25000	25000	25000	25000	25000	**1,25,000**
Travel						
Contingency	15000	15000	15000	15000	15000	**75,000**
Total	264062-5					**1,43,02,933**

Annexure I – Financial Information

The Total Cost of the Project is INR 216685524 as per details given below (all costs in INR):

Institute	Year 1	Year 2	Year 3	Year 4	Year 5	Total
NARI	53552735	12336028	13850161	12486005	11804557	104029486
YRGCARE	7689832	10386503	9628764	7477819	5893511	41076429
NIRT	5211290	5749163	5336038	4800412	4304411	25401314
GHTM	2291344	2788275	2401217	2445617	2490018	12416471
IGICH	2511000	3039980	3145760	3197240	3248720	15142700
NIE	2306600	851800	877000	902200	927400	5865000
PCU	1985900	3270524	2605900	2665900	2225900	12754124
TOTAL	75548701	38422273	37844840	33975193	30894517	216685524

Institute-wise details

1. National AIDS Research Institute (NARI)
   - *Establishment of Cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative and Early HIV-Infection) and HIV-infected adults – with and without comorbidities;*
   - Establishment of the state-of-the-art biorepository

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	42760000	0	0	0	0	42760000
Manpower	4932000	5126760	5321520	5515880	5710440	26606600
Laboratory tests, Participant Care and Community engagement costs (Cohorts)	4510735	6739268	6136641	4654125	3642117	25682886
Consumables (Biorepository)	1000000	100000	1000000	800000	800000	3700000
Shipment charges	200000	220000	242000	266000	292000	1220000

AMC for Biorepository Equipment	0	0	1000000	1100000	1210000	3310000
Travel	100000	100000	100000	100000	100000	500000
Contingency	50000	50000	50000	50000	50000	250000
TOTAL	**53552735**	**12336028**	**13850161**	**12486005**	**11804557**	**104029486**

1a. *Equipment*

Name of Equipment	No.	Cost
For Biorepository		
Bio Bank system (LN2)	2	30000000
LN2 shipment tank	2	2400000
70 freezer	2	2400000
Computer	1	60000
LN2 supply facility	1	500000
Sub-total		*35360000*
For Cohorts		
Tablet/Note book	4	100000
Upgradation of FACS Area	1	7300000
Sub-total		*7400000*
TOTAL		**42760000**

1b. *Manpower*

Head	No.	Monthly salary	Year 1	Year 2	Year 3	Year 4	Year 5	Total
For Biorepository								
Technical assistant	1	31000	372000	388200	404400	420600	436800	2022000
Technical Officer	1	32000	384000	400680	417360	434040	450720	2086800
Lab attendant	1	15800	189600	198000	206400	214800	223200	1032000
Sub-total			*945600*	*986880*	*1028160*	*1069440*	*1110720*	*5140800*
For Cohorts								
Scientist B (Medical) - For HIV uninfected cohorts	1	66250	795000	820200	845400	870400	895600	4226600

Scientist B (Non-Medical) – For HIV uninfected cohorts	1	52200	626400	651600	676800	702000	727000	3383800
Field Worker/Data Entry Operator – One each for HIV uninfected and HIV-infected Adult Cohort	2	18000	432000	451200	470400	489600	508800	2352000
Counselor – One each for HIV uninfected and HIV-infected Adult Cohort	2	31000	744000	776400	808800	841200	873600	4044000
Scientist B (Medical) – For HIV-infected Adult Cohort	1	66250	795000	820200	845400	870400	895600	4226600
Lab Technician (shared for HIV uninfected and HIV-infected Adult Cohort)	1	18000	216000	225600	235200	244800	254400	1176000
Staff nurse (shared for HIV uninfected	1	31500	378000	394680	411360	428040	444720	2056800

and HIV-infected Adult Cohort)								
Sub-total			3986400	4139880	4293360	4446440	4599720	21465800
TOTAL			**4932000**	**5126760**	**5321520**	**5515880**	**5710440**	**26606600**

1c. *Laboratory Tests, Community Engagement and Participant Care Costs for Cohorts*

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Laboratory Tests and Participant Care Costs						
HIV-uninfected cohorts	2058375	3673000	3446750	1934625	948550	12061300
Early HIV Infection cohorts	69516	180893	235974	187916	161984	836283
Exposed-seronegative cohorts				77667	77665	155332
HIV-infected Cohorts	882844	1385375	953917	953917	953918	5129971
Community Engagement Cost	1500000	1500000	1500000	1500000	1500000	7500000
TOTAL	**4510735**	**6739268**	**6136641**	**4654125**	**3642117**	**25682886**

2. Y.R. Gaitonde Center for AIDS Research and Education (YRGCARE)

- *Establishment of Cohorts of HIV-uninfected individuals at high-risk (including Exposed-seronegative and Early HIV-infection) and HIV-infected adults – with and without comorbidities*

Budget Head	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Equipment	210000	0	0	0	0	210000
Manpower	2440500	2536980	2633460	2729940	2826420	13167300
Laboratory tests, Participant Care and Community engagement costs	4889332	7699523	6845304	4597879	2917091	26949129
Travel	100000	100000	100000	100000	100000	500000
Contingency	50000	50000	50000	50000	50000	250000
TOTAL	7689832	10386503	9628764	7477819	5893511	41076429

Study Title

Implementation and Evaluation of Community Based Intervention for Upliftment and Voluntary Participation in Biomedical Research Studies

Protocol No:_____

Study Investigators and Institutional Affiliations

KIMSDU	
Dr. Asha Jadhav ***Principal Investigator*** Director Extension Activities Krishna Institute of Medical Sciences, deemed to be University, Pune Bangalore Highway, Malkapur, Karad Dist .Satara 415110 Email: kimsdea@gmail.com Phone:9421576382	**Signature:** **Date:** 20|11|2019
NARI	
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Study Sponsors

IAVI

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Summary of the Study

Title:
Implementation and Evaluation of Community Based Intervention for Upliftment and Voluntary Participation in Biomedical Research Studies.

Purpose of the Study:

The current study aims at exploring ways to bring more high-risk population into the prevention and treatment space and increasing research preparedness through community messaging and literacy tools about HIV, Sexual and Reproductive Health and Biomedical Research.

Objectives:

- To assess awareness and enhance perception of risks posed by HIV and STIs to sexual & reproductive health;
- To understand the facilitators and barriers for adoption and uptake of protective interventions against HIV & STIs and strengthen uptake;
- To identify hidden populations who are at risk of HIV and STIs and do a comparative analysis of the factors responsible;
- To augment collectivization efforts and capacities for self-addressal of community concerns;
- To advance research literacy in communities and encourage informed and voluntary participation in clinical and biomedical research (BMR) studies (including the National HIV Cohort Study).

Methodology:
Study Duration: 1 year.

Study Partners: Krishna Institute of Medical Sciences Deemed University (KIMSDU); National AIDS Research Institute (NARI).

Study Sites: Karad, Ichalkaranji and Sangli in Maharashtra.

Study Populations: (a) General population focused on adolescent girls and adult women involved in risk behavior (b) Traditional high-risk populations like FSW, along with representation from other relevant populations (like truckers, migrants, students etc.) who interact with the above-mentioned focal groups.

Study Design:
This study has a two-pronged approach where efforts will be focused to reach out to the hard-to-reach high-risk populations to understand the factors affecting their participation in HIV care continuum and biomedical research as well as implement and assess novel community engagement tools towards enhancing research literacy for voluntary and informed participation in BMR. Towards this, the study will be conducted as the following:

(A) Research study to understand facilitators and barriers towards participation in biomedical research: The study will be conducted using a mixed methods study design.

- A quantitative questionnaire survey to provide an overall statistical picture of the factors affecting research participation at individual and community level.
- A qualitative semi-structured face-to-face interview and focus group discussions which will enable in-depth understanding of the community perspectives towards willingness to participate in HIV research;

(B) Designing, dissemination and evaluation of novel community engagement tools:
The community engagement tools and materials, developed based on formative research and peer discussions, will be rolled out into the community focused on women at-risk in general as well as FSW populations. Following this, evaluation of the tools will be conducted to assess their impact on HIV related knowledge and perception towards BMR participation.

Background and Rationale

India stands at the intersection in the response to its HIV epidemic and has made significant steps in controlling the same. New HIV infections and AIDS-related deaths have dropped by 46% and 22%, respectively, since 2010. The adult HIV prevalence at national level has continued its steady decline from an estimated peak of 0.38% in 2001-03 through 0.34% in 2007, 0.28% in 2012 and 0.26% in 2015 to 0.22% in 2017. However, despite strong programmatic efforts resulting in overall decline in HIV prevalence, HIV continues to be a public health issue with considerable inter-state variations in prevalence among certain populations at higher risk of HIV infection, called key populations (KPs) like, Men who have Sex with Men (MSM), Female Sex Workers (FSW), People Who Inject Drugs (PWID), Transgender Women (TGW), adolescents, migrants and truckers among others. The UNAIDS has set ambitious targets of 90-90-90 wherein 90% of HIV infected persons are aware of their status, 90% of those aware are on sustained Antiretroviral Therapy (ART) and 90% of those on ART achieve viral suppression. To achieve these global targets, the National Strategic Plan (NSP) for HIV/AIDS and STI released by National AIDS Control Organization (NACO), outlines a framework of strategies and activities to be implemented over the next seven years. In line with these, it becomes imperative to increase the HIV awareness in KPs, increase knowledge about their HIV status and bring them into the treatment and care continuum.

The HIV disease management landscape has also been evolving and newer advancements in the prevention and treatment methodologies have brought about a paradigm shift in approaches to address the global HIV disease burden. To value add to the existing disease management tools like combination antiretroviral therapies (cART), researchers are working towards enabling development and implementation of new tools for HIV prevention and treatment, for example, for pre-exposure prophylaxis (PrEP), microbicides, long-acting implantable anti-retrovirals, therapeutic and preventative broadly neutralizing antibodies etc. Towards design and development of interventions that are according to the population-specific needs, it becomes relevant to better understand of the complex interplay between host, virus and the environment. Long-term cohort studies across the globe have been instrumental in focusing on different aspects of the HIV-disease and in working towards a better disease management tool.

Relevant studies that KIMSDU and NARI have conducted

NARI's AIDS Rural Research Initiative in Maharashtra (NARRIM) - In order to generate data on HIV awareness, and HIV status in rural population and achieving the first goal of 90% of all people living with HIV knowing their HIV status, ICMR-NARI and IAVI through the support from USAID has established a project entitled, 'NARI's AIDS Rural Research Initiative in Maharashtra (NARRIM)', a rural research initiative, a clinic in collaboration with Krishna Institute of Medical Sciences, Deemed University, Karad in Satara district of Maharashtra. Under this project, a situational analysis was conducted for entire Satara district focusing on three Millennium Development Goals of reproductive and child health, HIV and tuberculosis and mapping of High-Risk Groups and vulnerable pockets of HIV and AIDS to facilitate comprehensive understanding of the Satara district to initiate future research studies on various socio-behavioural, cultural determinants and bio-medical research in both rural and urban areas.

PHV- NARRIM (Promoting HIV Vaccine (PHV) Research and Development Through Tech-transfer And Capacity Building For HIV Immune-pathogenesis Studies)- Subsequently, NARI initiated a community based open cohort (PHV Cohort) in the 65 clusters of Karad and

Patan block of Satara District. The objectives of this project were to explore the perceptions of the rural community regarding STIs, HIV, HIV testing and HIV prevention, to study the demographic, behavioral, biological and program factors which are deterministic of STI/ HIV vulnerability and risk among rural population and to identify potential studies pertaining to vaccine development.
175 health camps were conducted in 65 clusters of Satara district across Karad and Patan to recruit participants in the open community cohort. During the community engagement, multiple stakeholders in Karad and Patan blocks of Satara district were involved through meetings and a program alligned to 'one health' approach named "Arogya aplya Daari" focused on HIV counseling, testing, NCDs and hygiene was implemented. This approach also helped in mainstreaming HIV testing and no incidence of stigma was observed during HIV testing camps. This kind of effort would be critical for participation of both visible and hidden key populations not only in seeking care but also in participation in biomedical research studies which is otherwise seen with suspicion.

National HIV Cohort Study (CoHRPICA) – The National HIV Cohort Program (Cohorts for HIV Resistance and Progression in Indian Children and Adults – CoHRPICA), supported by the Department of Biotechnology (DBT), Indian Council of Medical Research (ICMR) and IAVI, is focused on creating specific cohorts, biorepository and database to enable understanding of the disease and aid in development of new tools for disease management. Towards this, the Program aims to bring together multiple institutes with interdisciplinary expertise (clinical, socio-behavioral and biomedical) across India to establish a consortium that leverages on individual strengths to accelerate accelerate population-based studies in HIV/AIDS. As a part of this, NARI (in working with KIMSDU) is responsible for establishing HIV uninfected cohorts from high risk populations (including exposed seronegative cohorts), Early HIV infected individuals and also HIV infected cohorts with and without co-morbidities.

Current Need

A critical key to the success of achievement of 90-90-90 in India, the above-mentioned studies and also to other future HIV research studies or interventional trials is the participation of the relevant community in these efforts. Therefore, it becomes extremely pertinent to extend the knowledge of these developments to the relevant community, understand their perspectives and the community needs, and their social and behavioral practices.
Recent programmatic data from Integrated Counselling and Testing Centers (ICTC) highlight that during 2015-16 only 3% of the newly detected HIV cases were from Targeted Intervention (TI) program focused on key populations whereas, 84% of the newly detected cases were from a mixed pool of general population that need to be characterized by socio-demographic characteristics and risk behaviors. Also, the current trend in sexual network include non-traditional interactions like non-hotspot-based sex work, part-time and seasonal sex work and virtual soliciting involving adolescents, upper class drug users, migrants and homeless populations, among others. Given that a considerable proportion of key population is non-self-identified, the national priorities are now focused on adoption of a wider definition of vulnerability and risk to reach out to these people at risk who do not fall into traditional domain of key populations.
Therefore, there is a strong need to identify this hard to reach at-risk populations, understand their behaviors, practices and perceptions and have a comparative evaluation of these with the self-identified key populations to bring more of them into the prevention, treatment and care continuum. Towards this, national priorities include appropriate design for community interventions to outreach these hard-to-reach populations through integration with Sexual and

Reproductive Health education and greater convergence with the NHM adolescent programme As Maharashtra has the highest prevalence of HIV among the FSW population, this study is uniquely positioned to understand and compare the community perspectives of FSWs and that of the adolescent girls and women of reproductive age in general population. Also, integration of social and behavioral science and community perspectives early in idea generation and research study design is imperative for the successful conduct of biomedical studies/trials and for ensuring optimal data collection approaches necessary for the interpretation of findings.
Towards the above, the current study aims at exploring ways to bring more high-risk population into the prevention and treatment space and increasing research preparedness through community messaging and literacy tools about HIV, Sexual and Reproductive Health and Biomedical Research.

Study Objectives

The objectives of the current study are:

- To assess awareness and enhance perception of risks posed by HIV and STIs to sexual & reproductive health;
- To understand the facilitators and barriers for adoption and uptake of protective interventions against HIV & STIs and strengthen uptake;
- To identify hidden populations who are at risk of HIV and STIs and do a comparative analysis of the factors responsible;
- To augment collectivization efforts and capacities for self-addressal of community concerns;
- To advance research literacy in communities and encourage informed and voluntary participation in clinical and biomedical research (BMR) studies (including the National HIV Cohort Study).

Study Duration

The study will be over a period of 1 year which will enable collection of data to understand the community knowledge, awareness, perspectives and behaviors related to sexual and reproductive health (SRH), HIV and biomedical research (BMR); development of interventions to address the gaps – information, education and communication materials and tools; roll-out of these in the community and impact assessment.

Study Population

Given that women account for 41% of estimated PLHIV in India and recent evidences highlighting gender norms can impact access to services by affecting decision to seek testing, pursue ART or other health seeking and the national priorities discussed above, this study will be focused on adolescent and adult women of reproductive age (15 – 45 years) with risk behavior including the key population FSW. Also, efforts will be made to include additional participants from other relevant groups (like migrants, truckers, students, among others) who interact with the above-mentioned groups. These participants will be recruited through conduct of health camps as well as other relevant community engagement activities and service delivery based on specific needs.

Study Sites

The study will be conducted in Karad, Ichalkaranji and Sangli in Maharashtra.

Study Partners- Roles and Responsibilities

KIMSDU	NARI	CBO	IAVI
Alignment and agreement on goals; key issues to be addressed; relevant community insights; and appropriate messaging for addressing the identified issues			
Co-creation of interactive tools to deliver key messages through peer-led activities	Co-creation of interactive tools to deliver key messages through peer-led activities	Co-creation of interactive tools to deliver key messages through peer-led activities	Funding and technical support
Training of peer educators on interactive tools and how to effectively deliver them	Training of peer educators on interactive tools and how to effectively deliver them	Training of peer educators on interactive tools and how to effectively deliver them	
Testing, implementation, delivery, evaluation & continuous improvement of interactive tools in community learning and engagement program	Delivery, evaluation & continuous improvement of interactive tools in community learning and engagement program	Testing, implementation, delivery, evaluation & continuous improvement of interactive tools in community learning and engagement program	
Counseling, informed consent, screening and enrollment of potential research participants resulting from CE efforts			

Study Design and Methodology

(A) Understanding facilitators and barriers towards participation in biomedical research

The study will be conducted using a mixed methods study design.

Quantitative Component

A quantitative questionnaire survey will be administered to the participants from both general and FSW populations. This survey will aid in deriving a statistical picture of overall level of knowledge and perception of the community about Sexual and Reproductive Health (SRH), HIV risk and prevention as well as the factors affecting voluntary participation in Bio Medical Research (BMR) at both individual and community level.

Evaluation parameters

- Awareness about HIV, SRH and general health
- Perception about HIV and STI prevention
- Treatment/Health seeking behavior for HIV and SRH
- Biomedical Research preparedness and research literacy

Sample size for cross-sectional quantitative survey

The baseline comprehensive knowledge about HIV and its prevention and transmission in women is 22% in rural Maharashtra (NFHS 4, 2015-16). This was taken as participant awareness about HIV and BMR with an absolute precision of 5% and confidence interval of 95%.

Given that the combined population of Karad, Ichalkaranji and Sangli is around 9 lakhs, using the above parameters, the sample size calculated for the cross-sectional questionnaire survey came out to be 528 which was rounded off to 550. Design effect of magnitude 2 was assumed to account for intra-cluster correlations.

The formula that was used in sample size calculation is given below:

$$N = \frac{(Z\alpha)^2 \times p\,(1-p)}{d^2}$$ Where, Zα: Level of significance, p: Prevalence, d: Precision

Qualitative component

The quantitative survey will then be followed by qualitative data collection including in-depth interviews, key informant interviews and focus group discussions among high-risk women of reproductive age (15-45 years) including FSWs. It will aid in in-depth understanding about community's current knowledge, awareness, attitude and practice towards Sexual and reproductive health; HIV risk, prevention and transmission and mental health; community perspectives on HIV testing and other preventative and therapeutic interventions; perspectives about collectivization and empowerment of the vulnerable community; research preparedness and willingness to participate in Biomedical Research Studies. This will also aid in further developing community engagement strategies, communication materials and literacy tools for strengthening community research preparedness and research literacy. Towards these the tools deployed would borrow from 'Participatory Action Research'.

Data collection

Data collection method	Population	Sample Size	Focus of inquiry
In Depth Interview	Adolescent girls and adult women of reproductive age with risk behaviors visiting the health camps	20	• Awareness and perspectives about SRH; • HIV awareness: perception about risk and knowledge about prevention, testing and care; • Current practice and perspective about uptake of various HIV Px and Tx options; • Research literacy: knowledge about HIV science; need for blood draw, behavioral information and follow ups even if treatment is not required; • Facilitators and barriers towards willingness to participate in BMR; • Perspective about specific programs (HIV testing health camp; Arogya Aaplya Dari)
	Key population: FSW	10	
	Participants from other relevant population like truckers, migrants, students etc.	6	
Key informants' interview	• Medical officer • Staff nurse/ other health care staffs • CBO rep/ DAPCU rep • Research team members • Key stakeholders from villages-Panch/ ASHA workers	3 (each category)	How can effectively implement this program for more recruitments, which measures should have been adopted to reach vulnerable population, how this program benefited for high risk and vulnerable population, what additional health care should be added.
Focus Group Discussions	• Adolescent girls and adult women of reproductive age with risk behaviors • FSWs • Representative of relevant interacting population	4 (7-8 participant per FGD)	Perspectives about SRH; Perception about HIV risk and prevention; awareness about HIV testing and care; Research preparedness; Facilitators and barriers to novel biomedical interventions and BMR

Participant Sampling and Participant Recruitment

Towards the study, 4 focus group discussions (FGDs), 12-15 key informant interviews (KIIs) and 36 In-depth interviews (IDIs) will be conducted.

For the focus group discussions, diverse subgroups of high-risk population such as adolescents, FSWs (brothel-based, street-based, internet/social media-based), truckers, migrants would be recruited. Effort would be taken to have minimum 7-8 people in any FGD.

Any women between 15-45 years of age with high risk behavior and willing to participate in the study after well informed consent will be eligible for participation in the interviews.

(B) Designing, Dissemination and Evaluation of Community Engagement Tools

According to NFHS 4, only 22% women in Maharashtra have comprehensive knowledge about HIV. For success of any programmatic efforts towards HIV prevention and care among women in this setting, it will be critical to design and implement regionally effective outreach activities to improve community awareness. The national strategic priorities are now focused on differential approaches towards outreach and community services to make them relevant to specific populations and geography such that it can improve community ownership and engagement. Therefore, it will be imperative to design, implement and evaluate novel communication strategies to enhance community perception about HIV risk, prevention and care. The awareness about HIV science and research will also be critical for enhancing uptake of HIV services and upcoming interventions.

The current interventions will focus on creating safe spaces to strengthen community conversations and help create of an 'HIV competent Community' that would enable community members to support each other in achieving behavior change. Rooted in various theories of Social and Behavior Change Communication, the intervention aims to create strategies that would help support inclusive and meaningful community engagement. Towards this, the program would employ various interactive games, street play based acts, group meeting on specific subject so that community can attend and actively participate in it, it will also adopt method like theater activity, video presentation of any subject and through power point presentation of various modules.

In addition to these, with an intent to bring science closer to community and provide an equitable space for community to participate in research in meaningful manner, learning tools will be developed and implemented that will help break down scientific quests and help community vale and think critically about HIV research and need for innovation and also help make HIV research more people-centered.

Designing of the intervention

Exhaustive review of relevant literatures and discussions with relevant peers would inform the designing of interventions for community engagement and education. Communication materials would be designed and co-created in consultation with the community members, program experts and research staff to further strengthen communities understanding of HIV prevention, Sexually Reproductive Health, Human body system and general health issues (such as non-communicable diseases), health seeking options, disease prevention, and ongoing BMR.

The materials may include (but are not limited to) leaflets, brochures, and posters and also research literacy tools like Participatory Theatre Activity and Experiential Game towards explaining various scientific basics in layman language.

Dissemination of the intervention

The community engagement for this study will be done in selected area of Karad, Ichalkaranji and Sangli in Maharashtra. Mass level campaigning through IEC material, local level publicity and advertisements in general population as well as focused engagements in FSW populations through outreach meetings and service delivery camps based on specific community needs will be adopted for increasing awareness and participation from the community including high-risk women from both general population and FSW population.

Community sensitization will be undertaken in the selected sites. The community will be oriented about the project, activities, and programs. Different methods will be applied for community sensitization such as one to one session, group sessions, dissemination of information through audio-visual modes and others. The community leader or key people in case of high-risk population will be identified during the initial phase of the project for community engagement and active participation. Also, peer volunteer will be identified for supporting the community sensitization work as well as their active engagement for the screening of HIV testing.

The prospective plan for the community engagement activities are provided below:

Detailed CEP plan

Activity	Site	Number	Implementor	Purpose
Outreach meetings/ Service delivery to relevant populations	Karad	25-30 engagements	• Research Assistant (Interventionist) • Peers	The community will be oriented about the project activities, and programs. Community sensitization and dissemination of information through audio-visual modes and others. To understand the need of research and preparedness of research in HIV prevention
	Ichalkaranji			
	Sangli			
Participatory Theatre Activity	Karad			To give knowledge about the perception, facts about HIV, Govt facilities of health care services.
	Ichalkaranji			
	Sangli			
	Karad			

Experiential Game	Ichalkaranji Sangli			To understand the disease epidemiology, incidence, HIV testing, treatment outcome, adherence benefits, social and moral responsibility, stigma reduction

Evaluation of Community Engagement Tools

This phase will evaluate the impact of community education messages for HIV (epidemiology, testing, treatment, adherence and national programme), SRH, and biomedical research participation on high-risk women from general and FSW population. This will be questionnaire-based evaluations across all the selected study sites. A sub-sample of the population will be selected for administering the community engagement tools and the data will be compared with a control group from the same population. Both the groups will be assessed at the baseline (before communication engagement tools are administered) and at end-point (after the tools are administered). Relevant qualitative and quantitative tools for analyzing knowledge and perception will be adopted from appropriate 'Knowledge-Attitude-Practice' and other behavioral science framework.

Statistical Analysis

- The quantitative questionnaire survey will be analyzed to decipher the interplay between socio-demography, knowledge and perception about SRH, HIV and BMR participation using frequentist approaches;
- The level of significance will be taken at 0.05;
- The effect of community engagement tools will be measured by comparing the appropriate scores defined for this study across intervention and control groups.

The details of statistical analysis will be outlined in the Statistical Analytical Plan.

Implementation Plan

Respecting and Protecting Research Participants and Communities

Informed consent process

Informed consent will be obtained prior to any data collection. Participants in the interviews will be presented with an information letter that outlines the scope of the study and a consent form that provides options to sign or put initials. Given the potential low literacy levels of some participants, the research assistants will offer to read the information letter and consent form. Following this procedure, they will then ask the potential participant questions about the study to ascertain the participant's level of understanding.

As part of the informed consent process, all potential participants will be told that their participation or not in interviews will not affect the services they currently receive or may receive in the future from their respective community agencies.

Possible risks and measures to minimize risks

There is no direct or indirect harm to the any participant due to their participation in the survey study.

Administrative Procedures

Roles and responsibilities

The Principal Investigator will be responsible for all aspects of the study at the study sites. The Study Advisor will be responsible for overall technical appropriateness of the study. The study staff will be recruited by the PI with approval from the Study Advisor. The Advisor will be responsible for overseeing the staff training for data collection and data analysis.

Study Working Group (SWG)

At each site, a Study Working Group, consisting of the Principle Investigator, the study co-ordinators and research staff will meet regularly to discuss any study related issues and address them in working with the Study advisor. Additionally, teleconferences between members of the SWGs, Study Advisor and IAVI will be organized monthly to discuss the progress of the study and study related issues.

Study Monitoring

On-site monitoring will be conducted to ensure that the study is conducted according to the protocol and is in compliance with applicable regulations and guidelines, recorded and reported in accordance with the protocol, is consistent with locally-accepted practices and standard operating procedures.

The Investigators and volunteers, by giving consent, agree that the monitor may inspect study facilities and source records (e.g., informed consent documents, other source documents) as well as observe the performance of study procedures. Such information will be treated as strictly confidential and will under no circumstances be made publicly available. The Principal Investigator will permit inspection of the facilities and all study-related documentation by authorized representatives of IAVI and Government and Regulatory Authorities relevant to this study.

Study Deliverables

The key deliverables for all study sites would include submission of (a) monthly progress and site-specific performance reports including field events, photos from sites etc; (b) SOPs, intervention strategy and training resources developed including guidelines and manuals; (c) original raw data (including field notes, transcriptions) and compiled data with analysis (including computer programmes, source codes, and any written documentation) (d) power point presentation including top line findings and final report upon completion of the study (e) Baseline and endline report (f) Budget utilization certificate to IAVI. In addition, any publication/ submission of abstract/summary or presentations in national and international conferences/peer reviewed journals must have prior approval from IAVI.

Investigator's Records

The Investigator will maintain and store in a secure manner complete, accurate, and current study records throughout the study. Study records include administrative documentation, including reports and correspondence relating to the study, as well as documentation related to each participant and should be kept in a secure location.

Publications

Manuscripts will be developed from the study reports. All manuscripts, abstracts, reports will be reviewed and approved by the study PI, study advisor and in working with the study sponsors. The researchers along with other contributors from partner agencies (including IAVI), where appropriate, who have substantially contributed to the manuscript will be given a co-authorship in accordance with the standard publication ethics guidelines.

International AIDS Vaccine Initiative

Table of Required SUB-AWARD DATA ELEMENTS

IAVI Agreement Number A08723 (YR 4 Award)

Required Information per 2 CFR 200.331(a)

1.	**Federal Award Identification:**	HIV Vaccine and Biomedical Prevention Research Project – Objectives 1 and 2
2.	**Sub-recipient Name:**	**KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY (KIMSDU)**
3.	**Sub-recipient DUNS Number:**	859167931
4.	**Federal Award Identification Number:**	USAID Cooperative Agreement AID-OAA-A-16-00032
5.	**Federal Award Date:**	**11/13/2019**
6.	**Sub-award Period of Performance:**	**11/13/2019 - 6/30/2020**
7.	**Amount of Federal Funds Obligated by this Annual SOW/MOD:**	$97,745
8.	**Total Federal Amount Obligated including this Annual SOW/MOD:**	$97,745
9.	**Total Amount of the Federal Award Committed to the Sub-award Organization:**	$97,745
10.	**Total Sub-award Amount (including other donor funding)**	$97,745
11.	**Federal Award Project Description (FFATA):**	ADVANCE: Sub Result 2.3b:South-South collaboration work to create a cohesive regional network for conducting work on community preparedness, immuno-biology, product development and increase opportunities for training and collaboration between East and Southern Africa and India, by sharing samples, expertise, data, and capacity, while focusing on common health and scientific goals including HIV prevention.
12.	**Name of Federal Awarding Agency**	U.S. Agency for International Development (USAID)
13.	**Pass-through Entity Name and Contact Information**	International AIDS Vaccine Initiative (IAVI) 125 Broad Street, 9th Floor, New York, NY 10004 Lola Sunmonu: lsunmonu@iavi.org.
14.	**CFDA Number and Name**	98.001, USAID Foreign Assistance for Programs Overseas

International AIDS Vaccine Initiative

15.	**R&D Funding**	Yes ☒No ☐
16.	**Sub-award Organization Indirect Rate**	8%
17	**Approved federally recognized, negotiated, or de Minimis KIMSDU (10% of MTDCR)**	N/A
18	**Additional requirements imposed on pass-through entity i.e. environmental compliance requirements (22CFR 216).**	
19	**Type of Award**	Cost Reimbursement ☒ Fixed Cost ☐ Other ☐

PROPOSAL

INDIAN COUNCIL OF MEDICAL RESEARCH (ICMR)

भारतीय आयुर्विज्ञान अनुसंधान परिषद

Indian Council of Medical Research

Department of Health Research, Ministry of Health & Family Welfare
Government of India

Web based Submission,Processing & Management for Extramural Proposals

User Home | Proposal Submission | Full Proposal | Project | Update Profile | Personal | Logout

List Of Submitted Detailed Proposals sub proposal

Sl.No.	Proposal Id	Title	Broad Area	Status	Cost Details	Edit Proposal Details	Upload and View Documents	Scheme	Addl. Details
1	2019-8987	Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.	Non Communicable Diseases	Technically Approved	View	Proposal cannot be edited at this stage	Upload / View	Extramural Research Program	no

Version Id : 11
Submission Date : 18-12-19
Comments : View

ICMR

Dept. of Health Research

(Ministry of Health and Family Welfare)

PRC Comments

Remarks	
PRC Decision	**PRC Remarks**
Technically Approved	Observations: Recommended with one JRF; consumable grant of Rs.3 lakh each for 1st & 2nd year; travel grant of Rs.50,000/- each for 1st &2nd year; contingency grant of Rs.2 lakh for 1st &2nd year; non-recurring grant not agreed to.

Indian Council of Medical Research

APPLICATION FOR AD-HOC PROPOSAL

Name (IN BLOCK LETTERS):	DR. ANAND GUDUR
Gender:	M
Date of Birth of PI:	23-Jul-1972

DSIR Certificate Validity Date:	31/03/2022	Nature of Employment	Permanent
superannuation:	31/03/2040	Type of Institute:	Private
Have you received any funding for research project for ICMR as Principal Investigator:			NO
Have you received any funding for research project as Principal Investigator from any other Govt agency/Private Organization either national or International:			NO

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Title of proposed research project:	Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.
Duration of project proposed (in Months):	36
Six Keywords:	N.A
Major Discipline:	ONCOLOGY

General Information of Principal Investigator

Name	Designation	Department	Institute/Organization's address	Email	Mobile No
Dr. Anand Gudur	Professor	N.A	Krishna Institute of Medical Sciences Deemed University	anandgudur@gmail.com	9890929412

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Academic details of Principal Investigator

S.NO	Academic Qualifications	Year	Institute
1	D.N.B. (RT)	2003	Amia Cancer Research Institute
2	DMRT	2000	Kidwai Memorial Institute of Oncology, Bangalore.

Advanced Training relevant to this project

Publications Details

Books/Chapters Details

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Patents/copyrights Details

Awards and/or Honours Details

Details of CO-PI

Name	Designation	Department	Institute/Organization's address	Email	Mobile No
Dr. Anand Gudur	Professor	N.A	Krishna Institute of Medical Sciences Deemed University	anandgudur@gmail.com	9890929412

Details of Co-Investigators

S.No	Name	Designation	Department/Institute/ Organization's	Email	Mobile No.	Academic Qualifications	Total number of publications
1	Dr. Kailas D. Datkhile	Senior Research Officer	Krishna Institute Of Medical Sciences Deemed University, Satara, Maharashtra	hodgeneticslab@krishnainstitute.in	9890199301	PhD	40

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Headwise Breakup

Salary Details

	Year 1	Year 2	Year 3	Total year
Salary Details	240000.00	240000.00	240000.00	720000.00

Year	*PI/CO-PI Details*	*Salary (Amount)*	*No. of Manpower*	*Designation*
1.0	ANAND GUDUR	*240000.00*	*1.0*	*Junior Research Fellow*
2.0	ANAND GUDUR	*240000.00*	*1.0*	*Junior Research Fellow*
3.0	ANAND GUDUR	*240000.00*	*1.0*	*Junior Research Fellow*

Recurring Contingency Details

	Year 1	Year 2	Total Budget
Recurring Contingency	500000.00	500000.00	1000000.00

Year	PI/CO-PI Details	Expense Type	Recurring Amount
1.0	agudur123	Other	0.00
1.0	agudur123	Contingencies	500000.00
2.0	agudur123	Other	0.00
2.0	agudur123	Contingencies	500000.00

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

Equipment Details

	Year 1	Total Budget
Equipment Amount	600000.00	600000.00

Year	PI/CO-PI Details	Equipment Name	Equipment Amount
1.0	agudur123	Spectrophotometer	600000.00

Overhead Charges Details (5% of staff and Recurring contingency)

	Year 1	Year 2	Total Budget
Overhead Charges	25000.00	25000.00	50000.00

Year	PI/CO-PI Details	Over Head Amount
1.0	agudur123	25000.00
2.0	agudur123	25000.00

Travel Details

	Year 1	Year 2	Total Budget
Travel Amount	50000.00	50000.00	100000.00

Year	PI/CO-PI Details	Travel Amount
1.0	agudur123	50000.00
2.0	agudur123	50000.00

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

* Please ignore sections which shows only heading's followed by line. Its because you haven't provided any data in corresponding sections.

MANDATE FORM

ELECTRONIC CLEARING SERVICE (CREDIT CLEAREING)/ REAL TIME GROSS SETTELMENT FACILITY FOR RECEIVING PAYMENT

DETAILS OF ACCOUNT HOLDER

1	NAME OF ACCOUNT HOLDER	KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED UNIVERSITY
2	COMPLETE CONTACT ADDRESS	Mr. P. D. JOHN, Executive Director Krishna Institute of Medical Sciences, Deemed University, Near Dhebewadi Road, Malkapur, Taluka: Karad, Dist: Satara, Pin: 415 539
3	TELEPHONE NUMBER FAX E-MAIL	02164-241555/56/57/58 Extn: 477 02164-243273, 242195 finance@kimsuniversity.in
4	NAME ADDRESS OF PROJECT INVESTIGATOR	PI: Dr. Anand Gudur Department of Oncology, Krishna Hospital & Medical Research Centre, Krishna Institute of Medical Sciences Deemed to be University, Karad Pin: 415 539 Co-PI: Dr. Kailas D. Datkhile Department of Molecular Biology & Genetics, Krishna Hospital & Medical Research Centre, Krishna Institute of Medical Sciences Deemed to be University, Karad , Pin: 415 539
5	TITLE OF THE PROJECT	Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.

BANK ACCOUNT DETAILS

1 2	BANK NAME: BRANCH NAME: COMPLETE ADDRESS: TELEPHONE NO: EMAIL	State Bank of India Karad Treasury Shaniwar Peth, Karad, Dist: Satara: Pin: 415110 02164-224949, 229286 04648@sbi.co.in
3	WHETHER THE BRANCH IS COMPUTERISED	YES
4	WHETHER THE BRANCH IS RTGS ENABLED IFSC CODE	 SBIN0004648
1	IS THE BRANCH ALSO NEFT ENABLED?	YES
2	TYPE OF BANK ACCOUNT (SB/CURRENT/CASH CREDIT)	CURRENT
3	COMPLETE BANK ACCOUNT NUMBER	11406275566
4	MICR CODE OF BANK	415002863

I hereby declare that the particular given above are current and complete. If the transaction is delayed or not effected at all for reasons of incomplete of incorrect information I would not hold the used Institution responsible.

Date: 24.4.2020

(Signature)

(Seal of PI/Co-PI)

Phone No. 02164-241555

9890929412

Dr. Kailas D. Datkhile (M.Sc. Ph.D.)
Senior Research Officer,
Department of Molecular Biology and Genetics,
KIMSDU, Karad - 415539

DR. ANAND K. GUDUR
Head of the Department
Dept. of Radiotherapy, & Oncology,
Krishna Institute of Medical Sciences
Deemed University,
KARAD - 415110, Dist. Sata
MMC/2013/09/2895

Certificate that the particulars furnished above are correct as per our records.

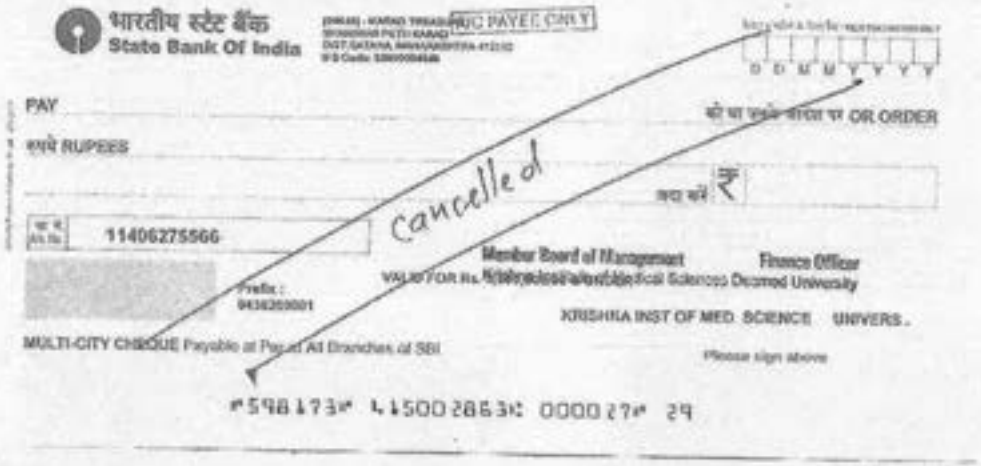
Date: 24.4.2020

(Signature)

(Seal AO of the Concerned Division/DDO)

Phone No. 02164-241550

EXECUTIVE DIRECTOR
KARADA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD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Participants Informed Consent Form

Protocol No.

Title of the Study: Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.

Name of Participant:

Name of Principal Investigator: Dr. Anand Gudur

Name of Department: Dept of Oncology

I---------- have read the information or the information has been read to me. The nature of the study possible risk and benefits to me precautions to be taken by me my rights and the responsibilities related to this study are explained to me by investigator to my satisfaction. I have understood that the information/ data obtained from this study may be used for scientific purpose (Publication/Presentation) by the investigators without revealing my identity. I have no objection for this.

I have understood that I can withdraw from this study at any point of time without giving any reason and this will not affect my future treatment in this hospital. I have understood whom to contact in case of any adverse effect/doubt.

I am also aware that the Investigator can terminate my participation in this study at any time due to any reason without taking my consent.

I hereby give my consent to participate in the study titled "Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy".

1. Signature /Left Thumb impression of Participant.
2. Signature /Left Thumb impression of participant or legal guardian case the participant is bellow 18 years.

3. Name and Signature of Impartial Witness (In case the participant is illiterate)
   Address & Contact No.

4. Name & Signature of Investigator/Co-Investigator

Case Record Proforma

1. Name of Patient :
2. Age :
3. Sex : a) Male b) Female
4. Hospital No. :
5. Date of Registration :
6. Address :
7. Occupation :
8. Symptoms & Duration :

   Difficulty in swallowing:
   Pain in the neck:
   Pain during swallowing:
   Swelling in the neck:
   Foreign body sensation:
   Change of voice:
   Earache:
   Any other:

9. Habits : Chewing –
   Smoking –
   Alchol –
   Non-veg-
   Spicy/Hot food-
10. Associated Comorbidities : TB-DM-HT-IHD-Asthma-
11. Drug allergy :
12. Past illness :
13. Family history :
14. General Physical Examination :

    ECOG :
    Height : Nutrition:
    Weight :

    Pallor/Cyanosis/Jaundice/P.E./G.L.N./Clubbing

15. Local Examination :
Primary site :
Type of growth :
Size:
Extension :
Bleeding :
Induration :
Tenderness:

16. Regional lymph node examination:
Side:
Site/Level:
Number:
Size:
Fixity:
Consistency:
Tenderness :

17. Other lymph nodes :

18. Systemic examination :
RS:
CVS:
PA:
CNS:

19. Provisional clinical diagnosis :

20. Investigations :
a) Biopsy: Primary tumor:
b) Biopsy: Lymph node:
c) X-ray STN lat. View:
d) CT scan:
e) Chest x-ray:
f) Haemogram : Hb% :
TC :
DC :
Platelets :
g) RFT :
h) LFT :
i) Any other :

21. Final Diagnosis :

22. General Management :
a) Nutrition :
b) Blood transfusion :

23. Radiation therapy :

a) Radical radiotherapy
b) Adjuvant radiotherapy

i. Date of start of RT :
ii. Date of end of RT :
iii. Energy used :
iv. Immobilization :
v. Simulation :
vi. Technique :
vii. Dose :

24. Observation :

a) Tumor response :

b) Node response :

c) Acute reaction :

25. Follow-up :

27. Residual disease :
28. Recurrence :
29. Metastasis :
30. NED months :
31. Death(cause) :
32. Remarks :

Dr. Anand K. Gudur
Head, Department of Radiotherapy & Oncology
Krishna Institute of Medical Sciences,
"Deemed to be University"
Karad: 415 539

File No. EC/19/000626

सत्यमेव जयते

Government of India
Directorate General of Health Services
Central Drugs Standard Control Organization
(Ethics Committee Registration Division)

FDA Bhawan, Kotla Road,
New Delhi - 110002, India
Dated: 16-Mar-2020

To

The Chairman
IEC KIMS DEEMED TO BE UNIVERSITY KARAD
KRISHNA INSTITUTE OF MEDICAL SCIENCES
DEEMED TO BE UNIVERSITY KARAD
KRISHNA INSTITUTE OF MEDICAL SCIENCES
KARAD NEAR DHEBEWADI ROAD MALKAPUR
KARAD Karad Satara Maharashtra - 415539 India

Subject: Ethics Committee Re-Registration No. ECR/307/Inst/MH/2013/RR-20 issued under New Drugs and Clinical Trials Rules, 2019.

Sir/Madam,

Please refer to your application no. EC/RENEW/INST/2019/7212 dated 26-Dec-2019 submitted to this Directorate for the Re-Registration of Ethics Committee.

Please find enclosed registration of the Ethics Committee in Form CT-02 vide Registration No. ECR/307/Inst/MH/2013/RR-20. The said registration is subject to the conditions as mentioned below:-

Yours faithfully

VENUGOPAL GIRDHARILAL SOMANI

(Dr. V.G. Somani)
Drugs Controller General (I) &
Central Licensing Authority

Conditions of Registration

1. The registration is valid from 16-Mar-2020 to 15-Mar-2025, unless suspended or cancelled by the Central Licencing Authority.

2. This certificate is issued to you on the basis of declaration/submission made by you.

3. Composition of the said Ethics Committee is as per the Annexure.

4. No clinical trial or bioavailability or bioequivalence protocol and related documents shall be reviewed by an Ethics Committee in meeting unless at least five of its members as detailed below are present in the meeting, namely:-
(i) medical scientist (preferably a pharmacologist);
(ii) clinician;
(iii) legal expert;
(iv) social scientist or representative of non-governmental voluntary agency or philosopher or ethicist or theologian or a similar person;
(v) lay person.

5. The Ethics Committee shall have a minimum of seven and maximum of fifteen members from medical, non-medical, scientific and non-scientific areas with at least,

(i) one lay person;

(ii) one woman member;

(iii) one legal expert;

(iv) one independent member from any other related field such as social scientist or representative of non-governmental voluntary agency or philosopher or ethicist or theologian.

6. One member of the Ethics Committee who is not affiliated with the institute or organization shall be the Chairperson, and shall be appointed by such institute or organization and one member who is affiliated with the institute or organization shall be appointed as Member Secretary of the Ethics Committee by such Institute or organization.

7. The Ethics Committee shall consist of at least fifty percent of its members who are not affiliated with the institute or organization in which such committee is constituted.

8. The committee shall include at least one member whose primary area of interest or specialisation is non-scientific and at least one member who is independent of the institution.

9. The Ethics committee can have as its members, individuals from other Institutions or Communities, if required.

10. Members should be conversant with the provisions of New Drug and Clinical Trials Rules, 2019, Good Clinical Practice Guidelines for clinical trials in India and other regulatory requirements to safeguard the rights, safety and well-being of the trial subjects.

11. The members representing medical scientists and clinicians shall possess at least post graduate qualification in their respective area of specialization, adequate experience in the respective fields and requisite knowledge and clarity about their role and responsibility as committee members.

12. As far as possible, based on the requirement of research area such as HIV, Genetic disorder, etc., specific patient group may also be represented in the Ethics Committee.

13. The Ethics Committee may associate such experts who are not its members, in its deliberations but such experts shall not have voting rights, if any

14. No member of an Ethics Committee, having a conflict of interest, shall be involved in the oversight of the Clinical trial or bioavailability or bioequivalence study protocol being reviewed by it and all members shall sign a declaration to the effect that there is no conflict of interest.

15. While considering an application which involves a conflict of interest of any member of the Ethics Committee, such member may voluntarily withdraw from the Ethics Committee review meeting, by expressing the same in writing, to the Chairperson. The details in respect of the conflict of interest of the member shall be duly recorded in the minutes of the meetings of the Ethics Committee.

16. Any change in the membership or the constitution of the registered Ethics Committee shall be intimated inwriting to the Central Licencing Authority within thirty working days.

17. The Ethics Committee shall review and accord approval to a Clinical trial, Bioavailability and Bioequivalence study protocol and other related documents, as the case may be, in the format specified in clause (B) of Table 1 of the Third Schedule of New Drugs and Clinical Trials Rules, 2019 and oversee the conduct of clinical trial to safeguard the rights, safety and wellbeing of trial subjects in accordance with these rules, Good Clinical Practices Guidelines and other applicable regulations.

18. Where a clinical trial site does not have its own Ethics Committee, clinical trial at that site may be initiated after obtaining approval of the protocol from the Ethics Committee of another trial site; or an independent Ethics Committee for clinical trial constituted in accordance with the provisions of rule 7: provided that the approving Ethics Committee for clinical trial shall in such case be responsible for the study at the trial site or the centre, as the case may be: provided further that the approving Ethics Committee and the clinical trial site or the bioavailability and bioequivalence centre, as the case may be, shall be located within the same city or within a radius of 50 kms of the clinical trial site.

19. Where a Bioavailability or Bioequivalence study centre does not have its own Ethics Committee,

bioavailability or bioequivalence study at that site may be initiated after obtaining approval of the protocol from the Ethics Committee registered under rule 8:Provided that the approving Ethics Committee shall in such case be responsible for the study at the centre:Provided further that both the approving Ethics Committee and the centre, shall be located within the same city or within a radius of 50 kms of the bioavailability or bioequivalence study centre.

20. Ethics committee shall indicate the reasons that weighed with it while rejecting or asking for a change or notification in the protocol in writing and a copy of such reasons shall also be made available to the Central Licencing Authority.

21. Ethics committee shall make, at appropriate intervals, an on-going review of the trials for which they have reviewed the protocol. Such a review may be based on the periodic study progress reports furnished by the investigators or monitoring and internal audit reports furnished by the sponsor or by visiting the study sites.

22. Where any serious adverse event occurs to a trial subject or to study subject during clinical trial or bioavailability or bioequivalence study, the Ethics Committee shall analyse the relevant documents pertaining to such event and forward its report to the Central Licencing Authority and comply with the provisions of Chapter VI, New Drugs and Clinical Trials Rules, 2019.

23. The Ethics committee shall undertake proper causality assessment of SAE's with the help of subject experts wherever required, for deciding relatedness and quantum of compensation, as per condition no (22) mentioned above.

24. Where at any stage of a clinical trial, it comes to a conclusion that the trial is likely to compromise the right, safety or wellbeing of the trial subject, the Ethics committee may order discontinuation or suspension of the clinical trial and the same shall be intimated to the head of the institution conducting clinical trial and the Central Licencing Authority.

25. Ethics committee shall comply with the requirements or conditions in addition to the requirements specified under the Drugs & Cosmetics Act, 1940 and New Drugs and Clinical Trials Rues, 2019, as may be specified by the Central Licencing Authority with the approval of the Central Government, to safeguard the rights of clinical trial subject or bioavailability or bioequivalence study subject.

26. Ethics Committee shall review and approve the suitability of the investigator and trial site for the proposed trial.

27. The Ethics Committee shall maintain data, record, registers and other documents related to the functioning and review of clinical trial or bioavailability study or bioequivalence study, as the case may be, for a period of five years after completion of such clinical trial.

28. Funding mechanism for the Ethics Committee to support their operations should be designed and approved to ensure that the committee and their members have no financial incentive to approve or reject particular study.

29. SOP's for funding of the Ethics committee in order to support their operations must be maintained. The records of income & expenditure of Ethics Committee shall be maintained for review and inspection.

30. The Chairman of Ethics Committee shall enter into MOU with head of institution, that necessary support and facilities and independence will be provided to Ethics Committee and their records will be maintained.

31. The Ethics Committee shall allow any officer authorized by the Central Licencing Authority to enter, with or without prior notice, to inspect the premises, any record, or any documents related to clinical trial, furnish information to any query raised by such authorized person, in relation to the conduct of clinical trial and to verify compliance with the requirements of these rules, Good Clinical Practices Guidelines and other applicable regulations for safeguarding the rights, safety and well-being of trial subjects.

32. Where Central Licencing Authority is of the opinion that Ethics Committee fails to comply with any provision of the Drugs and Cosmetics Act, 1940and New Drugs & Clinical Trials Rules, 2019, it may issue show cause notice to such Ethics Committee specifying therein such non-compliances and the period within which reply shall be furnished by such Ethics Committee. After consideration of the facts and reply given by the Ethics Committee, the Central Licencing Authority may take one or more actions specified under provision of Rule 14, Chapter III of New Drugs and Clinical Trials Rules, 2019.

File No. EC/19/000626

Government of India
Directorate General of Health Services
Central Drugs Standard Control Organization
(Ethics Committee Registration Division)

सत्यमेव जयते

FDA Bhawan, Kotla Road,
New Delhi - 110002, India
Dated: 16-Mar-2020

Composition of the Ethics Committee:-

Sr. No.	Name of Member	Qualification	Role/Designation in Ethics Committee
1	Dr. Virendra C Patil	MBBS (MD - Medicine)	Clinician
2	Dr. Jayshree C Awatekar	MBBS (MD - Medicine)	Clinician
3	Ms. Mangal M Kulkarni	BA-Sociology (Master in Social work)	Social Scientist
4	Dr. Ramesh S Paranjape	BSc (MSc., Ph.D-Microbiology)	Chair Person
5	Dr. Arun R Risbud	MBBS (MD,MPH)	Clinician
6	Dr. Vandana M Thorat	MBBS (MD-Pharmacology)	Member Secretary
7	Dr. Ajit V Sontakke	MBBS (MD-Biochemistry)	Basic Medical Scientist
8	Dr. Reshma Karishetti	MBBS (MD-Pathology)	Basic Medical Scientist
9	Dr. Seema Sahay	BSc (MSc.,Ph.D-Anthropology)	Scientific Member
10	Mr. Jaywant B Salunkhe	BSL (LLB)	Legal Expert
11	Ms. Manjiri V Shinde	B.Com (MS-CIT)	Lay Person

VENUGOPAL [illegible]
GIRDHARILAL
SOMANI

(Dr. V.G. Somani)
Drugs Controller General (I) &
Central Licensing Authority

FORM CT-02

(See rules 8, 9, 10 and 14)

GRANT OF REGISTRATION OF ETHICS COMMITTEE RELATING TO CLINICAL TRIAL OR BIOAVAILABILITY AND BIOEQUIVALNENCE STUDY

Registration No. ECR/307/Inst/MH/2013/RR-20

The Central Licencing Authority hereby registers and permits IEC KIMS DEEMED TO BE UNIVERSITY KARAD , KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY KARAD KRISHNA INSTITUTE OF MEDICAL SCIENCES KARAD NEAR DHEBEWADI ROAD MALKAPUR KARAD Karad Satara Maharashtra - 415539 Contact No.: 2164-241555-58 Fax No.: 2164-242710 to perform duties of ethics committee as specified in the New Drugs and Clinical Trials Rules, 2019.

2. The ethics committee shall observe the conditions of registration specified in Chapter III of the New Drugs and Clinical Trials Rules, 2019 and the Drugs and Cosmetics Act, 1940.

VENUGOPAL GIRDHARILA L SOMANI
Central Licencing Authority
Stamp

Place : New Delhi

Date : 16-MAR-2020

Undertaking from Principal Investigator

This is to certify that the Dr. Anand Gudur. Principal Investigator of the research Project entitled "Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy" does not have more than five ICMR ad-hoc projects at this moment.

24.4.2020

Dr. Anand Gudur
Department of Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

दूरभाष/TEL : 26862819, 26867373
(EPABX) : 26865694, 26862133
26865687, 26862144
26862134, 26862122
फैक्स/FAX : 26860629, 26520745
Website : http://www.dsir.gov.in

भारत सरकार
विज्ञान और प्रौद्योगिकी मंत्रालय
वैज्ञानिक और औद्योगिक अनुसंधान विभाग
टेक्नोलॉजी भवन, नया महरौली मार्ग,
नई दिल्ली - 110016

GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
Department of Scientific and Industrial Research
Technology Bhavan, New Mehrauli Road,
New Delhi - 110016

F.No. 14/781/2019-TU-V

Date: 20th November, 2019

The Registrar
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad
Taluka: Karad,
District: Satara – 415 539
Maharashtra

Subject : Recognition of Scientific and Industrial Research Organisations (SIROs).

Dear Sir,

This has reference to your application for recognition of Krishna Institute of Medical Sciences "Deemed to be University", Karad, District Satara, Maharashtra as a Scientific and Industrial Research Organisation (SIRO) by the Department of Scientific and Industrial Research under the Scheme on Recognition of Scientific and Industrial Research Organisations (SIROs), 1988.

2. This is to inform you that it has been decided to accord recognition to **Krishna Institute of Medical Sciences "Deemed to be University", Karad, District Satara, Maharashtra from 26.09.2019 upto 31.03.2022.** The recognition is subject to terms and conditions mentioned overleaf.

3. Receipt of this letter may kindly be acknowledged.

Yours faithfully,

(Dr. S.K. Deshpande)
Scientist - 'G'

INSTITUTIONAL ETHICS COMMITTEE OF KRISHNA INSTITUTE OF MEDICAL SCIENCES

KRISHNA INSTITUTE OF MEDICAL SCIENCES
DEEMED UNIVERSITY, KARAD.

(Declared U/s 3 of UGC Act, 1956 vide Notification No. F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India.)
Karad, Dist. Satara (Maharashtra State) Pin : 415 110 Tel : 02164 - 241555-8 Fax : 02164 - 243272-242170
Ethics Committee Registration No. ECR/207/Inst/MH/2013/RR-16 E-mail : contact@kimsuniversity.in
Website : www.kimsuniversity.in

Ref. No. KIMSDU/IEC/01/2018 Date: 02/02/2018

CERTIFICATE

The Institutional Ethics Committee hereby given permission to initiate the research project of protocol number 189/2017-2018 titled "GENETIC POLYMORPHISMS AND GENOMIC DETERMINANTS OF ACUTE NORMAL TISSUE TOXICITY AFTER RADIOTHERAPY FOR HEAD AND NECK MALIGNANCY" by Dr. Anand Gudur, student of Doctor of Philosophy (Oncology) to be carried out under the guidance of Dr. Suresh Bhosale, Professor, Department of Surgery, Krishna Institute of Medical Sciences Deemed To Be University, Karad.

Dr. Mrs. V. M. Thorat
Member Secretary
Institutional Ethics Committee
Krishna Institute of Medical Sciences
Deemed To Be University, Karad

Dr. R.S. Paranjape
Chairman
Institutional Ethics Committee
Krishna Institute of Medical Sciences
Deemed To Be University, Karad

KIMS "DEEMED TO BE UNIVERSITY" KARAD

Undertaking from Principal Investigator

This is to certify that the Dr. Anand Gudur. Principal Investigator of the research Project entitled "Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy" has not submitted the research proposal to any other funding agency.

24.4.2020

Dr. Anand Gudur
Principal Investigator
Department of Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

Financial Conflict of Interest

This is to certify that the Dr. Anand Gudur, Principal Investigator and Dr. Kailas D. Datkhile Co-Investigator of the research projects entitled "Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy" does not have any financial conflict of interest in this research project.

Dr. Anand Gudur
Principal Investigator
Department of Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
Malkapur, Karad

Dr. Kailas D. Datkhile
Co-Investigator
Department of Molecular Biology & Genetics
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

Declaration & Attestation

i. I/We have read the terms and conditions for ICMR Research Grant. All necessary Institutional facilities will be provided if the research project is approved for financial assistance.

ii. I/We agree to submit within one month from the date of termination of the project the final report and a list of articles, both expendable and non-expendable, left on the closure of the project.

iii. I/We agree to submit audited statement of accounts duly audited by the auditors as stipulated by the ICMR.

iv. It is certified that the equipment(s) is/are not available in the Institute/Department or these are available but cannot be spared for the project

v. It is further certified that the equipment(s) required for the project have not been purchased from the funds provided by ICMR for another project(s) in the Institute.

vi. I/We agree to submit (online) all the raw data (along with descriptions) generated from the project to the ICMR Data Repository within one month from the date of completion /termination of the project.

If any equipment already exists with the Department/Institute, the investigator should justify purchase of equipment.

Signature of the:

a) Principal Investigator
b) Co-Investigator(s)
c) Head of the Department

B. K. D. Dakwale

Date: 30/12/2019

Signature of the Head of the Institution with seal
REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Project Title: Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.

Justification for each head and sub-head:

Non-Recurring (e.g. equipments, accessories, etc.)

UV/Vis Spectrophotometer: required for verifying the quality and quantity of nucleic acids in the laboratory. Preproposal Head & Neck Cancer

Recurring

Manpower: Fellowship includes wages a project JRF @20,000/month.

Consumables: The cost of Molecular Biology reagents and chemicals required for molecular diagnostics are highly expensive hence proposed budget is required.

The molecular Biology reagents includes PCR chemicals including Taq DNA polymerase, deoxy ribo nucleotide triphosphates (dNTPs), Agarose, EDTA, Tris Buffer, etc, The RFLP reagents includes restriction endonucleases.

Contingency: For contingent expenses including stationery, minor repairs, purchase of spare parts, kits etc., this amount is required.

Travel: For sample collection, attending seminars, symposia, conferences by the PI and the JRF.

Dr. Anand K Gudur
Principal Investigator
Head, Department of Radiotherapy & Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

NON-AVAILABILITY CERTIFICATE FOR EQUIPMENT

Title of the Project: Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.

This is to certify that the equipment: UV-Visible Spectrophotometer is not available in the Institution and therefore the said equipment cannot be spared for this project.

Signature of PI 24-4-2020

REGISTRAR

Krishna Institute of Medical Sciences
"Deemed to be University"
Karad

SEAL

This is to certify that the Dr. Anand Gudur, Principal Investigator of the research Project entitled "Genetic Polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy" does not have any previous research project under ICMR research grant therefore not submitted any progress report or audited statement of account to the ICMR agency.

Dr. Anand K. Gudur
Head, Department of Radiotherapy & Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
DEEMED TO BE UNIVERSITY, KARAD.

(Declared U/s 3 of UGC Act, 1956 vide Notification No. F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India) Karad, Dist. Satara (Maharashtra State) Pin: 415 110 Tel: 02164 -241555-8
Fax: 02164 243272-242170 Website: www.kimsuniversity.in E-mail: contact@kimsuniversity.in

INSTITUTIONAL ETHICS COMMITTEE

1	Dr. Ramesh S. Paranjape	Chairman, IEC, KIMSDU, Karad
2	Dr. Mrs. V. M. Thorat	Member Secretary, IEC, Professor, Pharmacology, KIMS, Karad
3	Dr. Arun R. Risbud	Director of Research, KIMSDU, Karad
4	Dr. Seema Sahay	Scientist F, NARI, Pune
5	Dr. V.C. Patil	Professor & Head, Dept. of Medicine, KIMSDU, Karad
6	Dr. Jayashree C. Awalekar	Physician, Professor, Dept. Medicine, Bharati Vidyapeeth Medical College, Sangli
7	Dr. A. V. Sontakke	Professor & Head, Biochemistry, KIMS, Karad
8	Dr. Reshma Karishetti	Pathologist, Professor, Dept. of Pathology, JNMC, KLE University, Belagavi
9	Adv. J.B. Salunkhe	Legal Advisor
10	Mrs. Mangal M. Kulkarni	MSW
11	Mrs. Manjiri V. Shinde	Lay Person

KRISHNA INSTITUTE OF MEDICAL SCIENCES
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Fax: 02164 243272-242170 Website: www.kimsuniversity.in E-mail: contact@kimsuniversity.in

ANIMAL ETHICS COMMITTEE

Animal Ethics Committee		
Sr. No.	**Name**	**Designation**
1	Dr. S. T. Mohite	Chairman
2	Dr. Mrs. C. C. Khanwelkar	Member Secretary
3	Dr. Mrs. Vijaya A. Pandit	Main Nominee
4	Dr. John I. Disouza	Scientist from outside the institute
5	DR. Ravindra P. Kulkarni	Social aware nominee
6	Dr. Mrs. Sujata A. Jadhav	Scientists Incharge of animal house faculty
7	Dr. Mrs. A. G. Joshi	Scientist from different discipline
8	Dr. V. S. Nashte	Veterinarian

Date: 10.03.2014

Minutes of Meeting

Institutional committee for Stem Cell Research (IC-SCR)

I) Institutional committee for Stem Cell Research was constituted.

Following members of the committee were present in the first meeting:

Sr.No	Name	IC-SCR Designation	Area of Expertise	Qualification	Affiliation
1	Dr. Mohan R. Wani	Chairman	Stem Cell Science	M.V.Sc, Ph.D	Scientist F NCCS, Pune
2	Dr. Asha K. Pramanik	Member	PSM	MBBS, MD	Director of Research KIMSDU, Karad
3	Dr. M. S. Shroti	Ethics Expert	Obstetrics & Gynaecology	MBBS, MS	Retired as a Medical College Dean
4	Dr. Sachin Kadam	Stem Cell Expert	Stem cell Biology	M.Sc, Ph.D	Assistant Professor IHAT, DRDO Pune
5	Dr. S. T. Mohite	Member	Microbiology	MBBS, MD	Principal KIMSDU, Karad
6	Dr. Mrs. C. C. Khanwilkar	Member	Pharmacology	MBBS, MD	HOD, Pharmacology KIMSDU, Karad
7	Dr. Mrs. Sujata Kanetkar	Member	Pathology	MBBS, MD	Prof & HOD, Pathology KIMSDU, Karad
8	Ad. Jaywant B. Saburkhe	Legal Expert	Law	B.Sc., LL.B	Shashwat Path, Karad
9	Mrs. Sheela Kadam	Social Scientist	Medical Social Worker	B.Sc, M.S.W	PSM, KIMSDU, Karad
10	Smt.Nandatai S. Chavan	Lay Person	Networking	B.Com,SFC-IT	Clerk, Research Director Office, KIMSDU, Karad
11	Dr. Kailas D. Datkhile	Member Secretary	Molecular Biology	M.Sc, Ph.D	Sr. Research Officer, Mol. Genetics Lab, KIMSDU, Karad

II) The chair person Dr. Mohan Wani from National Centre for Cell Sciences was welcomed and he conducted the proceedings of this first meeting.

III) The purpose and scope of constitution of IC-SCR committee was explained to the committee members by the chairman.

IV) There were two research projects for approval by IC-SCR committee.

(A) MicroRNA profiling of stem cells derived from human exfoliated deciduous teeth (SHED).

(B) Use of human umbilical cord Wharton's jelly derived mesenchymal stem cells for generation of functional islets and their subsequent use for bioartificial pancreas.

These two research projects were discussed and approved for conducting stem cell research.

V) The meeting ended with vote of thanks to chair.

Dr. Mohan R. Wani
(Chairman)
IC-SCR, KIMSDU

Dr. Mohan R. Wani
M.V.Sc., Ph.D. (England)
Scientist
National Centre for Cell Science
University of Pune Campus,
Pune - 411 007, INDIA

Dr. Kailas D. Datkhile
(Member Secretary)
IC-SCR, KIMSDU

Dr. Kailas D. Datkhile
Senior Research Officer
Molecular Genetics Laboratory
Krishna Institute of Medical Sciences
Karad - 415110

KRISHNA INSTITUTE OF MEDICAL SCIENCES
DEEMED TO BE UNIVERSITY, KARAD.

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Fax: 02164 243272-242170 Website: www.kimsuniversity.in E-mail: contact@kimsuniversity.in

INSTITUTIONAL BIOSAFETY COMMITTEE

1	Dr. A. Y Kshirsagar	Chairman, IBC, KIMSDU, Karad, Medical Director, KHMRC
2	Dr. Arun R. Risbud	Director of Research, KIMSDU, Karad
3	Dr. V.C. Patil	Professor & Head, Dept. of Medicine, KIMSDU, Karad
4	Dr. G. S. Karande	Professor & Head, Dept. of Microbiology, KIMSDU, Karad
5	Dr. A. V. Sontakke	Professor & Head, Biochemistry, KIMS, Karad
6	Dr. S. R. Kanetkar	Professor & Head, Dept. of Pathology, KIMS, Karad
7	Mr. G. S. Patole	Safety Officer, KHMRC, KIMSDU, Karad
8	Dr. S.R Patil	Member Secretary, IBC, KIMSDU, Karad, Quality Manager, KHMRC

Review Committee on Genetic Manipulations

This is to certify that the Krishna Institute of Medical Sciences "Deemed To Be University" KARAD does not carry any research activities related to Recombinant DNA technology, therefore does not have Review committee on Genetic Manipulations

Registrar
Krishna Institute of Medical Sciences,
"Deemed To Be University, KARAD

Research Experience of PI during last 10 years

Details of Research Experience as Principal Investigator during last 10 years (not for novice applicants)								
Title of Study	From	To	Funding Agency	Grant ID	Grant Amount	Status: Completed/ Ongoing	Upload Project Summary in 500 words Indicating significant scientific contribution in case of completed project OR Background, Objectives, Methodology, Results in case of ongoing projects	No. of publications / patents/copy rights from this project if any
Research Project								
Intramurual	2015	2020	Intramural KIMSDU		500000.00	Completed	Studies on genetic polymorphisms in cancer related genes (Oxodative stress, DNA repair genes, Carcinogen detoxifying genes, metabolic genes and tumor suppressor genes in Head and neck cancer patients: A Hospital based control study.	Kailas D. Datkhile Rohit D. Vhava Madhavi N. Patil, Tejasvi S. Khairkar Pratik P. Durgavale, Anand Gudur Nupura Vibhute, Rinvij Panerkar Nevilli Tata, P. G. Chougale , Satish V Kakade. 2016. Role of genetic polymorphisms in DNA repair gene (XRCC1, XRCC2, XRCC3, XRCC4 XRCC5, XRCC6, XRCC7) in head and neck cancer susceptibility in rural India population: A hospital based case control study from south- wester Maharashtra. International Journal o Current Research, 8: 1; 25482-25492
								Kailas D. Datkhile, Rohit D Vhava Madhavi N. Patil, Tejasvi S. Khairkar

								Pratik P. Durgawale, P. G. Chougule Neville Tata, Ritwij Patankar, Anan Gudur, Satish V. Kakade .201(Identification of genetic polymorphism in DNA repair xenoderma pigmentosur group D (XPD) gene and its associatio with head and neck cancer susceptibilit in rural Indian population: A hospit based case-control study from south western Maharashtra. Internationa Journal of Research in Medica Sciences. 4: 6; 1997-2005.
								Kailas D. Datkhile, Madhavi N. Pati Tejasvi S. Khamkar, Rohit D. Vhava Pratik P. Durgawale, Pandurang C Chougule, Anand Gudur Satish V Kakade .2017. Genetic polymorphism in DNA repair genes (hOGG1 & APE1 and their association with oral cance susceptibility in rural Indian populatior A hospital based case-control study International Journal of Medical Scienc & Physical Health : 6 (1) 23-28.
								Kailas D. Datkhile, Madhavi N. Patil. Pratik P. Durgawale, Kalpita S. Kerabu, Shreepad A. Joshi. Anand Gudur, Rashmi A. Gudur, Satish V. Kakade. Genetic polymorphisms in carcinogen detoxifying genes and risk of cervical cancer in Maharashtra, India: a case control study. International Journal of biomedical Research. 2019. 10(4).e510
								Datkhile Kailas D, Patil Madhavi N, Durgawale Pratik P, Gudur Anand, Gudur Rashmi A. Role of *p53* and *p21* Polymorphisms in Cervical Cancer Risk among Rural Population of South-Western Maharashtra: A Case-Control Study. Indian Journal of Public Health Research & Development. 2019, 10 (10) 277-281.

								Madhavi N. Patil, KailasD. Dakhale Anand Gudur, Rashmi A. Gudur, Satis S. Kakade, Sandeep S. Kadam Polymorphism in XRCC1, XRCC2 an XRCC3 genes and risk o gastrointestinal cancer: A case contr study from south-western Maharashtr Indian Journal of Public Health Researc & Development. 2020. 11 (3), 997-1001
								1) Two Cases of Extraskeletal Osteosarcoma with Divergent Pathogenesis Jyotsna Wader, A Y Kshirsagar, Sujata Kumbhar, Anand Gudur, Sharda Sarda, Pankti Patel International Journal of Health Sciences & Research Vol.5; Issue: 7; July 2015
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Dr. Anand K Gudur
Principal Investigator
Head, Department of Radiotherapy & Oncology
Krishna Hospital & Medical Research Centre
Krishna Institute of Medical Sciences
"Deemed to be University"
Malkapur, Karad

Preproposal for ICMR Research Grant

1. Title of the research project:

Genetic polymorphisms and Genomic determinants of acute normal tissue toxicity after radiotherapy for head and neck malignancy.

2. Introduction:

Head and neck cancer (HNC) is the fifth most common type of malignancy worldwide and second in the developing world including India. HNC increased significantly worldwide in last few years and represents the leading cause of cancer death in men as well as women in the developing world. Several therapies and treatment protocols are used for HNC, including surgery, Chemotherapy (CT) and radiotherapy (RT), more recently immunotherapy and gene therapy. Because of systemic RT and CT genotoxicity, one of the important side effects is a secondary cancer that can result from the activity of radiation and anti-neoplastic drugs on healthy cells. Radiotherapy is an important and commonly used modality in cancer treatment, but normal tissues both in the vicinity of the target area and the pathway of the radiation beam are inevitably irradiated, which may result in a spectrum of normal tissue adverse effects. The severity of radiotoxicity can be directly associated with the radiation dosimetry and the dose-volume differences. The prescribed dose of radiotherapy in most malignant diseases is restricted by the tolerance of normal tissue to radiation. However, patients exhibit large variability in normal tissue toxicity even to the same treatment schedule. Some patients display hyper-sensitivity to standard radiotherapy, while typically sensitive patients can receive higher doses of radiotherapy improving the likelihood of a cure for malignant tumors. In recent years, accumulating evidence has supported the hypothesis that the risk of radiotoxicity correlates with genetic susceptibility. However, studies associating repair gene polymorphisms and clinical radiosensitivity are rare. Only the gene variants of XRCC1 and XRCC3 have been shown to correlate with hypersensitivity to radiotherapy. It is likely that further DNA repair gene as well as oxidative stress related genes and tumor suppressor gene polymorphisms may be associated with ionizing radiation hypersensitivity. Studies focusing on this aspect are still lacking especially in Indian backround therefore there is a scope to gather such an information which will be benefitted especially in future therapeutic decisions based on genetic makeup of the patient to determine radiosensitivity. Therefore this study aimed to assess genomic determinants of normal tissue toxicity after radiotherapy for head and neck malignancy. The major objectives of the research project are to examine the association of polymorphisms cancer related genes and head and neck cancer with development of radiotherapy reactions and to find a biomarker which can predict the development of radiation induced acute toxicity prior to radiation therapy. Also this study aimed to assess the correlation between clinical radio sensitivity and SNPs in the related pathway genes which may have an effect on the cancer patients after receiving radiotherapy.

3. Novelty

Radiotherapy is an integral component of a multimodality treatment approach in head and neck cancer. Previous interest has primarily focused on tumour radiocurability but a shift towards cancer survivorship in recent years has seen growing interest in understanding radiation-induced complications in normal tissues. Irradiated patients demonstrate variable normal tissue responses to radiotherapy despite apparently uniform treatment, while some of this may be due to stochastic effects; evidence supports the influence of

deterministic variations in radioresponsivenes. Unsurprisingly, much work has not been focused on the role of single nucleotide polymorphism because it is the most common cause of the differences observed in DNA sequence among individuals. The ability to predict a predisposition for severe radiotherapy-induced adverse effects in normal tissues could potentially aid treatment decision-making, particularly in those with 'intermediate risk' disease. Avoiding or reducing radiation in these patients could lessen the likelihood of radio toxicity-related morbidities and may also potentially reduce the burden of healthcare costs incurred for the supportive care required for these conditions. The approaches to find out biomarkers

Cellular and molecular approaches are being explored to find a biomarker which can predict the development of radiation induced acute toxicity prior to radiation therapy. SNPs in radiation responsive genes may be considered as an approach to develop tools for finding the inherited basis of clinical radio sensitivity.

Genetic association studies (GAS) have been employed to identify causal functional SNPs in normal tissue radiotoxicity

4. Applicability

Some patients display hyper-sensitivity to standard radiotherapy, while typically sensitive patients can receive higher doses of radiotherapy improving the likelihood of a cure for malignant tumors. If the individual risk of adverse effects can be predicted prior to radiotherapy, it would be in recent years accumulating evidence support the hypothesis that the risk of radiotoxicity correlates with genetic susceptibility. Single nucleotide polymorphisms account for most known genetic variation. By altering the amino acid composition of the encoded proteins, SNPs in DNA repair genes may alter protein function and an individual's capacity for the repair of damaged DNA. Studies associating repair gene polymorphisms and clinical radiosensitivity, however, are rare. It is likely that further DNA repair gene polymorphisms may be associated with ionizing radiation hypersensitivity.

6. Present knowledge and relevant bibliography relating to the problems(about 250 to 300 words)

Head and neck carcinoma (HNC) is the fifth most common cancer worldwide and is associated with low survival and high morbidity when diagnosed in advance stage (Siegel et al., 2011). HNC is a major cancer problem in Asian countries like China, Pakistan, Thailand and India. The main causes of head and neck carcinogenesis are tobacco, alcohol consumption, ultraviolet radiation, reactive oxygen species and genetic susceptibility which include the genes regulating the cell cycle or those involved in DNA repair mechanisms (Sabir et al., 2013). The DNA repair pathway homologous

recombinant repair (HRR) constitute key pathway to maintain genomic stability. Homologous recombinant repair supports DNA replication and aids replication restart after fork stalling or breakage (Yin et al., 2012). The key molecules of HRR pathway are RAD51 and X-ray cross-complementing group 3 (XRCC3) (Areeshi 2013). RAD51 protein polymerizes onto single-stranded DNA (ssDNA) to form a helical nucleoprotein filament (Mimitou et al., 2009). RAD51 is known to play its role in all three stages of HRR pathway and catalyses the invasion of broken ends of the DSB into intact sister chromatid (Zhang et al., 2014). Mutations of RAD51 result in defects in the repair of double-stranded DNA breaks. Loss of RAD51 function would therefore be expected to result in an elevated mutation rate, thus leading to accumulation of DNA damage and, subsequently to increased cancer risk (Shin et al., 2008; Venkitaraman, 2009). The RAD51 SNPs (135 G/C and 172 G/T) present in the 5'UTR have been reported to be associated with altered gene transcription and may be involved in carcinogenesis (Cheng et al., 2014). XRCC3 is the second important member of HRR pathway and takes part in DSB repair as it causes slowing of DNA synthesis and recruit RAD51 at repair sites (Mao et al., 2014).

Several therapies and treatment protocols are used for HNC, including surgery, CT (Argiris et al 2008) and radiotherapy (RT) and more recently, immunotherapy (Agada et al 2009), gene therapy (Ayllon et al 2008) and photodynamic therapy (Corti et al 2007). However, the choice of therapy depends on the tumor staging and approaches, which are aimed at organ preservation. Because of systemic RT and CT genotoxicity, one of the important side effects is a secondary cancer that can result from the activity of radiation and antineoplastic drugs on healthy cells. Ionizing radiation can affect the DNA, causing single and double-strand breaks, DNA-protein crosslinks and oxidative damage. The severity of radiotoxicity can be directly associated with the radiation dosimetry and the dose-volume differences. Regarding CT, cisplatin is still the standard protocol for the treatment of squamous cell carcinoma, the most common cancer located in the oral cavity we present an update of the systemic activity of RT and CT for HNC, with a focus on their toxicogenetic and toxicogenomic effects. The severity of radiotoxicity can be directly associated with the radiation dosimetry and the dose-volume differences (Bentzen et al 2010). While epidemiological studies have demonstrated the correlation

between the formation of a secondary tumor with exposure to moderate-to-high doses of ionizing radiation, a statistically significant increase has hardly been described with low doses of radiation (Suzuki et al 2012). The principal RT effects in normal tissue are acute radiotoxicity (mucositis, dysphagia and dermatitis) that occurs in tissues with rapid turnover rates and late radiotoxicity, subcutaneous skin fibrosis and osteoradionecrosis in tissues with slower turnover rates; these effects may become evident months or years after therapy (Ghazali et al 2012). There are variable normal tissue responses to RT (Safwat et al 2002), and this may be due to the stochastic or deterministic variation effects in radio responsiveness (Bentzen et al 2010).

Radiotherapy is an important and commonly used modality in cancer treatment, but normal tissues both in the vicinity of the target area and the pathway of the radiation beam are inevitably irradiated, which may result in a spectrum of normal tissue adverse effects (Bentzen et al 2003). The prescribed dose of radiotherapy in most malignant diseases is restricted by the tolerance of normal tissue to radiation (Stone et al 2003). However, patients exhibit large variability in normal tissue toxicity even to the same treatment schedule (Andreassen et al 2002). Some patients display hyper-sensitivity to standard radiotherapy, while typically sensitive patients can receive higher doses of radiotherapy improving the likelihood of a cure for malignant tumors (Bourguignon et al 2005). If the individual risk of adverse effects can be predicted prior to radiotherapy, it would In recent years, accumulating evidence has supported the hypothesis that the risk of radiotoxicity correlates with genetic susceptibility (Ho et al 2006, Azria et al 2008). Single nucleotide polymorphisms (SNPs) account for most known genetic variation (Andreassen 2006, De et al 2005). By altering the amino acid composition of the encoded proteins, SNPs in DNA repair genes may alter protein function and an individual's capacity for the repair of damaged DNA (Zou et al 2014). However, studies associating repair gene polymorphisms and clinical radiosensitivity are rare.

It is likely that further DNA repair gene polymorphisms of XRCC1 and XRCC3 may be associated with ionizing radiation hypersensitivity (Moullan et al 2003, Angele et al 2003). Among the DNA damage repair genes, *XRCC1* is the most frequently researched candidate. The *RAD51* gene family consists of several proteins that show DNA-stimulated ATPase activity and play a central role in the homologous

recombination repair activation. A functional SNP *rs1801320* (G > C), located in the promoter region of *RAD51*, resulting in upregulated gene expression level through an increased promoter activity by substituting G for C allele, displayed a predictive value for RP development in NSCLC patients and dysphagia among HNC patients after radiotherapy (Pratesi, N. et al. 2011), which is also an independent prognostic factor for OS in NSCLC patients (Yin, M. et al. 2011). Moreover, a recent study firstly confirmed that *RAD51 rs1801321* (G > T) T allele carriers may have a better OS as for cervical cancer patients upon radiotherapy (Nogueira, A. et al. 2012).

Evidences also demonstrated that *rs1042522* (G > C), SNP of TP53 has a potential in predicting radiation responses, such as radiation-induced telangiectasia for BC patients (Chang-Claude, J. et al. 2009). A study with a relatively small sample size of prostate cancer patients noted a new SNP of *TP53*, *rs35117667* (C > T), which was reported for the first time and has a predictive value for developing acute skin adverse effects (Cintra, H.S. et al. 2013). Additionally, *TP73 rs3765701* (A > G) was associated with survival in stage III–IV NSCLC patients receiving chemoradiation therapy (Cintra, H.S. et al. 2013).

Several trials have been conducted based on the hypothesis that polymorphisms in genes involved multiple pathways may interfere with an individual's DNA repair capacity and thus further influence the occurrence of radiation-induced adverse effects (Kuhne et al 2004, Liu et al 2015). Previous studies on the association between XRCC polymorphisms and radiation-induced adverse effects have reported inconclusive results. Therefore we proposed to evaluate the association between XRCC, RAD51, GSTs, Oxidative stress related genes polymorphisms and the risk of radiation- induced adverse effects. We also propose to evaluate the possible association of genetic variants in the three genes hOGG1, APE1 and XPD, and the risk of acute normal skin reactions after therapeutic radiotherapy in a prospective study of head and neck cancer patients receiving radiotherapy of the with or without chemotherapy.

5. Description of the project:

Design of the Study:

Patients of dignosed head and neck cancer coming to the Medical Oncology OutPatient Department of KIMSDU, Karad are Screened for enrolment based on predefined inclusion and exclusion criteria. After obtaining written informed consent from them , the clinical details with examination findings and relevant reports are noted down in the proforma. Blood samples will be collected for genetic polymorphism studies. After

giving radiation therapy patients will be followed post-therapy to assess for the toxicities. The clinical and radiological responses will be documented as per RECIST criteria at planned interim and end of treatment assessment.

The study will be carried out between January 2018- Decembaer 2020.

Study Population:

Proven head and neck cancer patients will be used for this study. Detailed information of clinicopathological record and data on demographic factors, carcinogen exposure,

Study Protocol

The study will be conducted from 200 HNC patients undergoing radiotherapy or chemo radiotherapy at Krishna Hospital, Karad with a prior approval by the University Ethical Committee and a written informed consent from the patients before collecting blood prior to RT. All patients will be treated using IMRT or 3DCRT. Gross tumor volume (GTV), Clinical Target Volume (CTV) and Planning target volume (PTV) were defined by using these planning CT scan. Gross tumor volume encompassed all known gross disease as defined by clinical physical examination and imaging findings. Patients with gross disease were treated using Varian Linac Accelerator 6-MV X-ray with the total tumor dose of 60- 66 Gy (2 Gy per day for 5 days week). Patients after surgical resection having positive margins were given a dose of 66 Gy in 33 fractions. Patients with no positive margins were given 60 Gy in 30 fractions. Cisplatin chemotherapy (30 mg/m^2 for once in a week for total of 5-6 cycles) will be given to the patients if their RFT is normal. Patients with recurrent tumor and distant metastasis were excluded. Acute adverse events (oral mucositis and skin reaction) will be recorded during and after completion of therapy according to RTOG criteria and the association between genetic polymorphism and oral mucositis and skin reaction will be evaluated for the increased risk of developing these normal tissue adverse reactions. In the present study, single nucleotide polymorphisms/deletions in selected candidate genes related to DNA damage and repair, antioxidant response and detoxification enzymes and profibrotic cytokine will be analysed. SNPs in candidate radiation responsive genes like ATM, XRCC1, XRCC3, XRCC4, OGG1, RAD51, SOD2, CAT and GST will be selected.

Genomic DNA isolation from whole blood

Five milliliter (mL) of whole blood from patients and controls will be collected in sterile purple top vacutainer after receiving informed consent. Genomic DNA extraction will be carried out from the peripheral blood sample using Purelink genomic DNA extraction and purification Kit (Invitrogen, Life technologies) following the manufacturer's instructions. After the quantitative and qualitative analysis of genomic DNA the final samples will be preserved in Tris-EDTA ($T_{10}E_1$) buffer (pH 8) at -20°C temperature until further use.

Genetic Polymorphism assays

Genotyping of different genes will be performed by PCR-RFLP methods with appropriate primer sets. The primers will be designed to amplify the regions of DNA that contain polymorphic sites of interest. The PCR amplification will be carried out separately under different conditions in 20 micro liter (µL) reaction mixtures containing 1X PCR buffer (10 mili molar (mM) Tris-HCl (pH 9.0), 50 mM KCl 1.5 mM MgCl2, 0.01% gelatin), 0.2 mM each dNTP, 10 picomole (pmol) of each primer listed in Table-1, 1U *Taq DNA* polymerase (GeNei, Merck Bioscience) and 100 nanogram (ng) of purified genomic DNA template. The reaction mixtures will be subjected to PCR amplification with a Master Cycler Gradient PCR (Eppendorf). After performing PCR programme for

each of the reaction, the PCR products will be analyzed by agarose gel electrophoresis in Tris-Acetate-EDTA (TAE) buffer. The agarose gels will be stained with ethidium bromide (10 mg/mL) and visualized under UV Transilluminator and photographed in gel documentation system (BioRad Laboratories). After confirmation of DNA amplification, each PCR product will be digested with an appropriate restriction enzyme for genotyping. Ten micro liters of the PCR products will be digested at 37°C overnight with specific restriction enzymes in 20 µL reaction mixtures containing buffer supplied with each restriction enzyme. After the overnight incubation, digestion products will be then separated on a 2-3% low EEO agarose (GeNei) gel at 100 V for 30 min stained with ethidium bromide and photographed with Gel Documentation System (BioRad).

Statistical Analysis

The frequencies for the *RAD51, RAD51B, XRCC, GSTs, SOD, CAT, GPx* genotypes in the control and patients populations will be determined and the differences in genotype and allele frequency between cancer patients and controls will be evaluated with the chi-square test. The odds ratio (OR) and corresponding 95% confidence intervals (CI) will be determined through unconditional multiple logistic regression. Odds ratio will be estimated to test whether any association exist between the grade of acute toxicity and selected SNP/haplotypes. Each polymorphism will be tested for deviation from Hardy-Weinberg equilibrium by chi-square test. Statistical significance will be analysed by Fisher exact test. Statistical analysis will be carried out using SPSS 11 Software

Feasibility: There is increasing need of understanding the genetic markers in determining human susceptibility to the chemotherapy toxicity from the rural population. This information will be

helpful for the theraapeutic decisions based on genetic makeup of the patients receving chemotherapy. .

Outcome: The prevalence of breast cancer is very high in rural areas of South- western Maharashtra which is a leading cause of most cancer related deaths in rural areas. This study will help to find out the significant association of polymorphisms of chemotherapy drug-metabolising enzyme genes their correlation with toxicity in non-metastatic breast cancer patients receiving chemotherapy.

Budget:

Component	Ist Year	Ind Year	Ird Year	Total
A. Recurring				
Fellowship				
JRF 20000/month	240,000/-	240,000/-	240,000/-	720,000/-
Consumables	300,000/-	300,000/-	----------	6,00,000/-
Travel	50,000/-	50,000/-	----------	100,000/-
Contingency	200,000/-	200,000/-	----------	4,00,000/-
B.Non-Recuring				
Equipments				
UV/vis spectrophotometer	6,00,000/-	----------	----------	6,00,000/-
Overhead	56,500/--	56,500/-	----------	1,13,000/-
Grand Total	**14,46,500/-**	**8,46,500/-**	**2,40,000/-**	**25,33,000/-**

Justification for each head and sub-head:

Non-Recurring (e.g. equipments, accessories, etc.)

UV/Vis Spectrophotometer: required for verifying the quality and quantity of nucleic acids in the laboratory.Preproposal Head & Neck Cancer

Recurring

Manpower: Fellowship includes wages a project JRF @20,000/month.

Consumables: The cost of molecular biology reagents and chemicals required for molecular diagnostics are highly expensive hence proposed budget is required.

Contingency: For contingent expenses including stationery, minor repairs, purchase of spare parts, kits etc., this amount is required.

Travel: For sample collection, attending seminars, symposia, conferences by the PI and the JRF.

Dr. Anand Gudur
De;artment of Oncology
Krishna Institute of Medical Sciences
Deemed to be University
Malkapur, Karad 415 110

Dr Anand K. Gudur is Clinical & Radiation Oncologist and Pain & Palliative Care specialist presently working as Head, Dept of Oncology at at Krishna Institute of Medical Sciences, Karad.

He has done his MBBS from Karnataka University, Dharwad, DM (RT) from prestigious Kidwai Memorial Institute of Oncology, Bangalore, and DNB Oncology from National Board of Examination New Delhi. He has been trained and worked in various top cancer institutes in India

He has done Basic & Advanced Course in Palliative Medicine from Amrita Institute of Medical Sciences, Cochin and WHO Training for Trainers in Palliative care from Tata Hospital, Mumbai

He has also done P.G.Diploma Hospital Administration from Command Hospital Air Force, Bangalore, P.G. Diploma Medico legal Systems and Certificate course in Clinical Research from Pune.

He is Executive member, Association of Radiation Oncologist of India.

Central council member, Indian Association of Palliative Care

Vice President, Assoc of Oncologists of Maharashtra, Karnataka, Goa.

He has been part of Maharashtra Cancer warrior in charge of Satara Dist for tobacco awareness.

Visited, attended and given presentations in various national & international conferences.

He has 6 publications and guided & assisted more than 50 research papers for various postgraduate, PhD research papers.

He has treated highest number of cancer patients in western Maharashtra in last 10 years. He has participated in clinical trials.

He has organised various cancer awareness programmes in public forums and tobacco awareness programmes in schools and colleges.

Date- 16/12/2019

To,

Research cell.

SDS, KIMSDU.

From,

Prashant jadhav

MOU coordinator,

RIT Islampur

Subject- submission of list of research / activity done under MOU/ Collaboration.

Respected sir/ madam,

Here with reference to above motioned subject we are forwarding list of research done with collaboration / MOU in our institute/lab/ facility.

Sr no	Title of research	Name of principal investigator	Period of research (year)	Name of department/ lab in which research was conducted	Name of institute / university.
1	Comparative Evaluation Of Microhardness And Fluoride Release Of Pit And Fissure Sealants: An Invitro Study.	Dr. Pooja mapara	2019	Mechanical	RIT Islampur
2	Comparative Evaluation Of Change In Microhardness Of Demineralized Enamel Underneath Bio-Smart Pit And Fissure Sealants.	Dr. Dhanshri khade	2019	Mechanical	RIT Islampur
3	Comparative evaluation of antimicrobial efficacy, depth of penetration into dentinal tubules and effect on microhardness of root dentin by sodium hypochlorite, neem extract and gau ark as a root canal irrigant: an in vitro study.	Dr. Dhanshri khade	2019	Mechanical	RIT Islampur

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2	Comparative Evaluation Of Antibacterial Efficacy And Microhardness After Adding Different Combinations Of Triple Antibiotic Powder In Conventional GIC Restorative Cement.	Dr. Pradnya chaudhari	2019	Mechanical	RIT Islampur
3	"Evaluation Of Change In Microhardness By Application Of MI Varnish On Primary Tooth Enamel, Affected By Use Of Frequently Prescribed Pediatric Syrups : An In-Vitro Study".	Dr. Ankita maurya	2019	Mechanical	RIT Islampur

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Respected sir/ madam,

Here with reference to above motioned subject we are forwarding list of research done with collaboration / MOU in our institute/lab/ facility.

Sr no	Title of research	Name of principal investigator	Period of research (year)	Name of department/ lab in which research was conducted	Name of institute / university.
1	Comparative Evaluation Of Anti-Microbial Efficacy And Diametral Tensile Strength Of Modified Cention-N.	Dr. Shreya bapat	2019	Mechanical	RIT Islampur
2	Comparative Evaluation Of Diametral Tensile Strength Of Zirconia And Silver Reinforced Glass Ionomer Cements.	Dr. Pradnya chaudhari	2019	Mechanical	RIT Islampur

This is for your records and future references.

Thanking you.

Prashant jadhav

MOU coordinator, RIT Islampur

Dean
School of Dental Sciences,
KIMS "Deemed To Be University", Karad

परिष्कृत वैश्लेषिक यंत्र सुविधा
भारतीय प्रौद्योगिकी संस्थान मुंबई
पवई, मुंबई-400 076, भारत
Sophisticated Analytical
Instrument Facility
Indian Institute of Technology Bombay
Powai, Mumbai-400 076, India

Tel : (+91-22) 2576 7691
(+91-22) 2576 7692
(+91-22) 2576 7690
Website : www.rsic.iitb.ac.in

Original For Recipient/Duplicate

TAX INVOICE

PAN: AAATI1446A GSTIN: 27AAATI1446A1Z7 TAN: MUMI00377G

Ref. No.3166/2020.01.31/LRS-61, SAIF | Phone: +912225767691/ 2 | E-mail: office.saif@iitb.ac.in

Invoice No.: ITBINT192002419 Invoice Date: 03.02.2020

Bill To:

Contact Person: Dr.Ankita Maurya C/o. Dr.Shashikiran N.D, (Dean)
Name: Krishna Institute of Medical Sciences, Karad
Address: Dept. of Paedodontics & Preventive Dentistry,
"Deemed to be University" Karad, School of Dental Sciences, Karad, District: Satara 415539
State / Union Territory: Maharashtra
State / Union Territory Code: 27
GSTIN/UIN:

Place of Supply: 27 - Maharashtra

GST chargeable on RCM - NO

Sr. No.	Description of Service / Material	HSN/ SAC	Taxable Value (INR)	CGST		STGST/ UTGST		IGST		Total Value (INR)
				Rate %	Amount (INR)	Rate %	Amount (INR)	Rate %	Amount (INR)	
1	Facility Usage Charges	99834	1200.00	9.00	108.00	9.00	108.00	0.00	0.00	1416.00
	Total Value		1200.00		108.00		108.00		0.00	1416.00
Net Payable Value(in Figure)										1416.00
Net Payable Value(in Words)					One Thousand Four Hundred Sixteen Rupees					

Bank Details:
Account Name: Indian Institute of Technology Bombay
Bank Name: State Bank of India, IIT Powai Branch, Mumbai-400076,India
Bank IFSC Code: SBIN0001109
Account Number: 00000010725729173
Swift Code: SBININBB519

In case of e-payment, please send URN with reference to invoice number at office.saif@iitb.ac.in and onlinepay@iitb.ac.in
For payment by demand draft, to be drawn in favour of Registrar, IIT Bombay, payable at Mumbai.

Authorized Signatory

Dean
School of Dental Sciences,
KIMS "Deemed To Be University" Karad

13-10-2020, 12:28

To,

Date- 23/09/2020

Research cell,

SDS, KIMSDU.

From,

Dr Varun Kunte

Arthrose Headaches, Facial Pain & TMJ Clinic,
My health medical centre 307
Gateway Plaza, Hiranandani Gardens,
Opp. Powai Plaza, Mumbai 400076

Subject – submission of list of research done under collaborative research activity.

Respective sir/madam,

Here with reference to above mention subject we are forwarding list of research done with collaborative activity under MOU.

Sr. no	Title of research	Name of Principle investigator	Period of research (month and year)	Name of Department / lab in which research was carried out	Name of institute/ university.
1	Clinician accuracy when subjectively interpreting articulating paper markings	Dr. Shubha Joshi	21/08/2020	Arthrose Headaches, Facial Pain & TMJ Clinic	Arthrose Headaches, Facial Pain & TMJ Clinic

This is for your record and future reference.

Thanking you.

(Name, Designation, Sign, Stamp/Seal)

Dr Varun R. Kunte
A21964
M.D.S (OMR)
Founder, CEO
ARTHROSE
Certified BTR (2nd in Asia)
Member ICCMO

Dean
School of Dental Sciences,

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY"

(Declared under section 3 of the UGC Act. 1956 vide Notification No F.9-15 /2001-U.3 of the MHRD, Govt of India)

Karad, Dist. Satara (Maharashtra State) Pin: 415 110 Tel: 02164 -241555-58 Fax: (02164) 241070
Website: www.kimsuniversity.in E-mail: kipdean@rediffmail.com

KRISHNA INSTITUTE OF PHARMACY, MALKAPUR, KARAD

Date: 29/02/2020

To,

The Director of Research,

KIMS Deemed to be University, Karad

Subject: Submission of Collaborative Research Project.....Regarding

Dear Sir,

With respect to the subject cited above, as a part of MOU signed between Krishna Institute of Pharmacy, KIMSDU, Karad and College of Pharmacy, JSSATE, Noida, herewith submitting the collaborative research project entitled as "Development of Polymethylmethacrylate-grafted-gellan gum (PMMA-G-GG) to Formulate pH Sensitive Drug Delivery System for Antidiabetic Therapy".

The original idea of this project is from our Institution. The principal investigator (PI) is Dr. Rohit Bhosale (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Other investigator/Co-PI is Dr. Anindita De (Assistant Professor, College of Pharmacy, JSSATE, Noida).

The necessary technical support, some costly laboratory facilities including instrumentation facilities, and characterization studies like elemental analysis, will be provided by College of Pharmacy, JSSATE, Noida.

Kindly consider this proposal for approval.

Thanks and with best regards.

Dr. Rajendra C. Doijad
Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

College of Pharmacy
JSS Academy of Technical Education
C-3/A, Sector – 62, Noida - 201309

Date: 28/02/2020

To,
Dr. Rajendra C. Doijad,
Dean,
Faculty of Pharmacy, KIMSDU, Karad

Subject: Willingness to agree for utilization of research facilities and providing the technical support for the collaborative research project between Krishn Institute of Pharmacy, KIMSDU, Karad and College of Pharmacy, JSSATE, Noida.....Regarding

Dear Sir,

With respect to the subject cited above, and in accordance with the MOU signed between **Krishna Institute of Pharmacy, KIMSDU, Karad and College of Pharmacy, JSSATE, Noida**, for the collaborative research, the research project entitled as **"Development of Polymethylmethacrylate-grafted-gellan gum (PMMA-G-GG) to Formulate pH Sensitive Drug Delivery System for Antidiabetic Therapy"** has been submitted to Krishna Institute of Medical Sciences Deemed to be University, Karad for approval of grant in aid.

The principal investigator (PI) is **Dr. Rohit Bhosale** (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Other investigator/Co-PI is **Dr. Anindita De** (Assistant Professor, College of Pharmacy, JSSATE, Noida), whose research proposal is forwarded herewith for approval to utilize research facilities and for technical support from our institute.

This is for your kind information and perusal.

Thanking You.

Yours Faithfully,

Dr. H. G. Shivakumar,
Principal,
College of Pharmacy, JSSATE, Noida.

New Project Proposal

(Proposal for Collaborative Research Work)

(For Departmental/Staff proposals)

SECTION-A

(GENERAL INFORMATION)

1. (a) Title of the Research Project:

DEVELOPMENT OF POLYMETHYLMETHACRYLATE-GRAFTED-GELLAN GUM (PMMA-G-GG) TO FORMULATE pH SENSITIVE DRUG DELIVERY SYSTEM FOR ANTIDIABETIC THERAPY

(b) What is new in this topic that others have not done and not already printed in the Journals or textbooks?

In current years, to design the modified drug release dosage forms, natural gums have been widely used. Moreover, they form three dimensional monomeric networks therefore trapping water, drug, and other excipients in it. Consequently, the drug release can be extended to the desired level. However, natural gums have certain disadvantages such as; susceptibility to the microbial contamination because of its moisture content, batch to batch variation because of geographical and environmental effect, unspecific targeting, uncontrolled hydration rate, and reduced viscosity upon storage.

In order to overcome such disadvantages of natural gums, they can be tailored or modified or grafted in order to obtain the desired compound via different ways to make them superior and customized. Furthermore, polysaccharide modification suggests the preeminent applications of polysaccharides in controlled and/or sustained release drug delivery systems via graft copolymerization of other monomers and/or polymers onto the backbone of polysaccharides.

Graft copolymerization or grafting is an uncomplicated method used for modifying the polymer structure by incorporating desired properties and overcoming the already existed disadvantages to make them fetching biomaterials for various applications in drug delivery systems. Grafting of gellan gum (GG) with methylmethacrylate (MMA) to make it pH sensitive sustained release polymer and then using it to formulate antidiabetic formulation (solid oral) will be the novelty of this work.

2. **Name and Designation of**

Principal Investigator (PI)	:	Dr. Rohit R. Bhosale [M. Pharm., Ph.D.]
Designation	:	Assistant Professor
Department	:	Department of Pharmaceutics, Krishna Institute of Pharmacy, KIMSDU, Karad.
Other Investigator/Co-PI	:	Dr. Anindita De [M. Pharm., Ph.D.]
Designation	:	Assistant Professor
Department	:	Department of Pharmaceutics, College of Pharmacy, JSSATE, Noida.
Month and Date of Registration	:	28/02/2020

3. **Name of the Sponsor** : Krishna Institute of Medical Sciences Deemed to be University (KIMSDU), Karad.

4. **Duration of Research Project** : 24 Months

a) Period which may be needed for collecting the literature and resources, and the data	:	5 Months
b) Period that may be required for experimental laboratory work, and for analyzing the data	:	15 Months
c) Period that may be required for finalizing the data and submission of project	:	4 Months

5. Date of submission of the project to the Department of Research for protocol review committee:

6. Date of submission of the modified project (Modified as per suggestions made by the protocol review committee to the Department of Research for IEC review):

7. Signature (with date)

a) Applicant Staff :

b) Head of the Department : –

c) Dean/Principal of the Faculty :

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad.

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

Designation	:	
	:	

Other Investigator/Co-PI	:	Dr. Anindita De [M. Pharm., Ph.D.]
Designation	:	Assistant Professor
Department	:	Department of Pharmaceutics, College of Pharmacy, JSSATE, Noida.

Month and Date of Registration	:	28/02/2020
3. Name of the Sponsor	:	Krishna Institute of Medical Sciences Deemed to be University (KIMSDU), Karad.
4. Duration of Research Project	:	24 Months
a) Period which may be needed for collecting the literature and resources, and the data	:	5 Months
b) Period that may be required for experimental laboratory work, and for analyzing the data	:	15 Months
c) Period that may be required for finalizing the data and submission of project	:	4 Months

5. Date of submission of the project to the Department of Research for protocol review committee:

6. Date of submission of the modified project (Modified as per suggestions made by the protocol review committee to the Department of Research for IEC review):

7. Signature (with date)

a) Applicant Staff — Anindita De

b) Head of the Department —

c) Dean/Principal of the Faculty

Dean,
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KIMS "Deemed To Be University" Karad 415539

8. Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

Head of the Department

Biochemistry	:	NA
Pathology	:	NA
Microbiology	:	NA
Any other	:	NA

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary :

11. Signature of IEC Chairman :

SECTION-B

(DETAILS OF THE RESEARCH PROJECT)

1. Title of the Research Project:

Development of Polymethylmethacrylate-grafted-gellan gum (PMMA-G-GG) to Formulate pH Sensitive Drug Delivery System for Antidiabetic Therapy

2. Study Rationale including Novelty and Application of the Work in the Context of National Priorities of Medical Research:

By considering the advantages of natural polymers against the synthetic ones and also by considering the benefits of polymer modification or grafting, the attempt will be made to modify or graft the natural gum i.e. gellan gum. Free radical polymerization method will be followed for grafting of selected natural polysaccharide i.e. gellan gum with monomer methylmethacrylate (MMA) and redox initiator ceric ammonium nitrate (CAN) will be used to make the grafting successful, in order to develop pH sensitive sustained release polymer.

3. Objectives:

- ✓ To graft gellan gum (GG) with methylmethacrylate (MMA) by free radical polymerization technique
- ✓ To characterize grafted gellan gum by different techniques like CHN, NMR, SEM, IR, DSC, XRD, etc.
- ✓ To perform acute oral toxicity study for grafted gellan gum on swiss albino mice model by following OECD 450 guidelines
- ✓ To perform biocompatibility study for grafted gellan gum by sacrificing mice and checking the organ samples
- ✓ To develop pH sensitive solid oral drug delivery system (which will release the drug at basic/intestinal/enteric pH) by using grafted gellan gum as a pH sensitive sustained release polymer.

4. Summary of the Proposed Research indicating Overall Aim of the Research, Methodology, and Expected Outcome:

The aim of the proposed research work is to modify or graft the natural gum. Free radical polymerization method will be followed for grafting of selected natural polysaccharide i.e. gellan gum by using monomer methylmethacrylate (MMA) to be grafted on the polymer backbone. Redox initiator ceric ammonium nitrate (CAN) will be used to make the grafting successful in order to develop pH sensitive sustained release polymer. The expected outcome will be the

reporting of gellan gum grafting with MMA, and if synthesized and evaluated successfully, it can be used as a sustained release polymer.

5. **Present Knowledge and Relevant Bibliography (Relating to the Problems):**

The pH sensitive drug delivery systems propose an elevated therapeutic effectiveness along with the patient compliance, and are gaining importance with passing days as they are promising for various conditions like diabetes, fungal infections, peptic ulcers, asthma, hypertension, cardiovascular diseases and cancer, to list a few. For the treatment involving an adequate dose, the variations not only in disease state but also in plasma drug concentration must be considered at the time of designing the drug delivery systems, as drug pharmacokinetics also maybe pH sensitive. Antidiabetic formulations, wherein release can be sustained, are required to extend and enhance its duration of action as well as the patient compliance. Therefore, for designing such formulations, the polymer modification or grafting could be insightful.

1. Gowrav MP, Hani U, Shivakumar HG, Osmani RAM, Srivastava A. Polyacrylamide grafted guar gum based glimepiride loaded pH sensitive pellets for colon specific drug delivery: fabrication and characterization. RSC Adv. 2015; 5:80005-80013.
2. Vijan V, Kaity S, Biswas S, Isaac I, Ghosh A. Microwave assisted synthesis and characterization of acrylamide grafted gellan, application in drug delivery. CarbohydrPolym. 2012; 90:496-506.
3. Kaity S, Isaac J, Mahesh Kumar P, Bose A, Wong TW, Ghosh A. Microwave assisted synthesis of acrylamide grafted locust bean gum and its application in drug delivery. CarbohydrPolym. 2013; 98:1083-1094.
4. Shailaja T, Latha K, Sasibhushan P, Alkabab AM, Uhumwangho UM. A novel bioadhesive polymer: grafting of tamarind seed polysaccharide and evaluation of its use in buccal delivery of metoprolol succinate. Der Pharmacia Lettre. 2012; 4(2):487-508.
5. Ganesan K, Rajaram SK, Chinnathambi A, Murugesan V, Muruganantham K, Amanullah TR. A sustained release of tablet granules associated with ZnSnanocrystals using Tamarind seed polysaccharide. J Appl Pharm Sci. 2013; 3(4):S44-S47.
6. Pandey PK, Srivastava A, Tripathy J, Behari K. Graft copolymerization of acrylic acid on to guar gum initiated by vanadium (V)-mercapto succinic acid redox pair. CarbohydrPolym. 2006; 65:414-420.
7. Osemeahon SA, Barminas TJ, Aliyu BA, Nkafamiya II. Development of sodium alginate and konkoli gum grafted polyacrylamide blend memebrane: optimization of grafting condition. Afr J Biotech. 2008; 7(9):1309-1313.
8. Varshosaz J, Tavakoli N, Kheirolahi F. Use of hydrophilic natural gums in formulation of sustained-release matrix tablets of tramadol hydrochloride. AAPS PharmSciTech. 2006; 7(1):E168-E174.

9. da Silva DA, Regina CM, Judith PA. Graft copolymerisation of acrylamide onto cashew gum. EurPolym J. 2007; 43:2620-2629.

10. Mundargi RC, Patil SA, Aminabhavi TM. Evaluation of acrylamide-grafted-xanthan gum copolymer matrix tablets for oral controlled delivery of antihypertensive drugs. CarbohydrPolym. 2007; 69:130-141.

6. Detailed ResearchPlan

i. Review of literature:

The detailed literature will be reviewed for reported studies from the polymer modification background

ii. Grafting of gellan gum:

Suitable grafting technique such as ceric ammonium nitrate (CAN) induced free radical polymerization will be selected

iii. Characterization of modified gellan gum:

Modified gellan gum will be characterized by FTIR, DSC, XRD, NMR, SEM, and CHN analysis. Also, toxicity and biocompatibility studies will be carried out.

iv. Selection of Drug DeliveryTechnology:

Suitable antidiabetic drug will be selected to develop a suitable solid oral drug delivery system or dosage form as an antidiabetic therapy.

v. Preformulation:

Techniques such as IR, DSC, and XRD will be used during preformulation studies to study the drug-excipient interaction and compatibility

vi. Formulation and evaluation:

Solid dosage form will be prepared by using suitable antidiabetic agent and grafted gellan gum as pH sensitive sustained release polymer along with other excipients. Formulation will be evaluated.

7. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposedinvestigation

Name of Laboratory	Department	Particulars
Central Instrumentation Laboratory	Krishna institute of Pharmacy, Krishna Institute of Medical Sciences Deemed to be University, Karad	Well-equipped instrumentation room with facility of UV visible spectrophotometer (Shimadzu 1900), In-vitro dissolution test apparatus (Veego), Tablet punching machine, Stability chamber (Remi), Brookfield Viscometer, single pan electronic balance, magnetic stirrer, melting point apparatus, high speed homogenizer, centrifuge, hot air oven, etc.

8. **Budget of the Project:**

Name and Status of Applicant: Dr. Rohit R. Bhosale (Assistant Professor, KIP, KIMSDU, Karad)

Name of the Department: Department of Pharmaceutics

Name of the Faculty: Krishna Institute of Pharmacy, KIMSDU, Karad

Title of the Research Study: Development of Polymethylmethacrylate-grafted-gellan gum (PMMA-G-GG) to Formulate pH Sensitive Drug Delivery System for Antidiabetic Therapy

IEC approval number of the Project:

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost

B. Details of the reagents/equipment/planned to be purchased through the store

Sr. No.	Name of Reagent/Kit/Equipment	Number to be purchased	Unit cost	Total cost
1	Gellan Gum	5 kg	203.30 Rs./500 gm	2,033 Rs./-
2	Ghatti Gum	5 kg	21.50 Rs./500 gm	215 Rs./-
3	Methylmethacrylate (MMA)	5 lit	1200 Rs./lit	6000 Rs./-
4	Ceric ammonium nitrate (CAN)	5 kg	9500 Rs./kg	47,500 Rs./-
5	Streptozotocin	500 mg	43 Rs./mg	21,500 Rs./-

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of Investigation/Procedure	Number to be Performed	Unit cost	Total cost
1	Sample analysisby different characterization techniques like FTIR, DSC, CHN, NMR, SEM, etc.	50	1000 Rs./-	50,000 Rs./-

GRAND TOTAL (A+B+C): 1,27,248 Rs./- (Rupees One Lakh Twenty Seven Thousands Two Hundred Forty Eight)

9. **Applicant's Signature:**

Certified that, this proposal and the budget is appropriate, and recommended for the sanction

Signature of the Head of Department
(College of Pharmacy, JSSATE, Noida)

KRISHNA INSTITUTE OF PHARMACY KIMS "Deemed To Be University" Karad 415539

Signature of the Head of Department
(Krishna Institute of Pharmacy, KIMSDU, Karad)

Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

IEC approval number of the Project:

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost

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Sr. No.	Name of Investigation/Procedure	Number to be Performed	Unit cost	Total cost
1	Sample analysisby different characterization techniques like FTIR, DSC, CHN, NMR, SEM, etc.	50	1000 Rs./-	50,000 Rs./-

GRAND TOTAL (A+B+C): 1,27,248 Rs./- (Rupees One Lakh Twenty Seven Thousands Two Hundred Forty Eight)

9. **Applicant's Signature:** Avindita De

Certified that, this proposal and the budget is appropriate, and recommended for the sanction

Signature of the Head of Department
(College of Pharmacy, JSSATE, Noida)

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF PHARMACY KIMS "Deemed To Be University" Karad 415539

KIMSDU's

Krishna Institute of Pharmacy, Karad

Report on Industrial Training of Students

Industry: Shree Anand Life Sciences Ltd. **Location: Belagavi, Karnataka**

Production: Sterile Dosage Forms **Duration: 10 Days**

Dr. R. C. Doijad, Dean, Krishna Institute of Pharmacy (B. Pharm.), signed a memorandum of understanding (MoU) with Shree Anand Life Sciences Ltd., Belagavi, India, in the month of July 2019.

Shree Anand Life Sciences Ltd initiated its maiden plant as Anand Pharmaceuticals way back in the year 1989. The new facility was renamed Shree Anand Life Sciences Ltd (SALSL).

The plant is located amidst lush green surroundings. No other polluting industries are situated surrounding or near the plant. The plant is famously known for manufacturing of sterile dosage forms.

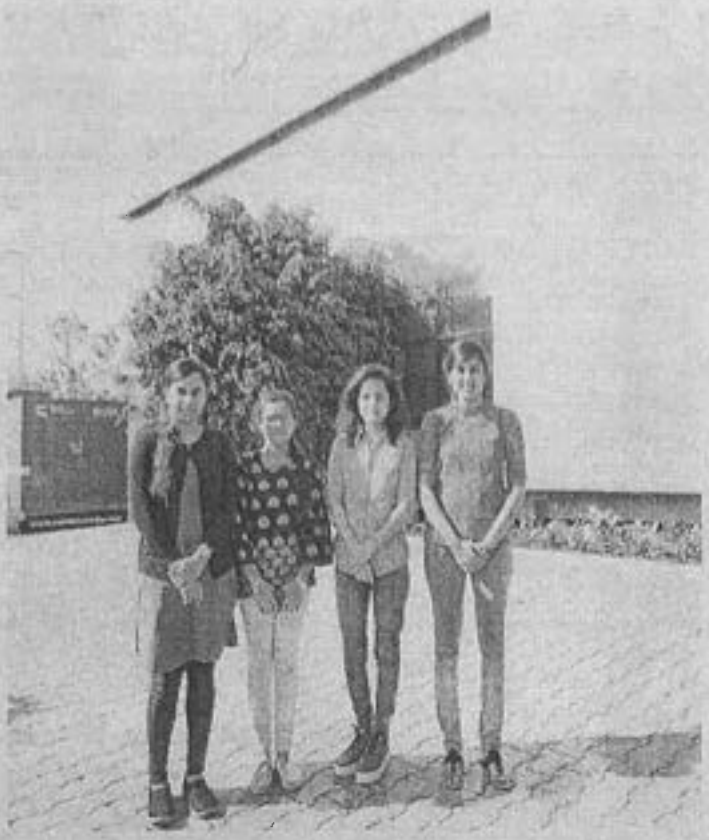
As a part of this MoU, he sent few students from T. Y. B. Pharm. class for 10 days industrial training, starting from 6th January 2020 to 16th January 2020.

Students went there, experienced an industrial scenario, and learned through this training, and gained knowledge about how things actually work in a Pharma industry.

The expenses for travelling and stay were borne by students as noticed and informed before going for this training.

The report includes Photo Gallery and Certificates of Students (including their names) who went for this training.

Photo Gallery



Signature of Dean

INDUSTRIAL TRAINING PROGRAMME

Name of the Trainee : Ms. Reshma Tanaji Mate

Industrial Training Period From : 06/01/2020 To 16/01/2020

Date	Department	Department Head/Sign
13/01/2020	Warehouse	Mr. Jeetesh Prabhu for Jsp 13/01/2020
10/01/2020 to 11/01/2020	Production	Mr. Bhausaheb Shirsat BShirsat 11/01/2020
14/01/2020	Packing Hall / Visual Inspection	Mr. Despande & Mr.Ajay Patil 14/01/2020
06/01/2020 to 07/01/2020	Quality Control	Mr. Chandro Gawas 07/01/2020 Siddharth Naik
08/01/2020	Microbiology	Mr. Vikas Surve 08/01/2020
09/01/2020	Quality Assurance	Mr. Sivaprakash Reddy for 09/01/2020 (Sunilkumar Shirahatti)
15/01/2020 to 16/01/2020	Admin/HR	Mr. Amrutrao Desai 16/01/2020

Shree Anand Life Sciences Ltd. BELAGAVI

INDUSTRIAL TRAINING PROGRAMME

Name of the Trainee : Ms. Vaibhavshali Ravindra Karade

Industrial Training Period From : 06/01/2020 To 16/01/2020

Date	Department	Department Head/Sign
06/01/2020	Warehouse	Mr. Jeetesh Prabhu 06/01/2020
07/01/2020 to 08/01/2020	Production	Mr. Bhausaheb Shirsat 08/01/2020
09/01/2020	Packing Hall / Visual Inspection	Mr. Despande & Mr Ajay Patil 09/01/2020
10/01/2020 to 11/01/2020	Quality Control	Mr. Chandro Gawas 13/01/2020
13/01/2020	Microbiology	Mr. Vikas Surve 13/01/2020
14/01/2020	Quality Assurance	Mr. Sivaprakash Reddy 13/01/2020
15/01/2020 to 16/01/2020	Admin/HR	Mr. Amrutrao Desai 16/01/2020

Shree Anand Life Sciences Ltd. BELAGAVI

INDUSTRIAL TRAINING PROGRAMME

Name of the Trainee : Ms. Devika Sunil Jadhav

Industrial Training Period From : 06/01/2020 To 16/01/2020

Date	Department	Department Head/Sign
13/01/2020	Warehouse	Mr. Jeetesh Prabhu for Arvi 13/01/2020
10/01/2020 to 11/01/2020	Production	Mr. Bhausaheb Shirsat 11/01/2020
14/01/2020	Packing Hall / Visual Inspection	Mr. Despande & Mr.Ajay Patil 14/01/2020
06/01/2020 to 07/01/2020	Quality Control	Mr. Chandro Gawas 07/01/2020 Siddharth Naik
08/01/2020	Microbiology	Mr. Vikas Surve 08/01/2020
09/01/2020	Quality Assurance	Mr. Sivaprakash Reddy for 09/01/2020 (Sunil Kumar Shirahatti)
15/01/2020 to 16/01/2020	Admin/HR	Mr. Amrutrao Desai 16/01/2020

Shree Anand Life Science Ltd. BELAGAVI

Name of the Trainee : Ms. Shivani Shashikant Kumbhar

Industrial Training Period From : 06/01/2020 To 16/01/2020

Date	Department	Department Head/Sign
06/01/2020	Warehouse	Mr. Jeetesh Prabhu 06/01/2020
07/01/2020 to 08/01/2020	Production	Mr. Bhausaheb Shirsat 08/01/2020
09/01/2020	Packing Hall / Visual Inspection	Mr. Despande & Mr.Ajay Patil 09/01/2020
10/01/2020 to 11/01/2020	Quality Control	Mr. Chandro Gawas 13/01/2020
13/01/2020	Microbiology	Mr. Vikas Surve 13/01/2020
14/01/2020	Quality Assurance	Mr. Sivaprakash Reddy 13/01/20
15/01/2020 to 16/01/2020	Admin/HR	Mr. Amrutrao Desai 16/01/2020

Shree Anand Life Sciences Ltd. BELAGAVI

KIMSDTU's
TRAINING PROGRAMME ON CLINICAL RESEARCH
UNDER THE AUSPICES OF
MEMORANDUM OF UNDERSTANDING
BETWEEN
KIMSDTU'S KIP AND MILAGRO CLINICAL RESEARCH

Milagro Clinical Research

Day: Saturday **Date: 19/10/2019** **Time: 10.30 AM – 05.00 PM**

Report of training programme on Clinical research

A memorandum of understanding was already signed between KIMSDU's KIP and MILAGRO Clinical research organization on 3rd September 2019. The main objectives behind this MOU are to provide training to students in all the relevant areas associated with clinical trials.

As a beginning, a training programme on Clinical research was delivered by subject experts from Milagro team and this programme was arranged as per the vision of our Dean Dr. R. C. Doijad sir, Dean, KIP, Karad. The programme started with the inaugural address by Dr. R. C. Doijad sir, Dean, KIP, Karad.

In his speech he emphasized on the importance of implementing the objectives of MOU for which it is signed.He inspired all the students to make advantage of the training programme and be competent in their profession. He also advised the students to find their area of inclination in pharmacy profession and work hard to make it as a career.

It was followed by felicitation of team members of Milagro, Dr. Anjali Sable, Founder/Director of MILAGRO Clinical Research organization, Ms. Rashmi Chabukswar, Programme officer, Bayer Pharma Pvt. Ltd, Ms. Rajeswari Sorte, Medical writer Milagro and Mr. Akshay Mane, Clinical Research Associate, Milagro at the hands of Dean, Dr. R. C. Doijad sir . Dean, Dr. R. C. Doijad sir was felicitated by Dr. Anjali Sable.

Three sessions were delivered as follows:

Session 1: Career prospective for pharmacy graduates in clinical research by Dr. Anjali Sable

Session 2: Overview of Clinical research by Ms. Rashmi Chabukswar

Session 3: Clinical research process by Dr. Anjali Sable

The training session started from morning 10.30 am and winded up by 5.00 pm, followed by vote of thanks by Ms. Jotsna. M. Gandhi. Live feedback was given by few students and staff member Dr. Rohit Bhosale, and the programme was declared over.

KIMSDTU's
KRISHNA INSTITUTE OF PHARMACY, KARAD

REPORT ON WEBINAR ON CAREER OPPORTUNITIES IN CLINICAL RESEARCH FOR PHARMACY GRADUATES

UNDER THE AUSPICES OF

MEMORANDUM OF UNDERSTANDING

BETWEEN

KIMSDTU'S KIP AND MILAGRO CLINICAL RESEARCH

Date: 05/06/2020 **Time: 11 AM -12 PM**

A one week webinar series was organized by KIMSDTU's, Krishna Institute of Pharmacy from 3rd June 2020 to 8th June 2020.

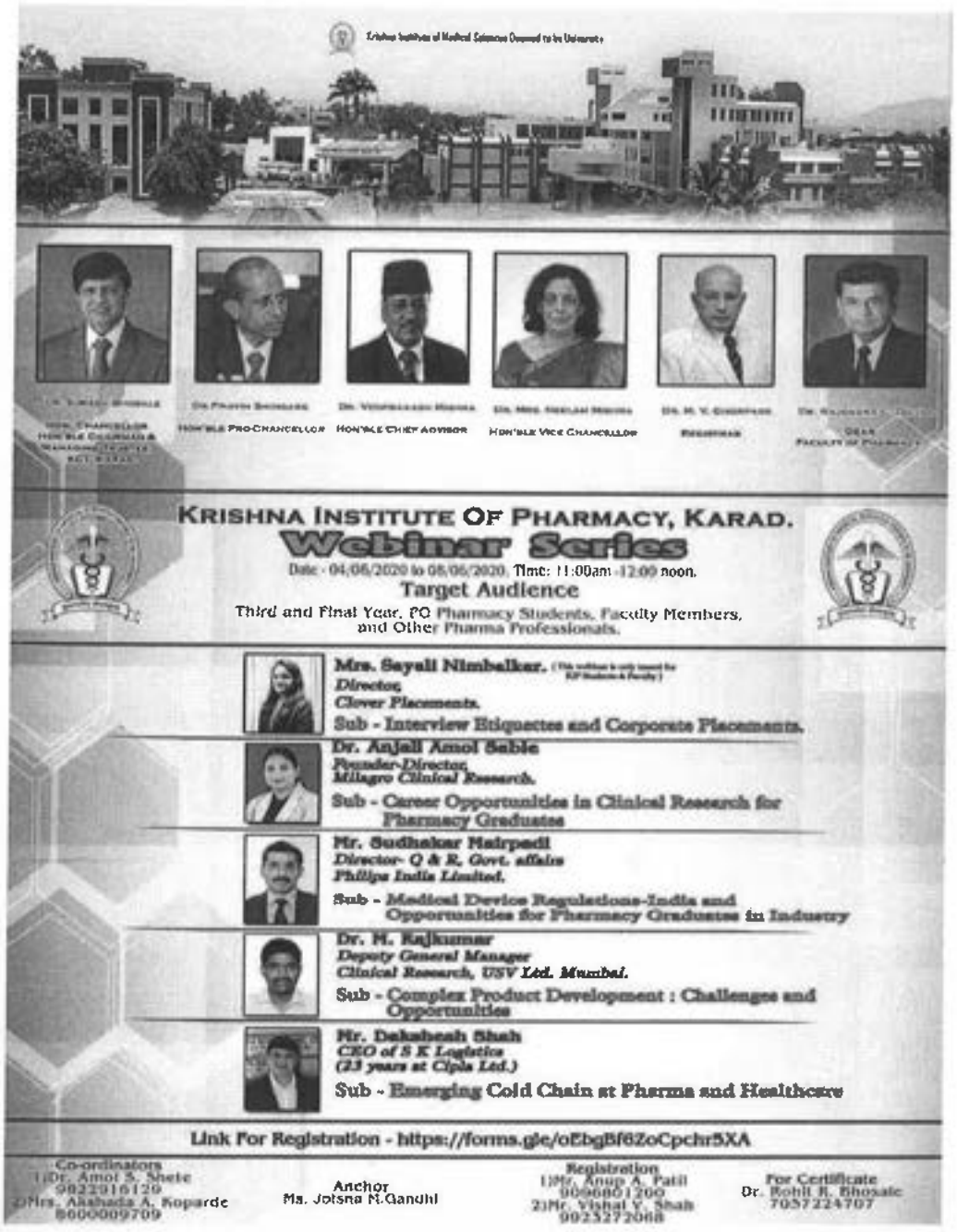
The main objective of this webinar series was to bridge the gap between academics and industry. The topics for the webinar were selected according to the need of the hour and industry experts from the respective areas were the speakers.

The salient features of the webinar were industry institute interaction, entrepreneurship development, introducing to recent advanced technologies, use of artificial intelligence in industry, guidance for beginners on skill development.

The entire programme was planned, hosted and moderated by Dean of Krishna Institute of Pharmacy, Dr. Rajendra. C. Doijad. The programme was coordinated by Dr. Amol. S. Shete and Mrs. Akshada Koparde of KIP under the guidance of Dr. R. C. Doijad.

On 5th June 2020, a webinar by Dr. Anjali Amol Sable, CEO, Milagro Clinical Research Organisation, Navi Mumbai, was organized as a part of activity under MoU with the institute. She delivered a talk on Career opportunities in Clinical research for pharmacy graduates.

There were more than 500 registrations for each webinar and professionals, students and faculty members from all around Maharashtra, Uttarkhand, Karnataka, Goa, have participated for the webinar series. All speakers and participants were provided with an E- certificate for each webinar.



Krishna Institute of Medical Sciences Deemed to be University's

KRISHNA INSTITUTE OF PHARMACY, KARAD.

CERTIFICATE OF APPRECIATION

[E - Certificate]

This is to certify that

Dr./Mr./Mrs./Ms. Anjali Amol Sable has participated as a Resource Person/Speaker for a webinar on the topic "Career Opportunities in Clinical Research for Pharmacy Graduates", organized by Krishna Institute of Pharmacy, KIMSDU, Karad on 05/06/2020, from 11:00 AM to 12:00 PM.

WEBINAR SERIES

Dr. Rajendra C. Deljad
Organizing Secretary
Dean
Krishna Institute of Pharmacy, Karad

Certificate of Appreciation

Krishna Institute of Medical Sciences Deemed to be University's

KRISHNA INSTITUTE OF PHARMACY, KARAD.

CERTIFICATE OF PARTICIPATION

[E - Certificate]

This is to certify that

Dr./Mr./Mrs./Ms. Dr. Rohit Bhosale has participated and attended a webinar on the topic "Career Opportunities in Clinical Research for Pharmacy Graduates", organized by Krishna Institute of Pharmacy, KIMSDU, Karad on 05/06/2020, from 11:00 AM to 12:00 PM.

Dr. Anjali A. Sable
Resource Person/Speaker
Founder-Director
Milagro Clinical Research

WEBINAR SERIES

Dr. Rajendra C. Deljad
Organizing Secretary
Dean
Krishna Institute of Pharmacy, Karad

Certificate of Participation


KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY"
KRISHNA INSTITUTE OF PHARMACY,KARAD
ONLINE WEBINAR SERIES 2020
Topic:-"Career opportunities in clinical research for Pharmacy graduates"
SPEAKER
Amol Sable (Founder-Director, Milagro Clinical Research)
5TH JUNE 2020
HOSTED AND MODERATED BY
DR. RAJENDRA C. DOUAD
DEAN, KIP, KARAD


Dr Anjali Sable

KIMSDU's

Krishna Institute of Pharmacy, Karad

Report on Industrial Training of Students

Industry: Senses Pharmaceuticals Ltd. **Location: Bangalore, Karnataka**

Production: Ophthalmic Products **Duration: 15 Days**

Dr. R. C. Doijad, Dean, Krishna Institute of Pharmacy (B. Pharm.), signed a memorandum of understanding (MoU) with Senses Pharmaceuticals Ltd., Bangalore, India, in the month of August 2019.

Senses Pharmaceuticals was established in Bangalore, Karnataka, India, in 2009 to cater to the increasing demand for quality sensory organ-related products across the globe. They currently produce a range of ophthalmic products including drops, ointments / gels, oral preparations and eye related surgical products.

As a part of this MoU, he sent few students from T. Y. B. Pharm. class for 15 days industrial training, starting from 2nd January 2020 to 18th January 2020.

Students went there, experienced an industrial scenario, and learned through this training, and gained knowledge about how things actually work in a Pharma industry. The expenses for travelling and stay were borne by students as noticed and informed before going for this training.

The report includes Photo Gallery and Certificates of Students (including their names) who went for this training.

Photo Gallery

Signature of Dean

Senses
Pharmaceuticals Ltd

Regd. Office :
No. 90/3 Pavanadhama, 2nd Floor, 80 Feet Main Road
Padmanabhanagar, Bengaluru-560 070
Phone : +91 80-26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Ms. Gore Vibhavari Dilip, Third Year B Pharma Student of Krishna Institute of Pharmacy, Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

1. Human Resource
2. Quality Assurance
3. Quality Control and Microbiology
4. Warehouse
5. Engineering
6. Production/Packing
7. Regulatory
8. ISO 9001/14001 introduction

Yours faithfully,

SENSES PHARMACEUTICALS LTD.,

M. M VAINGANKAR

FACTORY MANAGER

Senses
Pharmaceuticals Ltd.

Regd. Office :
No. 30/3, Pavanadhama, 2nd Floor, 80 Feet Main Road,
Padmanabhanagar, Bengaluru-560 070
Phone : +91 80-26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Ms. Jadhav Mayuri Bajirao, Third Year B Pharma Student of Krishna Institute of Pharmacy, Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

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3. Quality Control and Microbiology
4. Warehouse
5. Engineering
6. Production/Packing
7. Regulatory
8. ISO 9001/14001 introduction

Yours faithfully,

SENSES PHARMACEUTICALS LTD.,

M. M VAINGANKAR

FACTORY MANAGER

Corporate Office : No.4, (Old No. 15/4), 1st Floor, Hemanth Plaza, 80 Feet Main Road, Padmanabhanagar, Bengaluru - 560 070
Phone : +91 80-26790004, Email : salesadmin@sensespharma.com
Factory : No. 77, 3rd Road, Bommasandra Industrial Area, Bommasandra 4th Phase, Bengaluru - 560 099
Phone : +91 80 27839144, Email : info@sensespharma.com

Senses
Pharmaceuticals Ltd

Regd. Office :
No. 30/3, Pavanachama, 2nd Floor, 80 Feet Main Road
Padmanabhanagar, Bengaluru-560 070
Phone : +91 80-26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Mr. Patil Aniruddha Adhikrao, Third Year B Pharma Student of Krishna Institute of Pharmacy, Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

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3. Quality Control and Microbiology
4. Warehouse
5. Engineering
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SENSES PHARMACEUTICALS LTD.,

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FACTORY MANAGER

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Senses
Pharmaceuticals Ltd.

Regd. Office :
No. 30/3, Pavanabhanna, 2nd Floor, 80 Feet Main Road
Padmanabhanagar, Bengaluru-560 070
Phone : +91 80 26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Mr. Pokale Rahul Uday, Third Year B Pharma Student of Krishna Institute of Pharmacy,Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

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3. Quality Control and Microbiology
4. Warehouse
5. Engineering
6. Production/Packing
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8. ISO 9001/14001 introduction

Yours faithfully,

SENSES PHARMACEUTICALS LTD.,

M. M VAINGANKAR

FACTORY MANAGER

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Phone : +91 80 27839144, Email : info@sensespharma.com

Senses
Pharmaceuticals Ltd.

Regd. Office :
No. 30/3, Pavanadhama, 2nd Floor, 80 Feet Main Road
Padmanabhanagar, Bengaluru-560 070
Phone : +91 80-26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Ms. Mane Vaishnavi Anil, Third Year B Pharma Student of Krishna Institute of Pharmacy, Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

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6. Production/Packing
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8. ISO 9001/14001 introduction

Yours faithfully,

SENSES PHARMACEUTICALS LTD.,

M. M VAINGANKAR

FACTORY MANAGER

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Senses
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Padmanabhanagar, Bengaluru-560 070
Phone : +91 80-26790004
CIN : U24232KA2008PLC048422

TO WHOM SO EVER IT MAY CONCERN.

Ms. Yadav Pranali Prakash, Third Year B Pharma Student of Krishna Institute of Pharmacy, Karad, Maharashtra, has undergone satisfactory completion of 16 days (from 3rd January 2020 to18th January 2020 for more than 130 hour) of industrial training in the following departments at **Senses Pharmaceuticals Ltd, No. 77, 3rd Road, Bommasandra Industrial Area, 4th Phase , Bangalore-560099.**

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FACTORY MANAGER

Corporate Office : No. 4, (Old No. 15/4), 1st Floor, Hemanth Plaza, 80 Feet Main Road, Padmanabhanagar, Bengaluru - 560 070
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Phone : +91 80 27839144, Email : info@sensespharma.com

KIMSDU's

Krishna Institute of Pharmacy, Karad

Report on Certified Industry Integrated Bridge Course
Organized by
Opex Accelerator Pvt. Ltd.
In collaboration with
Krishna Institute of Medical Sciences Deemed to be University,
Malkapur- 415539, Karad.

Duration: 16th and 17th May 2020 Time: 11.00 AM to 12.30 PM

It's our privilege to report that Two Days Online **Certified Industry Integrated Bridge Course** was organized by **Opex Accelerator Pvt. Ltd., Kolhapur** (Skill Development/Startup Accelerator/Consulting) in collaboration with **Krishna Institute of Medical Sciences Deemed to be University (KIMSDU), Karad.**

This course was organized under the auspices of **Memorandum of Understanding** (MoU) between Opex Accelerator Pvt. Ltd. and Krishna Institute of Medical Sciences Deemed to be University.

Many participants (approximately 200 participants) from **Western Maharashtra** had registered voluntarily for this course. From Krishna Institute of Pharmacy (KIP), all the faculty members as well as many students had registered. Out of 200 participants, around **40 participants from KIP, KIMSDU had registered, attended, and completed the course.**

Organizers have provided the **study material**, had conducted the **online test**, and collected the **feedbacks** via Google forms at the end of the course. Also, **certificates** were distributed through mails.

This two days course was divided into different sessions.

Day 1 sessions were all introductory sessions including facts and figures on pharma sector, intro related to top pharma companies, current scenarios of pharma companies due to COVID-19 outbreak, intro to core and non-core pharma companies. It was then followed by live YouTube session by Mr. Amol Galande from TCS on telling scope of medical writing and clinical research.

Day 2 sessions were also good and informative. They covered the topics like industry experts advise where they showed video lectures of some industry experts who talked on job situations, opportunities and skills required.

It was then followed by online test and collection of feedback from all the participants through Google forms. Then they uploaded the concluding video on YouTube, and declared the end of the course. Separately, Dr. Rohit Bhosale, Asst. Prof., KIP, has collected the feedbacks from KIP faculty members as well as students who completed this course, and has submitted all those feedbacks to the Institute.

Overall, the course was very informative for pharma freshers and pharma and clinical research relatedstudents.

This report contains followingdetails:

- ✓ Name, Details, and Schedule of thecourse
- ✓ Digital Poster andFlyer
- ✓ Sample CertificateCopy

Dr. Rajendra C. Doijad
Dean, KIP, KIMSDU, Karad.
17/05/2020

Name of the Course:

Certified Industry Integrated Bridge Course

Details of the Course:

Organized By: Opex Accelerator Pvt. Ltd., Kolhapur.

In Collaboration With: KIMSDU, Karad.

Duration: 2 Days (16th and 17th May 2020)

Schedule of the Course

Day 1

16th May 2020

Session 1: India Facts and Figures Regarding Pharma Companies

Session 2: Top 10 Pharmaceutical Companies

Session 3: Geographical Distribution of Pharma

Session 4: Impact of COVID-19 on Indian Pharma Industry

Session 5: COVID-19 Impact on Jobs

YouTube Live Webinar: Mr. Amol Galande (Lead Data Manager, TCS)

Day 2

17th May 2020

Session 1: Industry Expert Advice

Session 2: Job Domain Insights

Session 3: Employing Insights

Questionnaires, Test, and Feedback

Concluding Video on YouTube

Digital Poster and Flyer

In Collaboration with

Presents

Integrate with Industry & Get Ready for JOHS
Presenting
Certified Industry Integrated Bridge Course
for Pharma Freshers
Get Industry Expert Advice


Rutika Joshi
Sciformix


Dr. Amit Antarkar
Mylan


Dr. Sunil Choudhary
Lifepoint Research Centre


Gaurav Ghaweda
Bayer Zydus Pharma Pvt Ltd.


Moderator
Sachin Kumbhoje
OpEx


Vishal Daddikar
Dr Lal Pathlabs


Nikhil Kharayat
Bayer Zydus Pharma Pvt Ltd.


Priti Singh
IQVIA


Amol Galande
CDM Professional


Vivek Khatangalekar
Medical Writing Professional

16th & 17th May 2020

Register Now
www.opexindia.com

Sample Certificate Copy

(Same Certificates were received by all the Participants)

CERTIFICATE
OF PARTICIPATION

This is to Certify that,

Mr / Ms /Dr. **Dr. Rohit Bhosale**

has actively participated in the **Certified Industry Integrated Bridge Course** held on 16th and 17th May 2020.

Sachin Kumbhoje
CEO
OpEx Accelerator Pvt Ltd

Dr. R. C. Daljad
Principal, Krishna Institute of Pharmacy, Karad

Dr. H. N. More
Principal, Bharati Vidyapeeth College of Pharmacy, Kolhapur

www.opexindia.com

New project proposal (Collaborative Project)

(For Departmental/Staff proposals)

==========

SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

CRYSTAL ENGINEERING A NOVEL APPROACH FOR FORMULATION OF BCS CLASS II DRUGS

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

- Solution mediated phase transformation studies
- Synthesis of cocrystals by using novel techniques
- Long term stability studies of cocrystals and its formulation
- Establishment of IVIVC of cocrystals based formulations

2. Name and Designation of

a) Principle investigator	**Dr.Amol S.Shete** [M.Pharm, PhD] Assistant Professor, Department of Pharmaceutics
b) Other investigators	Dr. (Smt) F. S Dasankoppa[M.Pharm, PhD] Associate Professor, Department of Pharmaceutics KLE'S college of pharmacy, Hubballi
c) Department	Krishna Institute of Pharmacy of Krishna Institute of MedicalSciences (KIMS) Deemed To Be University, Karad, MS, India

3. Name of the Sponsor : **Not applicable**

4. Duration of Research/Dissertation Project (18 Months)

a) Period which may be needed for collecting the data : 5 months

b) Period that may be required for Analysing the data : upto 30/04/2021

5. Date of submission of the project to the Department of Research for protocol review committee: 10/03/2020

6. Date of submission of the modified project (modified as per suggestions made by the protocol review committee to the Department of Research for IEC review

7. Signature (with date) of

a) Applicant staff : Dr. Arun S. Shete

b) Head of the department : DR. F. S. DALAVANKOPPA

c) Dean of the Faculty : DR. V. G. TAMARANDI

Dr. Rajendra Doijad

Dean
Krishna Institute of Pharmacy,
KIMS Deemed To Be University, Karad

8. Signatures of the other departmental heads where part of the research study will be planned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

9. IEC review

Remarks of the IEC : Approved / Not Approved

KLES COLLEGE OF PHARMACY HUBBALLI 580031

2

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

1. **Title of the Research Project:**

   CRYSTAL ENGINEERING A NOVEL APPROACH FOR FORMULATION OF BCS CLASS II DRUGS

2. **Study rationale including novelty and application of the work in the context of National priorities of Medical Research**

   Yadav AV et.al, and Shevchenko A et.al. "Crystal engineering has been proposed as the exploitation of non-covalent interactions between molecular or ionic components for the design of solid-state structures that might exhibit electrical, magnetic, and optical properties. Cocrystallization and salt formation have a great advantage for tackling the problem of low aqueous solubility and bioavailability of API"[3]. Crystal engineering technologies include formation of cocrystals, metastable polymorphs; high energy amorphous forms and ultrafine particles to ameliorate the properties of an API

   The aim of present investigation is to synthesize cocrystals of BCS class II drugs to modify the physical and chemical properties of drugs such as solubility, dissolution rate, stability, hygroscopisity, and compressibility etc. the novelty of present investigation will be Stability studies of formulated cocrystals in solid form and solution state and in vivo evaluation of cocrystals for pharmacokinetic parameters in powder for and in dosage form

   Enhancing the solubility and dissolution rate of BCS class II drugs is important for improving the bioavailability and efficacy of most of these drugs. Several methods to improve the dissolution characteristics of poorly water soluble drugs have been reported, including micronisation, formation of salts or solvates, complexes and microspheres.

Additionally, attempts have been made to improve bioavailability provided by solid dosage forms by forming particles comprising the drug or by mixing the poorly water soluble drug with hydrophilic excipients. Traditionally, however, these methods carry inherent limitations concerning physical stabilities of the particles on storage, problems with grinding or difficulty of removal of the frequently toxic solvent. Furthermore, it is important that the drug released from the solid phase does not precipitate in the gastrointestinal tract, or precipitates as little as possible, but remains water-soluble in the aqueous fluids of the gastrointestinal tract, since such precipitation results in low bioavailability. PH-dependent solubility is a well-known issue for many oral formulations of poorly water-soluble substances, since most of the absorption of the drug occurs in the small and large intestine, where pH is close to neutral. There is thus a continuing need to develop and improve the dissolution characteristics of oral solid dosage forms of BCS class II drugs.

3. **Objectives:**
    a. The primary objectives of present investigation are to enhance solubility, rate of dissolution and bioavailability of BCS class II drugs through cocrystallization.
    b. To prepare cocrystals by different methods with suitable coformeres (as reported as generally recognized as safe)
    c. To evaluate prepared cocrystals for solid state characterization, solid state stability, solution mediated phase transformation
    d. To develop oral drug delivery (tablets or capsules) of prepared cocrystals with process parameters and risk analysis

4. **Summary of the proposed research (about 150 to 200 wards) indicating overall aim of the research, Methodology, expected outcome etc.**

Crystal engineering of active pharmaceutical ingredients (APIs) has become a subject of interest for experts in recent years. Crystal engineering has been proposed as the

exploitation of non-covalent interactions between molecular or ionic components for the design of solid-state structures that might exhibit electrical, magnetic, and optical properties. Cocrystallization and salt formation have a great advantage for tackling the problem of low aqueous solubility and bioavailability of API". Crystal engineering technologies include formation of cocrystals, metastable polymorphs; high energy amorphous forms and ultrafine particles to ameliorate the properties of an API. In addition to these established crystalline API modifications, pharmaceutical co-crystals, or crystalline molecular complexes involving an API, have recently attracted interest as an alternative approach. By relying on robust intermolecular interactions with demonstrated solid-state reproducibility, synthon-based co-crystals design has become increasingly important to the synthesis of new co-crystal materials. Cocrystals may improve stability, solubility, permeability, manufacturing properties etc. and provide new life to old drugs

5. **Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)**

Low solubility of New Chemical Entity (NCE) is emerging as a major issue in drug discovery & development. Poorly soluble compounds not only create problem for in vitro & in vivo assays but also place a significant burden on drug development. Compounds with insufficient solubility have higher risk of attrition & higher cost of drug development according to recent studies 75% of drugs candidates under development had low solubility belongs to BCS classes II & IV. Solubility & permeability are the major factors to describe oral absorption according to BCS class II & IV. A cocrystallization is an alternative approach to manipulate physical and mechanical properties of drug through improvement in overall performance of API without affecting their pharmacological as well as intrinsic property. Literature reveals different methods of preparation like physical, chemical or thermal and non-thermal methods of preparation. In present investigation new synthesis technique will be evaluated.

- **References :**

1. Zvonicek V, Skořepova E, Dusek M, Zvátora P, SooS M. Ibrutinib Polymorphs: Crystallographic Study. Cryst Growth Des. 2018; 18(3): 1315-1326. Available from: https://doi.org/10.1021/acs.cgd.7b00923.
2. Chunling D, Li B, Zhenyu L, Shetty S, Fu J. Dasatinib-loaded albumin nanoparticles possess diminished endothelial cell barrier disruption and retain potent anti-leukemia cell activity. Onco target. 2016; 7(31): 49699–49709. Available from: doi: 10.18632/oncotarget.10435.
3. Reddy Adena S, Upadhyay M, Vardhan H, Mishra B. Development, optimization, and in vitro characterization of dasatinib-loaded PEG functionalized chitosan capped gold nanoparticles using Box–Behnken experimental design. Drug Dev Ind Pharm. 2018; 44(3): 493-501. Available from: https://doi.org/10.1080/03639045.2017.1402919
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8. Hong, S., Lin, H., Wang, C. et al. Improving the anticancer effect of afatinib and microRNA by using lipid polymeric nanoparticles conjugated with dual pH-responsive and targeting peptides. J Nanobiotechnol. 2019; 17(1): 89. Available from: doi: 10.1186/s12951-019-0519-6
9. EP2802316A1 European Patent Office

10. EP2861589B1 European Patent Office

11. WO 2016/001025 A1

12. WO 2016/156127 A 1(PCT application

6. **Detail research plan :**

i. Review of Literature:

The literature has been reviewed for the crystal engineering, types, methods for preparation and evaluation

ii. Analytical Method:

A suitable UV-Visible, HPLC etc. method developed for this proposed study. The selected method will be validated and it will be used for the formulation and in-vitro drug analysis.

iii. Selection of Drug Delivery Technology:

Suitable drug delivery system will be selected for the delivery of formulated products

iv. Preformulation:

Techniques such as IR spectroscopy, X-ray diffraction, DSC will be used during Preformulation studies to study the drugs-excipients interactions and for other applications.

v. Synthesis of cocrystals

The cocrystals will be synthesized by any one suitable new method

vi. Solid state characterization of molecular complexes:

Molecular complexes will be characterized by FTIR, PXRD, DSC and any other recent techniques like Raman spectroscopy, Mass, NMR etc.

Vii. In vitro – In vivo Evaluation of formulations:

Cocrystals will be evaluated for solubility, dissolution studies, stability studies as per ICH guidelines, phase transformation studies and will be evaluated for performance in suitable dosage form. The cocrystals will be evaluated for in vivo pharmacokinetic parameters and IVIVC will be established.

viii. Probable Method of Data Analysis

A valid statistical method will be used for analyzing the data obtained from the research to reveal the level of their significance.

ix. **Study Design (Plan):**

Activity	Months			
	0	1	2	3
Selection and procurement of chemicals, glassware's and equipment's				
Preformulation and development of formulations of itraconazole				
In vitro evaluation and stability studies of the same				
In vivo evaluation of cocrystals				
Writing of research reports , papers and patents				

7. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

- **Equipments**: R.B.F. and Reflux condenser, Single pan electronic balance, Magnetic stirrer, Melting point apparatus, High speed homogenizer, centrifuge, 8 station tablet punching machine, stability chamber, hot air oven, sieve shaker etc.

8. Budget of the project:

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	Synthesis or optimization of method of recrystallization	NA	0	0
2	In vitro evaluation for solubility and dissolution studies	NA	0	0
3	Stability studies as per ICH guidelines	NA	0	0
4	Solution mediated phase transformation studies	NA	0	0

Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	FTIR Analysis	20	200	4,000
2	Differential scanning calorimetric analysis	15	1000	15,000
3	Raman spectroscopy	10	500	5,000
5	Mass spectroscopy	10	2,000	20,000
6	NMR spectroscopy	10	3,000	30,000
7	Scanning electron microscopy	05	1,000	5,000
8	PXRD	15	1000	15,000
9	Single crystal PXRD	10	5000	50,000
Total				1,44,000

9. Applicant's signatures with date-

Dr. Amol V Shete

Sign

DR. F.S. DACANKOPPA.

KLES COLLEGE OF PHARMACY HUBBALLI 580031

10

FORMAT FOR SUBMISSION OF ESTIMATED BUDGET FOR PROPOSED RESEARCH STUDY

Name and status of Applicant: - Dr. Amol S.Shete (Assistant Professor), Dr. (Smt) F. S Dasankoppa (Associate Professor)

Name of the Department: - Pharmaceutics

Name of the faculty:- KIMSDTU'S Krishna Institute of Pharmacy, Karad and KLE'S College of pharmacy, Hubli

Title of the research study:

CRYSTAL ENGINEERING A NOVEL APPROACH FOR FORMULATION OF BCS CLASS II DRUGS

IEC approval number of the project:

Budget of the project: To be submitted as per the following format. Additional applicable details if any may also be provided

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation / Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1	Synthesis or optimization of cocrystals	NA	Krishna Institute of pharmacy, karad	0	0
2	In vitro evaluation for solubility and dissolution studies	NA		0	0
3	Stability studies as per ICH guidelines	NA		0	0
4	In vivo pharmacokinetic evaluation of corsytals		KLE'S college of pharmacy, Hubli		50,000

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
• Chemicals				
Total				25,000

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation / Procedure	Number to be performed	Unit cost	Total cost
1	FTIR Analysis	20	200	4,000
2	Differential scanning calorimetric analysis	15	1000	15,000
3	Raman spectroscopy	10	500	5,000
5	Mass spectroscopy	10	2,000	20,000
6	NMR spectroscopy	10	3,000	30,000
7	Scanning electron microscopy	05	1,000	5,000
8	PXRD	15	1000	15,000
9	Single crystal PXRD	10	5000	50,000
Total				1,44,000

GRAND TOTAL (A+B+C) – 50,000+ 25,000 + 1, 44,000 = 2, 19,000 (Two lacs nineteen thousand only)

Dr. Rms | 3-5h.t Signature & date of investigator
DR. F-1 DASANTOPPA

Certified that the above budget is appropriate & recommended for sanction

Recommended for sanction

KLES COLLEGE OF PHARMACY HUBBALLI 580031

Signature & date of HOD

12

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF PHARMACY KIMS "Deemed To Be University" Karad 415539

KLE COLLEGE OF PHARMACY

Vidyanagar, HUBBALLI - 580 031, Karnataka
A constituent unit of
KLE Academy of Higher Education and Research, Belagavi
(Deemed-to be University)

: 0836-2373174, Fax No.0836-2371048, Web: http://www.klescoph.org. Email: principal.klescoph@gmail.com
princpharmhbl@kledeemeduniversity.edu.in

Ref. No. KLECOPH/Res/2020-21/125 Date: 06/08/2020

To,

Prof. (Dr.) Rajendra C. Doijad,
Dean Faculty of Pharmacy,
KIMSDU'S Krishna Institute of Pharmacy,
KARAD.

Sub: Willingness to agree for utilization of research facilities for the Collaborative Project between KIMSDU'S Krishna Institute of Pharmacy, Karad and KLE College of Pharmacy, Hubballi ..... reg.

****

Sir,

Adverting to the Subject cited above and in accordance with the MoU signed between KIMSDU'S Krishna Institute of Pharmacy, Karad and KLE College of Pharmacy, Hubballi, Research proposal Entitled – "CRYSTAL ENGINEERING A NOVEL APPROACH FOR FORMULATION OF BCS CLASS II DRUGS" has been submitted to Krishna Institute of Medical Sciences (KIMS) Deemed to be University, Karad for approval of Grant in Aid.

Principal Investigators of the project are Dr.Amol S. Shete, Assistant Professor, Department of Pharmaceutics. Karad and Dr. (Smt) F.S.Dasankoppa, Associate Professor, Department of Pharmaceutics, KLE College of Pharmacy, Hubballi, whose research proposal is forwarded herewith for approval to utilize in house research facilities of our Institution.

This is for your kind information and perusal.

Thanking you,

Yours faithfully,

KLES COLLEGE OF PHARMACY HUBBALLI 580031

PRINCIPAL
Principal
KLES College of Pharmacy
(A constituent unit of KLE Society
of Higher Education & Research)
Vidyanagar, HUBBALLI-580 031

New project proposal (Collaborative Project)

(For Departmental/Staff proposals)

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SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

ENHANCMENT OF DISSOLUTION RATE OF ITRACONAZOLE BY USING CHITOSAN AND MODIFIED CHITOSAN

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

- Chitosan modifications with carboxylic, dicarboxylic and amino acids
- Antimicrobial and antifungal activities of modified chitosan
- Mechanism of antimicrobial or antifungal activities of modified chitosan
- Modified chitosan for enhancement of dissolution rate of itraconazole

2. Name and Designation of

a) **Principle investigator** :

Dr.Amol S.Shete [M.Pharm, PhD]
Assistant Professor, Department of Pharmaceutics

b) Other investigators : **Mr. Gavhane Yogesh**
.Department of Pharmaceutics.
Government College of pharmacy, karad

c) Department :

1. Krishna Institute of Pharmacy of Krishna Institute of Medical Sciences (KIMS) Deemed To Be University, Karad, MS, India

3. Name of the Sponsor : **Not applicable**

4. Duration of Research/Dissertation Project (_____**12**_____ **Months)**

a) Period which may be needed
for collecting the data [illegible] months

b) Period that may be required for [illegible] 30/01/2021
Analysing the data

5. Date of submission of the project to the
Department of Research for protocol review committee: **10/03/2020**

6. Date of submission of the modified project
(modified as per suggestions made by the protocol review committee
to the Department of Research for IEC review

7. Signature (with date) of

a) Applicant staff — Dr. Amol J. Shete

b) Head of the department

c) Dean of the Faculty

Dean
Krishna Institute of Pharmacy,
KIMS (Deemed To Be University) Karad

Mrs. [illegible] Gavhane
Asst. Professor
[illegible]
Govt. College of Pharmacy, Karad

PRINCIPAL
Govt. College of Pharmacy
KARAD

8. Signatures of the other departments [illegible] work
is planned (mention, not applicable if so)

d) Head of the department

Biochemistry ____________

Pathology ____________

Microbiology ____________

Any other ____________

9. IEC review
Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary ____________

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

1. **Title of the Research Project:**

   ENHANCMENT OF DISSOLUTION RATE OF ITRACONAZOLE BY USING CHITOSAN AND MODIFIED CHITOSAN

2. **Study rationale including novelty and application of the work in the context of National priorities of Medical Research**

   Chitin and Chitosan are obtained from the shells of crustaceans such as crabs, prawns, lobsters, shrimps, the exoskeletons of insects and the cell walls of fungi such as aspergillus. These crustacean shell wastes are composed of inorganic salts, protein, lipids and chitin as main structural components. Chitosan is a heteropolymer consists of 2-amino-2-deoxy-β [1-4] -D-glucosamine units, randomly or block distributed throughout the biopolymer. Chitosan is the N-deacetylated derivative of chitin, but the process of N-deacetylation is never complete. One of the differences between chitin and chitosan is that the degree of deacetylation in chitin is very little [1-2, 5]. The structures of cellulose, chitin and chitosan are shown in figure 1, 2, 3 respectively [1-2]-

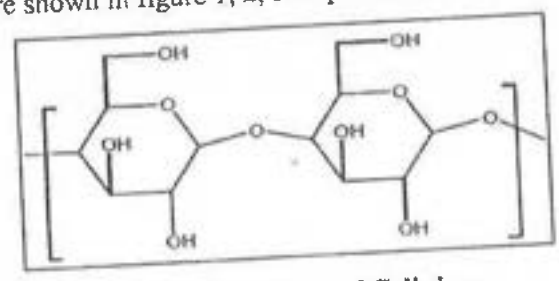

Figure 1 Structure of Cellulose

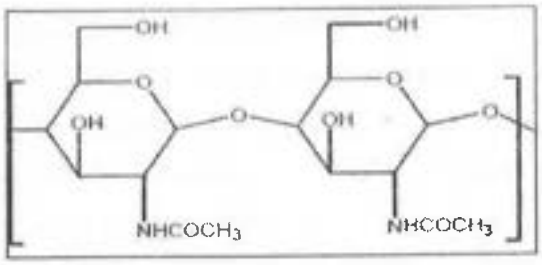

Figure 2 Structure of Chitin

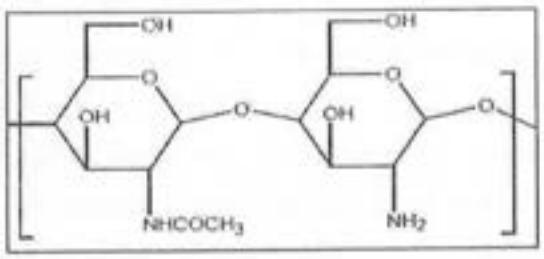

Figure 3 Structure of Chitosan

Chitosan contain one primary amine and two free hydroxyl groups for each monomer with a unit formula of C6H11O4N. This natural biopolymer is a glucosaminoglycan and is composed of two common Sugars i.e. glucosamine and N-acetyl glucosamine [1]. Among the many mentions of CS derivatives in the literature, one can differentiate specific reactions involving the –NH2 group at the C-2 position or nonspecific reactions of –OH groups at the C-3 and C-6 positions [especially esterification and etherification]. Chitosan is a biodegradable, biocompatible polymer. The presence of reactive primary amino groups renders special property that makes CS very useful in pharmaceutical applications. Commercially available CS has an average molecular weight ranging between 3800 and 20,000 Daltons and is 66 to 95% deacetylated. The solubility of CS depend on the degree of deacetylation, pH and on the protonation of free amino groups. CS is readily soluble in dilute solutions of most of the organic acids such as citric, tartaric acid, while to a limited extent in inorganic acids. CS is soluble at below pH 5.5 due to presence of free amino groups along the polymer chain and it is insoluble at neutral and high pH regions due to its molecular structure and pKa [6.2–7.0]. The presence of these amino groups allows the synthesis of different chitosan derivatives. CS has a large number of applications in pharmaceutical dosage form; its further application can be exploited by modifications of basic structure to obtain polymers with a range of

properties. It can be done by number of approaches such as chemically as well as by enzymatically. Why is chemical modification of chitosan needed? The partial answer to this question may be explained by the water-insoluble nature of chitosan. Additionally, modification is required in order to manipulate other properties of chitosan to meet specific needs [2-4]. The chemical modification of chitosan is of interest because the modification would not change the fundamental skeleton of chitosan, would keep the original physicochemical and biochemical properties and finally would bring new or improved properties. The chemical modification affords a wide range of derivatives with modified properties for specific end use applications in diversified areas mainly of pharmaceutical, biomedical and biotechnological fields. Chemically modified chitosan enhance the solubility in water, acidic, neutral and alkaline media. The primary amine groups render special properties that make chitosan very useful in pharmaceutical applications. Chitosan's nontoxicity, biodegradability, and biocompatibility make it suitable for various pharmaceutical and agrochemical applications. Modified chitosan is expected to show different physicochemical properties from those of native chitosan. With regard to drug delivery applications, the new properties of modified derivatives include enhanced solubility and dissolution rate. For example, Itraconazole having bioavailability issues, So Itraconazole Complexation with chitosan and its modified derivatives may increase the solubility and dissolution rate of Itraconazole in SGF. In recent years, environmental-friendly measures have been developed for managing crop diseases as alternative to chemical pesticides, including the use of natural compounds such as chitosan. Chitosan has much potential application in agriculture because polymer is essentially naturally occurring and biodegradable therefore it should not cause pollution problems. Chitosan application in agronomy can reduce the environmental stress caused by drought or soil deficiencies, strengthening the seed viability, increasing yields and reducing the decay of fruits and vegetables. The chitosan is an active molecule that finds many possibilities for application in agriculture, including plant disease control.

3. Objectives:

1. To modify physicochemical properties of chitosan by Antisolvent precipitation technique and to study the effect on degree of deacetylation and molecular weight
2. Solid state characterization of modified chitosan derivatives
3. To evaluate modified chitosan for enhancement of solubility and dissolution rate of Itraconazole.

4. Summary of the proposed research (about 150 to 200 wards) indicating overall aim of the research, Methodology, expected outcome etc.

Fungal infections (like athlete's foot, finger and toe nail infections, yeast infections, oral thrush, and ringworm) are commonly acquired and are known to persist over time, causing great discomfort. There are also systemic and opportunistic fungal infections which can result in more serious diseases, particularly in patients with compromised immune systems. Itraconazole, a triazole derivative, is used for the treatment of systemic fungal infection and is preferred over other drugs for histoplasmosis, blastomycosis, systemic mycosis, etc. It is a BCS class II drug having low solubility and high permeability. The extremely low solubility results into poor oral bioavailability (55%) of itraconazole. Presently, it is available in the form of capsule (Sporanox R, Itaspore R, Canditral R) the capsules contain 100 mg of itraconazole coated on sugar spheres. These capsules are currently believed to contain residual levels of methylene chloride and original SPORANOX® capsules were reformulated to the USP limit for methylene chloride which is 500 micrograms per day. Current SPORANOX® technology produces a product having approx. 60% less bio-availability under fasted conditions and solution dosage form (Sporanox oral solution). However, the marketed solution dosage form contains high amount of solubility-enhancing agents such as polyethylene glycol (PEG) 20000 and HP-β-cyclodextrin, which cause osmotic diarrhea. It is also available in the form of oral solution at 10 mg/ml. Solutions, in general, are less stable and difficult to handle.

5. **Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)**

The main limitations in the use of chitosan in several applications are its high viscosity and low solubility at neutral pH. Different experimental variables should be taken into account when working with chitosan solutions such as the nature of the salt counterion, length of polymer chain, molecular weight (Mw), pH, ionic strength, the addition of a nonaqueous solvent, and the degree of N-acetylation. Their different solubilities in dilute acids are commonly used to distinguish between chitin and chitosan. Chitosan, the soluble form, can have a degree of acetylation between 0% and about 60%, the upper limit depending on parameters such as processing conditions, molar mass, and solvent characteristics. Thanks to the protonation of free amine groups present along the chitosan chain; this macromolecule can be dissolved in diluted aqueous acidic solvents, rendering the corresponding chitosan salt in solution [4-6].

Chitin and chitosan are interesting candidates for use in the medical and pharmaceutical applications because they have positive properties such as biocompatibility, biodegradability, and nontoxicity that make them suitable in biomedical field (Khor & Lim, 2003). Moreover, other properties such as analgesic effect, antitumor activity, hemostatic, anticholesterolemic, antimicrobial, permeation enhancing effect, and antioxidant properties have also been reported [6-8].

Itraconazole is an antifungal compound and a weak base have Mw=705.6g/mol, pKa=2 and 3.7, log P=6.2 with an extremely low aqueous solubility i.e. ~=5 g/ml at pH 1 and ~=1mg/ml at pH 7 and high permeability and consequently belonging to biopharmaceutical classification system Class II.In literature following attempts has been made for enhancement of dissolution rate or bioavailability of Itraconazole.

- Micronized cocrystal dry powder formulations of itraconazole with succinic acid (SA) or l-tartaric acid (TA) with a particle size diameter of < 2 μm[9]
- Spherical Crystal Agglomerates of Itraconazole Soluplus and polyethylene glycol 4000 (PEG 4000) showed increased solubility (540 μg/ml) in 0.1 N hydrochloric acid as compared to pure drug (12 μg/ml)[10]
- KinetiSol® Dispersing (KSD) technology has been used with use of polyvinyl alcohol (PVAL) as a concentration enhancing polymer for amorphous solid dispersions of Itraconazole [11]
- Itraconazole (ITZ) crystalline nanoparticles were prepared using relatively simple, low-cost sonoprecipitation technique, in which both the solvent and antisolvent were organic in nature. The effect of stabilizer type (hydroxypropyl methylcellulose, hydroxypropyl cellulose, Inutec SP1®, and pluronic F127), drying method (oven and freeze drying) and matrix former used (Avicel PH101, and Aerosil®200) [12]
- Different Sized Spray-Dried Crystalline Itraconazole has been reported for enhancement of solubility and dissolution rate [13].
- Continuous Production of Itraconazole-based Solid Dispersions by Hot Melt Extrusion for enhancement of dissolution rate has been reported [14].
- Cocrystals of itraconazole are reported in literature with different coformers by different methods like cogrinding with different amino acids, micronized Cocrystals with succinic acid or l-tartaric acid for inhalation by jet milling technique. Gas antisolvent cocrystallization with L-malic acid and tetrahydrofuran. Solvent evaporation technique with 4-hydroxybenzoic acid, trans-cinnamic acid, Suberic acid, Sebacic acid, 1-hydroxy-2-napthoic acid, Benzamide and electrospray technology using fumaric and succinic acid as a coformers in 2:1 ratio. Rapid evaporation and spray drying with seburic acid for inhalational therapy and found stable for 1 month at 600 C (Jingwen Weng). In one investigation the effect of chain length of aliphatic carboxylic acids on

11. Brough C, Miller DA, Ellenberger D, Lubda D, Williams RO. Use of Polyvinyl Alcohol as a Solubility Enhancing Polymer for Poorly Water-Soluble Drug Delivery (Part 2). AAPS PharmSciTech. 2016 Feb; 17(1):180-90
12. .Badawi AA, El-Nabarawi MA, El-Setouhy DA, Alsammit SA. Formulation and stability testing of itraconazole crystalline nanoparticles. AAPS PharmSciTech. 2011 Sep;12(3):811-20.
13. Kumar S, Jog R, Shen J, Zolnik B, Sadrieh N, Burgess DJ. In Vitro and In Vivo Performance of Different Sized Spray-Dried Crystalline Itraconazole. J Pharm Sci. 2015 Sep; 104(9):3018-28.
14. McComiskey KPM, Mugheirbi NA, Stapleton J, Tajber L. In situ monitoring of nanoparticle formation: Antisolvent precipitation of azole anti-fungal drugs. Int J Pharm. 2018 Mar 28; 543(1-2):201-213.
15. Thiry J, Lebrun P, Vinassa C, Adam M, Netchacovitch L, Ziemons E, Hubert P, Krier F, Evrard B. Continuous production of itraconazole-based solid dispersions by hot melt extrusion: Preformulation, optimization and design space determination. Int J Pharm. 2016 Dec 30; 515(1-2):114-124.
16. Shete, S. Murthy , S. Korpale , A. Yadav, S. Sajane, S. Sakhare, R. Doijad. Cocrystals of Itraconazole with Amino Acids: Screening, Synthesis, Solid State Characterization, In Vitro Drug Release and Antifungal Activity. J Drug Deliv Sci Technol, 28 (2015)46-55.
17. M. Karashima, N. Sano, S. Yamamoto, Y. Arai, K. Yamamoto, N. Amano, Y. Ikeda, Enhanced pulmonary absorption of poorly soluble itraconazole by micronized cocrystal dry powder formulations, European Journal of Pharmaceutics and Biopharmaceutic (2017), doi: http://dx.doi.org/10.1016/j.ejpb.
18. Formation of itraconazole-succinic acid cocrystals by gas antisolvent cocrystallization. AAPS PharmSciTech. 2012 Dec; 13(4):1396-406. doi: 10.1208/s12249-012-9866-4. Epub 2012 Oct 9.

19. Crystal engineering of novel cocrystals of a triazole drug with 1, 4-dicarboxylic acids.
J Am Chem Soc. 2003 Jul 16; 125(28):8456-7.
20. Sharvil Patil, Vinayak Ujalambkar, Abhijeet Mahadik. Electrospray technology as a probe for cocrystal synthesis: Influence of solvent and coformer structure. Journal of Drug Delivery Science and Technology 39 (2017) 217- 222
21. Jingwen Weng, Si Nga Wong, Xiaoyan Xu, Bianfei Xuan, Chenguang Wang, Ruipeng Chen, Changquan Calvin Sun, Richard Lakerveld, Philip Chi Lip Kwok, and Shing Fung Chow. Cocrystal engineering of itraconazole with suberic acid via rotary evaporation and spray drying. Crystal Growth & Design. 2019 19 (5), 2736-2745. DOI: 10.1021/acs.cgd.8b01873
22. Anna Shevchenko, Inna Miroshnyk, Lars-Olof Pietilä, Jorma Haarala, Jukka Salmia, Kai Sinervo, Sabiruddin Mirza, Bert van Veen, Erkki Kolehmainen, Nonappa, and Jouko Yliruusi. Diversity in Itraconazole Cocrystals with Aliphatic Dicarboxylic Acids of Varying Chain Length Crystal Growth & Design 2013 13 (11), 4877-4884 DOI: 10.1021/cg401061t
23. Anna Shevchenko, LuisM.Bimbo, Inna Miroshnyka, Jorma Haaral, Kristýna Jelínkováa kaisa Syrjänen, Bertvan Veen, Juha Kiesvaara, Hélder A.Santos, JoukoY liruusi. A new cocrystal and salts of itraconazole: Comparison of solid-state properties, stability and dissolution behaviour. International journal of pharmaceutics, Volume 436, Issues 1-2, 15 October 2012, Pages 403-409. https://doi.org/10.1016/j.ijpharm.2012.06.045

6. Detail research plan :

i. Review of Literature:

The literature has been reviewed for the crystal engineering, types, methods for preparation and evaluation

ii. Analytical Method:

A suitable UV-Visible, HPLC etc. method developed for this proposed study. The selected method will be validated and it will be used for the formulation and in-vitro drug analysis.

iii. Selection of Drug Delivery Technology:

Suitable drug delivery system will be selected for the delivery of formulated products

iv. Preformulation:

Techniques such as IR spectroscopy, X-ray diffraction, DSC will be used during Preformulation studies to study the drugs-excipients interactions and for other applications.

v. Modification of chitosan

Modification of chitosan will be carried out by using suitable technique and suitable coformers

vi. Solid state characterization of molecular complexes:

Molecular complexes will be characterized by FTIR, PXRD, DSC and any other recent techniques like Raman spectroscopy, Mass, NMR etc.

Vii. Evaluation of formulations:

Molecular complexes will be evaluated for solubility, dissolution studies, stability studies as per ICH guidelines, phase transformation studies and will be evaluated for performance in suitable dosage form.

viii. Probable Method of Data Analysis

A valid statistical method will be used for analyzing the data obtained from the research to reveal the level of their significance.

ix. **Study Design (Plan):**

Activity	Months			
	0	1	2	3
Selection and procurement of chemicals, glassware's and equipment's				
Preformulation and development of formulations of itraconazole				
In vitro evaluation and stability studies of the same				
Writing of research reports , papers and patents				

7. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

- **Equipments**: R.B.F. and Reflux condenser, Single pan electronic balance, Magnetic stirrer, Melting point apparatus, High speed homogenizer, centrifuge, 8 station tablet punching machine, stability chamber, hot air oven, sieve shaker etc.

8. Budget of the project:

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	Synthesis of optimization of chitosan derivatives	NA	0	0
2	In vitro evaluation for solubility and dissolution studies	NA	0	0
3	Stability studies as per ICH guidelines	NA	0	0

Details of the investigations/ procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	FTIR Analysis	10	200	2,000
2	Differential scanning calorimetric analysis	15	1000	15,000
3	Raman spectroscopy	10	500	5,000
5	Mass spectroscopy	10	2,000	20,000
6	NMR spectroscopy	10	3,000	30,000
7	Scanning electron microscopy	05	1,000	5,000
8	PXRD	15	1000	15,000
Total				92,000

9. Applicant's signatures with date

Mr. Y. N. Gavhane
Assistant Professor
Dept. of Pharmaceutics
Govt. College of Pharmacy, Karad

FORMAT FOR SUBMISSION OF ESTIMATED BUDGET FOR PROPOSED RESEARCH STUDY

Name and status of Applicant: - Dr. Amol S.Shete (Assistant Professor), Mr. Yogesh Gavhnae

Name of the Department: - Pharmaceutics

Name of the faculty:- KIMSDTU'S Krishna Institute of Pharmacy, Karad and Government college of pharmacy, karad

Title of the research study: ENHANCMENT OF DISSOLUTION RATE OF ITRACONAZOLE BY USING CHITOSAN AND MODIFIED CHITOSAN

IEC approval number of the project:

Budget of the project: To be submitted as per the following format. Additional applicable details if any may also be provided

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation / Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1	Synthesis or optimization of chitosan derivatives	NA	Krishna Institute of pharmacy, karad and Govt. College of pharmacy, karad	0	0
2	In vitro evaluation for solubility and dissolution studies	NA		0	0
3	Stability studies as per ICH guidelines	NA		0	0

B. Details of the reagents/equipment/ planned to be purchased through the store

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
• Equipment's-				
• Chemicals				
Total				00

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation / Procedure	Number to be performed	Unit cost	Total cost
1	FTIR Analysis	10	200	2,000
2.	Differential scanning calorimetric analysis	15	1000	15,000
3	Raman spectroscopy	10	500	5,000
5	Mass spectroscopy	10	2,000	20,000
6	NMR spectroscopy	10	3,000	30,000
7	Scanning electron microscopy	05	1,000	5,000
8	PXRD	15	1000	15,000
Total				92,000

GRAND TOTAL (A+B+C) - 0+0+ 92,000 = 92,000 (Ninety two thousand only)

Signature & date of investigators

Gavhane
Professor
Pharmaceutics
Pharmacy, Karad

PRINCIPAL
Govt. College of Pharmacy

Certified that the above budget is appropriate & recommended for sanction

Recommended for sanction

Signature & date of HOD

Dean
Krishna Institute of Pharmacy
"Deemed To Be University"

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

Annexure I- A

NEW COLLABORATIVE RESEARCH PROPOSAL

(For Departmental/Staff proposals)

==========

SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

ANALYSIS OF ADVERSE DRUG REACTIONS ASSOCIATED WITH ANTIBIOTICS IN TWO NABH ACCREDITED HOSPITALS.

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

With this analysis, the prevalence of adverse drug reactions caused by antibiotics, its pattern, reporting and management in two prominent hospitals can be assessed. So necessary steps needed for minimizing the ADRs can be adopted by the hospitals to improve the therapeutic care.

2. Name and Designation of

a) Principle investigator : Mrs. Jisha Annie Geevarghese

b) Co/ Principle investigator : Dr. Vrishali Chavan, Medical director, Sahyadri hospital , Karad

c) Department : Pharmacy

3. Name of the Sponsor :_____

4. Duration of Research/Dissertation Project (1.5year=18Months) from 3rd August 2020

a) Period which may be needed for collecting the data : 1yrs

b) Period that may be required for : 2months

analysing the data

5. Date of submission of the project to the:
   Department of Research for protocol review committee

6. Date of submission of the modified project
   (Modified as per suggestions made by the protocol review committee
   to the Department of Research for IEC review

7. Signature (with date) of :

a) Applicant staff : _____

b) Head of the department : _____

c) Dean of the Faculty : _____

8. Signatures of the other departmental heads where part of the research study work isplanned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

---

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

Title of the Research Project: **ANALYSIS OF ADVERSE DRUG REACTIONS ASSOCIATED WITH ANTIBIOTICS IN TWO NABH ACCREDITED HOSPITALS.**

1. Study rationale including novelty and application of the work in the context of National priorities of Medical Research.

   With collaborative research analysis, the prevalence of adverse drug reactions caused by antibiotics, its pattern, reporting and management in two prominent hospitals can be assessed. So necessary steps needed for minimizing the ADRs can be adopted by the hospitals to improve the therapeutic care. The study and analysis of ADRs will be a part of pharmacovigilance programme of the hospital and it will provide information regarding the predictable and preventable ADRs occurring in the hospital setting.

2. Objectives:

Primary Objectives:

- To study the demographic profile, pattern of therapy & evaluate the response to treatment of patients prescribed with antibiotics for various indications in different departments.
- To analyze the ADRs occurred in the study patients given antibiotic therapy.
- To identify co morbidities, past and present medications of the patient prescribed with antibiotics.
- To observe the therapeutic pattern of patients receiving antibiotics therapy

Secondary Objectives:

- ❖ To study the types & severity of Adverse drug reactions reported.
- ❖ To assess the causality of the ADRs reported.
- ❖ To assess the management of ADRs in the study patients.

3. Summary of the proposed research (about 150 to 200 words) indicating overall aim of the research, Methodology, expected outcome etc.

The study aims to promote assessment, reporting, and identify pattern of ADRs in patients treated with antibiotics in two different NABH hospitals of the same locality.

1. DESIGN OF THE STUDY

Non-experimental (Observational), prospective, interventional Spontaneous reporting follow up study.

2. DURATION OF THE STUDY

The study is to be conducted over a period of 1.5 year of which data collection period is 12months.

All patients prescribed with antibiotics in different departments will be included in the study and the ADRs reported will be assessed for its severity, predictability and causality assessment using WHO Scale, Naranjo Scale and Hartwig scale. The management of ADRs will be assessed using present guidelines. The steps which can be taken to minimize the ADRs will be documented. The possible drug interactions will be identified.

4. Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)

ADRs have a considerable negative impact on both health and healthcare costs. ADR monitoring and reporting activity is in its infancy in India. India is a developing country with a large drug consuming population. It is the fourth largest producer of pharmaceuticals in the world with more than 6000 licensed drug manufacturers and over 60,000 branded formulations. Thus it is essential that the drug treatment should be safe,

efficacious and cost effective. It is also emerging as a clinical trial hub exposing larger population to newer drug treatments. It is the need of the hour to identify Adverse Drug Reactions as early as possible and to prevent them if possible, to ensure the well-being of the patient at a reasonable cost. It is a well-established fact that pre-marketing clinical trials do not have the statistical power to detect rare adverse drug reactions (ADRs) nor do they have significant follow-up to identify delayed ADRs or effects from long-term exposure. In view of this, pharmacovigilance plays a prominent role in establishing the safety profile of marketed drugs [1].

Many observational studies have examined the incidence, pattern, and severity of ADRs, but most of these have been performed in America or Europe; reports on Asian countries are extremely rare. Most are based on information from primary care center pharmacies, and data on ADRs related to antimicrobial agents reported from tertiary care hospitals are extremely rare[2,3,4].

Although a number of studies on ADRs caused by various drugs have been conducted, none have focused specifically on antibiotics [5]. Therefore, in this study we are investigating the frequency of antibiotic-related ADRs experienced at 2 NABH accredited tertiary health care hospitals.

1. Vikas D., Sindhu S., Anand K.S. Adverse drug reaction monitoring in India. JIACM. 2004;5(1):27–33

2. J. A. Trubiano, K. A. Cairns, J. A. Evans et al., "The prevalence and impact of antimicrobial allergies and adverse drug reactions at an Australian tertiary centre," *BMC Infectious Diseases*, vol. 15, no. 1, 2015.

3. S. Sharma, V. Khajuria, V. Mahajan, Z. Gillani, . Richa, and V. Tandon, "Adverse drug reactions profile of antimicrobials: A 3-year experience, from a tertiary care teaching hospital of India," *Indian Journal of Medical Microbiology*, vol. 33, no. 3, p. 393, 2015.

4. A. K. Jha, G. J. Kuperman, E. Rittenberg, J. M. Teich, and D. W. Bates, "Identifying hospital admissions due to adverse drug events using a computer-based monitor," *Pharmacoepidemiology and Drug Safety*, vol. 10, no. 2, pp. 113–119, 2001.

5. R. S. Evans, J. F. Lloyd, G. J. Stoddard, J. R. Nebeker, and M. H. Samore, "Risk Factors for Adverse Drug Events: A 10-Year Analysis," *Annals of Pharmacotherapy*, vol. 39, no. 7-8, pp. 1161–1168, 2005.

5. Detail research plan :

(Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other material to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

1. DESIGN OF THE STUDY

Non-experimental (Observational), prospective interventional follow up study.

2. DURATION OF THE STUDY

The study will be conducted over a period of 1.5 year of which data collection period will be for 12 months.

3. SETTINGS

The proposed study will be conducted at all departments of Krishna Institute of Medical Sciences Karad, is a 1050 bedded tertiary care, teaching & super-speciality referral hospital

4. STUDY POPULATION

Inpatients who receives antibiotics for the treatment of infections or as prophylaxis & and satisfying the inclusion and exclusion criterias will be selected for the study.

5. METHOD OF SELECTION

Patients will be selected on the basis of criteria for eligibility

6. CRITERIA FOR ELIGIBILITY

INCLUSION CRITERIA

Patients satisfying all the following criteria will be included in the study.

- Patients who are receiving antiobiotics in all departments during the 1year study period.
- Patients under all age groups.
- Patients with no known hypersensitivity to any antibiotics.
- Patients with signed informed consent.

EXCLUSION CRITERIA

- Patients receiving any other antimicrobial drug other than antibiotics.

7. SAMPLE SIZE

Sample size with d value :

A sample size of approx. 245 min and max. of 600 is calculated with d value 0.05 and 0.03 respectively .

8. RESOURCE REQUIREMENTS

- Examination of patient's medical records.
- Review of the hospital information system files.
- Interview of the patient or his/her caregivers.

9. DATA COLLECTION TOOLS

- Pre-designed, Standardized data collection forms
- Hartwig and Seigel scale
- Naranjo scale
- Modified Shumock and Thornton method

10. DATA COLLECTION METHOD

•Data will be collected prosspectively through medical records, patient electronic medical records and patient interviews and follow up-data available in our hospital.

•The demographic details of the patients, drug therapy details including dose, frequency, duration of therapy, response to therapy etc will be collected using a pre-designed data collection form.

•Laboratory data including hematologic parameters, kidney function tests, liver function tests, cytopathology reports will be collected.

STATISTICAL METHODS

Statistical analysis will be performed by IBM SPSS statistics 20.0.Continuous variables will be analyzed statistically using Student's Independent 't' test & for categorical variables the results will be given in percentages. For finding the association with categorical variables Pearson chi square ($\chi 2$) test will be performed.

6. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

   All Pathology, Hematology, Biochemistry reports

   Access to patient records

7. Budget of the project:

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	CBC	300	50	15,000
2	LFT	300	125	37,500
3	RFT (Urea &Creatinine) Sodium & Potassium)	300	24 50	22,200
			Total	74,700

Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1				
2				

8. Applicant's signatures with date-

Dr. R. C. Doijad	**Mrs. Jisha Annie**	**Dr. Vrishali chavan**
Dean, KIP	**Prinicipal Investigator**	**Co/ Principal Investigator**

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

6. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation

All Pathology, Hematology, Biochemistry reports

Access to patient records

7. Budget of the project:

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	CBC	300	50	15,000
2	LFT	300	125	37,500
3	RFT (Urea &C reatinine) Sodium & Potassium)	300	24 50	22,200
			Total	74,700

A minimum of 100 patients all necessary details related to the study will be provided by Sahyadri Hospital, Karad

Details of the investigations/procedures planned to be outsourced

Sr No	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1				
2				

8. Applicant's signatures with date-

Dr. R. C. Doijad
Dean, KIP

Mrs. Jisha Annie
Principal Investigator

Dr. Vishali Chavan
Principal Investigator

Dean
Krishna Institute of Pharmacy,
"Deemed To Be University" Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY"

(Declared under section 3 of the UGC Act, 1956 vide Notification No F.9-15 /2001-U.3 of the MHRD, Govt of India)

Karad, Dist. Satara (Maharashtra State) Pin: 415 110 Tel: 02164 -241555-58 Fax: (02164) 241070
Website: www.kimsuniversity.in E-mail: kipdean@rediffmail.com

KRISHNA INSTITUTE OF PHARMACY, MALKAPUR, KARAD

Ref. No.-KIMSDU/KIP/ 374 /2020 **Date: 07/08/2020**

To,
The Director of Research,
KIMS Deemed to be University, Karad

Subject: Submission of Collaborative Research Project.....Regarding

Dear Sir,

With respect to the subject cited above, We are submitting a collaborative research proposal between Krishna Institute of Pharmacy, KIMSDU, Karad and Sahyadri hospital, Karad, entitled "Analysis of Adverse dug reactions associated with antibiotics in two NABH accredited hospitals".

The original idea of this project is from our Institution. The principal investigator (PI) of Krishna Institute of Pharmacy is Mrs. Jisha Annie Geevarghese (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Principal investigator (PI) of Sahyadri hospital is Dr.Vrishali Chavan, (Medical Director, Sahyadri Hospital, Karad).

All the necessary clinical details and investigation results of minimum 100 patients will be contributed by Sahyadri hospital, Karad.

Kindly consider this proposal for approval.

Thanks and with best regards.

KRISHNA INSTITUTE OF PHARMACY KIMS "Deemed To Be University" Karad 415539

Dr. Rajendra C. Doijad
Dean

9/8/2020

Annexure I- A

NEW COLLABORATIVE RESEARCH PROPOSAL

(For Departmental/Staff proposals)

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SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

CLINICAL IMPACT OF INPATIENT ANTICOAGULATION SERVICES WITH ASSESSMENT OF VARIOUS LABORATORY MONITORING TESTS.

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

This analysis is mainly focusing on inpatient anticoagulation services of patients on long term treatment with both traditional and newer anticoagulants with reference to laboratory values. There is very limited data available regarding the specific tests used to assess the efficacy of various anticoagulants. So this study will be focusing to estimate the sensitivity of various anticoagulants to different tests.

2. Name and Designation of
   a) Principal investigator : Mrs. Jisha Annie Geevarghese
   b) Principal investigator : Dr. Viswanath Swami
   c) Department : Pharmacy

3. Name of the Sponsor : _____

4. Duration of Research/Dissertation Project (2years=24Months) from 10th August 2020
   a) Period which may be needed for collecting the data : 1.5yrs
   b) Period that may be required for analysing the data : 2months

5. Date of submission of the project to the:
   Department of Research for protocol review committee

6. Date of submission of the modified project
   (Modified as per suggestions made by the protocol review committee
   to the Department of Research for IEC review

7. Signature (with date) of
a) Applicant staff : _____
b) Head of the department : _____
c) Dean of the Faculty : _____

8. Signatures of the other departmental heads where part of the research study work isplanned (mention, not applicable if so)
d) Head of the department
   Biochemistry : _____
   Pathology : _____
   Microbiology : _____
   Any other : _____

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9. IEC review
Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____
    Date

11. Signature of IEC Chairman : _____
    Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

Title of the Research Project: **CLINICAL IMPACT OF INPATIENT ANTICOAGULATION SERVICES WITH ASSESSMENT OF VARIOUS LABORATORY MONITORING TESTS.**

1. Study rationale including novelty and application of the work in the context of National priorities of Medical Research.

   This collaborative research analysis will be focusing to estimate the sensitivity of various anticoagulants to different tests. With the introduction of new anticoagulant agents, there is a need for information on which coagulation tests are most suitable. These agents react differently to assays used to monitor older anticoagulant agents because they have alternative modes of action. Therefore, other tests, or modifications of existing tests which are more appropriate for newer agents, are needed.

2. Objectives:

Primary Objectives:

- To study the demographic profile, pattern of therapy & evaluate the response to treatment of patients prescribed with anticoagulants for different indications.
- To analyze the primary secondary outcomes occurred in the study patients given anticoagulant therapy.
- To assess Patient Satisfaction and Quality of Life with Anticoagulation utilizing the Duke Anticoagulation Satisfaction Scale (DASS)
- To assess the sensitivity of different laboratory tests like PT/INR, prothrombinase induced clotting time, Thrombin generation assays with different anticoagulants.

Secondary Objectives:

- To identify co morbidities, past and present medications of the patient prescribed with anticoagulants.
- To observe the therapeutic indications of patients receiving anticoagulant therapy
- To study the types & severity of Adverse drug reactions reported.
- To assess the management of ADRs in the study patients.

3. Summary of the proposed research (about 150 to 200 words) indicating overall aim of the research, Methodology, expected outcome etc.

   The study aims to estimate the sensitivity of various anticoagulants to different tests and estimate the safety efficacy of newer and traditional anticoagulants.

   DESIGN OF THE STUDY

   Non-experimental (Observational), prospective, interventional follow up study.

   1. **DURATION OF THE STUDY**

   The study is to be conducted over a period of 2 year of which data collection period is 18 months.

   All patients prescribed with anticoagulants for different indications will be included in the study and the primary outcome for an increase in TTR will be noted and ADRs reported will be assessed for its severity, causality assessment using Naranjo Scale. The management of ADRs will be assessed using present guidelines. The sensitivity of different laboratory tests for conventional and traditional anticoagulants will be assessed.

4. Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)

   The widespread use of anticoagulant therapies in the inpatient setting poses significant risks to hospitalized patients. Maintaining a balance between bleeding and clotting disorders has always been a challenge in treating patients on anticoagulants. As a result anticoagulant monitoring is extremely important and inappropriate monitoring will result in severe hazards [1]. There are drawbacks associated with current and previous

monitoring methods. So it is necessary to find out the correlation of different agents with different tests.

Anticoagulation with warfarin is a high risk therapy involving complex dosing, monitoring, and ensuring adherence to outpatient therapy. Monitoring anticoagulation intensity utilizing the prothrombin time (PT) and the international normalized ratio (INR) is used to determine the effectiveness of anticoagulation therapy. The proportion of time the INR is within the therapeutic range (TTR) is considered a surrogate measure of anticoagulation control and is associated with lower rates of major bleeds and thromboembolism.

Oral anticoagulation is indicated for a number of conditions, including prevention of systemic embolism in patients with mechanical heart valves, valvular heart disease, myocardial infarction, and atrial fibrillation [2]. It is often intended that anticoagulation be maintained over the long term. Pharmacist managed anticoagulation clinics eliminate the waiting period between lab work from an external facility and decisions from physicians. The chromogenic anti-factor IIa assay has been successfully used for therapeutic drug monitoring of parenteral direct thrombin inhibitors and is insensitive to lupus anticoagulant or genetic coagulation deficiencies[3,4,5].

1. Doona D, Elizebath M. Laboratory monitoring of new anticoagulants. Am. J. Hematol. 85:185–187, 2010.
2. Hirsh J, Dalen JE, Anderson DR, Poller L, Bussey H, Ansell J, Deykin D, Brandt JT. Oral anticoagulants: mechanism of action, clinical effectiveness, and optimal therapeutic range. Chest. 1998;114:445S–469S.
3. Salemi A, Agrawal YP, Fontes MA. An assay to monitor bivalirudin levels on cardiopulmonary bypass. Ann Thorac Surg. 2011;92(1):332–334. doi: 10.1016/j.athoracsur.2010.12.064
4. Salmela B, Joutsi-Korhonen L, Saarela E, Lassila R. Comparison of monitoring methods for lepirudin: impact of warfarin and lupus anticoagulant. Thromb Res. 2010;125(6):538–544.
5. Adcock DM, Gosselin R, Kitchen S, Dwyre DM. The effect of dabigatran on select specialty coagulation assays. Am J Clin Pathol. 2013;139(1):102–109

5. Detail research plan :

(Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other material to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

1. DESIGN OF THE STUDY

Non-experimental (Observational), prospective interventional follow up study.

2. DURATION OF THE STUDY

The study will be conducted over a period of 2 year of which data collection period will be for 18 months.

3. SETTINGS

The proposed study will be conducted at general medicine and cardiology departments of Krishna Institute of Medical Sciences Karad, is a 1050 bedded tertiary care, teaching & super-specialty referral hospital and KLE university, Belgavi

4. STUDY POPULATION

Inpatients who receives anticoagulants for the various indications & and satisfying the inclusion and exclusion criterias will be selected for the study.

5. METHOD OF SELECTION

Patients will be selected on the basis of criteria for eligibility

6. CRITERIA FOR ELIGIBILITY

INCLUSION CRITERIA

Patients satisfying all the following criteria will be included in the study.

- Patients who are receiving anticoagulants in general medicine and cardiology departments during the 2year study period.
- Patients who are above 18 years of age..
- In case of warfarin patients, who are on warfarin treatment at least 2 months prior to enrolment.
- Patients with signed informed consent.

EXCLUSION CRITERIA

- Patients having liver/renal insufficiency
- Pregnant/breast feeding candidates.

7. SAMPLE SIZE

A sample size of approx125 is calculated.

8.RESOURCE REQUIREMENTS

- Examination of patient's medical records.
- Review of the hospital information system files.
- Interview of the patient or his/her caregivers.

9. DATA COLLECTION TOOLS

- Pre-designed, Standardized data collection forms
- Duke Anticoagulation Satisfaction Scale (DASS)
- Naranjo scale

10. DATA COLLECTION METHOD

•Data will be collected prospectively through medical records, patient electronic medical records and patient interviews and follow up-data available in our hospital.

•The demographic details of the patients, drug therapy details including dose, frequency, duration of therapy, response to therapy etc will be collected using a pre-designed data collection form.

•Laboratory data including hematologic parameters, kidney function tests, liver function tests reports will be collected.

STATISTICAL METHODS

Statistical analysis will be performed by IBM SPSS statistics 20.0.Continuous variables will be analyzed statistically using Student's Independent 't' test & for categorical variables the results will be given in percentages. For finding the association with categorical variables Pearson chi square ($\chi 2$) test will be performed. p (probability) value of ≤ 0.05 will be considered for statistical significance. All test of statistical significance will be two tailed.

6. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

All Hematology, Biochemistry reports

Access to patient records

7. Budget of the project:

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost(Rs)	Total cost(Rs)
1	PT/INR	100	100	10,000
2	LFT	125	125	15625
				75625

All necessary investigation details of minimum 50 patients will be provided by KLE university

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1	Thrombin generation assay kit		50,000	50,000
2				
	Total			

Total A+B= Rs. 75625/-

8. Applicant's signatures with date-

Dr. R. C. Doijad

Dean, KIP

Mrs. Jisha Annie

Principal Investigator

Dean
Krishna Institute of Pharmacy
(KIMS "Deemed To Be University)

KRISHNA INSTITUTE OF PHARMACY
KIMS
"Deemed To Be University"
Karad
415539

Annexure I - A

Collaborative research with KLE college of Pharmacy,Hubali.

New project proposal

SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

THE ADDITIVE EFFECT OF ORAL ADMINISTRATION LYCOPENE TO TAMSULOSIN AND FINASTERIDE IN A BENIGN PROSTATIC HYPERPLASIA RAT MODEL

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

2. Name and Designation of

a) Principle investigator : Mr.Anup Ashokrao Patil
Assistant professor KIMSDU'S
Faculty of Pharmacy,Karad.

Co-Investigator : Dr.Pramod Gadad.
Associate professor,KLE College Hubali

b) Other investigators :_____

c) Department :1) Department of Pharmacology, KLE University' KLE College Hubali, Karnataka
2) Department of Pharmacology, KIMSDU'S Faculty of Pharmacy, Maharastra, Karad.

3. Duration of Research/Dissertation Project: From: Feb 2020 To Oct 2020

a) Period which may be needed : 07months

for collecting the data

b) Deadline for collecting the data : Sept 2020

c) Period that may be required for analysing the data : 02 months

d) Deadline for analysing the data : August 2020

e) Deadline for presentation of data to the experts in the subject : Sept 2020

4. Deadline for submission of Dissertation: Oct 2020
To the University

	1st Quarter Date	2nd Quarter Date	3rd Quarter Date	Final Quarter Date
Review of progress of the research/dissertation project				
Review of collected data				
Review of analysed data				

6. Date of submission of the modified project
(modified as per suggestions made by the protocol review committee
to the Department of Research for IEC review

7. Signature (with date) of :

a) Applicant staff : 22/12/20

b) Head of the department : _____

c) Dean of the Faculty : _____

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

8. Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

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9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

1. Title of the Research Project:

   THE ADDITIVE EFFECT OF ORAL ADMINISTRATION LYCOPENE TO TAMSULOSIN AND FINASTERIDE IN A BENIGN PROSTATIC HYPERPLASIA RAT MODEL

2. Study rationale including novelty and application of the work in the context of National priorities of Medical Research

   Tamsulosin and finasteride have been the most popular medication but furthermore, these drugs induce undesirable side effects, including decreased libido, erectile dysfunction, dizziness, postural hypotension, asthenia, and occasional syncope prescribed for treating BPH. McConnell et al reported that only 64% of men receiving both therapies showed the reduced risk of clinical progression, defined as worsening of symptoms, acute urinary retention, incontinence and urinary tract infection Recently oral administration of Lycopene is used for prevention of BPH produced no clinical signs or adverse effects. The purpose of this investigation was to evaluate that addition of oral Lycopene to conventional tamsulosin plus finasteride treatment can augment pharmacological efficacy in a BPH rat model.

3. Objectives:

   1) investigated the benefit of the Lycopene combined with tamsulosin and finasteride, in a benign prostatic hyperplasia (BPH) rat model.

4. Summary of the proposed research (about 150 to 200 wards) indicating overall aim of the research, Methodology, expected outcome etc.

Aim:- To check benefit of the Lycopene combined with tamsulosin and finasteride, in a benign prostatic hyperplasia (BPH) rat model.

Methodology:- By bilateral orchiectomy under ketamine anesthesia Castration will be performed. A rat model of BPH will be established by daily intramuscular administration of testosterone propionate plus 17 alpha-estradiol for 8 weeks. For 4 weeks from week 6 to 9 post-surgery model rats will be administered combinations of Lycopene (5 mg/kg) , 0.01 mg/kg tamsulosin and 1 mg/kg finasteride once daily by oral gavage. Body and genitourinary organ weights will be recorded, serums will be assayed for hormone concentrations, and tissues were subjected to histopathology

expected outcome:- Lycopene addition to tamsulosin and finasteride may be beneficial for the treatment of BPH patients who do not respond to tamsulosin plus finasteride.

5. Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)

For patients with BPH, 2 main treatment options exist: alpha1-adrenergic receptor antagonists to reduce smooth muscle tone in the prostate and the bladder neck, and 5alpha-reductase inhibitors to reduce prostate size.[1] Tamsulosin and finasteride have been the most popular medication prescribed for treating BPH.[2] McConnell et al[3]reported that only 64% of men receiving both therapies showed the reduced risk of clinical progression, defined as worsening of symptoms, acute urinary retention, incontinence and urinary tract infection. Furthermore, these drugs induce undesirable side effects, including decreased libido, erectile dysfunction, dizziness, postural hypotension, asthenia, and occasional syncope.[4,5] Therefore, it is highly desirable to develop an □1-adrenergic antagonist or other medication that can selectively suppress the smooth muscle tone of lower urinary tract without vascular effects and decrease prostate volume without sexual dysfunction for the treatment of

urinary outlet obstruction in BPH.[6] Activation of large-conductance Ca^{2+}-activated K (BK) channels decreases vascular smooth musele tone under physiological conditions.[7] However, the major limitations ofclassical BK_{Ca} channel opener compounds are weak potency and insufficient selectivity.[8] Recently, Giormemis et al[16] found the new benzofuroindole derivative, LDD175, which showed remarkable potency to activate macroscopic Slo BK_{Ca} channels. The toxic effect of lycopene is not well known. The oral administration of lycopene produced no clinical signs or adverse effects.

The purpose of this investigation was to evaluate that addition of oral lycopene to conventional tamsulosin plus finasteride treatment can augment pharmacological efficacy in a BPH rat model.

Bibliography

1. Fine SR, Ginsberg P. Alpha-adrenergic receptor antagonists in older patients with benign prostatic hyperplasia: issues and potential com- plications. *J Am Osteopath Assoc*. 2008;108:333–337.
2. Lee E. Comparison of tamsulosin and finasteride for lower urinary tract symptoms associated with benign prostatic hyperplasia in Korean patients. *J Int Med Res*. 2002;30:584–590.
3. McConnell JD, Roehrborn CG, Bautista OM, Andriole GL Jr, Dixon CM, Kusek JW, et al. The long-term effect of doxazosin, finas- teride, and combination therapy on the clinical progression of benign prostatic hyperplasia. *N Engl J Med*. 2003;349:2387–2398.
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8. Sung HH, Choo SH, Han DH, et al. Effect of the novel BKCa channel opener LDD175 on the modulation of corporal smooth muscle tone. *J Sex Med*. 2015;12:29–38.

6. Detail research plan :

(Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other material to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

Introduction

Urinary urgency, slow stream, nocturia and increased daytime frequency various symptoms prostate enlargement.[9] Benign prostatic hyperplasia (BPH), also known as benign enlargement of the prostate, is a hormone and age-related disease characterized by histological changes in the prostate gland and variable enlargement of the prostate.[10]. Negative effect on the quality of life of BPH patients considerable due to these symptoms.[11,12] Although the pathogenesis of BPH is hormonal changes in an aging man.[13] Androgen stimulation, by dihydrotestosterone (DHT) that is a highly active metabolite of testosterone synthesized from the prostate 5□-reductase enzyme responsible for development and growth of normal prostate.[14,15] Treatment options exist: □1-adrenergic receptor antagonists and 5 □-reductase inhibitors to reduce smoothmuscle tone in the prostate and the bladder neck,and reduce prostate size simultaneously for patients with BPH.[16] Tamsulosin and finasteride have been the most popular medication but furthermore, these drugs induce undesirable side effects, including decreased libido, erectile dysfunction, dizziness, postural hypotension, asthenia, and occasional syncope prescribed for treating BPH.[17] McConnell et al[18] reported that only 64% of men receiving both therapies showed the reduced risk of clinical progression, defined as worsening of symptoms, acute urinary retention, incontinence and urinary tract infection..[19,20] Therefore, it is highly desirable to develop an alpha 1-adrenergic antagonist or other medication that can selectively suppress the smooth muscle tone of lower urinary tract without vascular effects and decrease prostate volume without sexual dysfunction for the treatment of urinary outlet

obstruction.[21,22] Recently oral administration of lycopene (5 mg/kg) is used for prevention of BPH produced no clinical signs or adverse effects.[22] The purpose of this investigation was to evaluate that addition of oral lycopene (5 mg/kg) to conventional tamsulosin plus finasteride treatment can augment pharmacological efficacy in a BPH rat model.

Materials and methods

Chemicals and reagents

Testosterone. Finasteride and 17 alpha-estradiol,Lycopene

Treatment of BPh rat model with Lycopene, tamsulosin and finasteride

A total of 42 male SD rats (250–300 g) Will be used for study. The 6 rats will be incised above the pelvic region on the ventral side and then sutured without cutting off the testicles as a control group (CON Vehicle). The testicles of 36 male SD rats will be removed under anesthesia with intraperitoneal ketamine (50 mg/kg;) and 2% xylazine hydrochloride (25 mg/kg;). The 6 castrated rats will be intramuscularly administered corn oil (CAS+Vehicle). A week after castration, 30 rats will be intramuscularly administered testosterone (3 mg/kg) plus 17alpha-estradiol (0.03 mg/kg) daily for 8 weeks to induce BPH. The 30 castrated BPH rats were then randomly will be assigned to 5 experimental groups: Positive control group (BPH+Vehicle), lycopene -treated (BP+T), tetradecanoic acid and tamsulosin-treated (BPH+TT), lycopene and finasteride-treated (BPH+TF) and lycopene tamsulosin and finasteride-treated (BPH+TTF). Treatment groups received the indicated combination of lycopene (5 mg/kg), tamsulosin (0.01 mg/kg) and/or finasteride (1 mg/kg) once daily for 4 weeks from week 6 to 9 post-surgery. The volumes of administration will be 6 mL/kg for oral administration and 0.7 mL/kg for intramuscular injection, respectively. The volumes ill e calculated based on recent weights.

Sample collection

After Dosing Blood will be obtained from the abdominal vein. Organs such as the prostate, bladder, penis and seminal vesicles will be surgically removed. Prostate volume will be measured and the prostatic index will be calculated as prostate volume/body weight 100. One piece of prostate tissue will be collected from the same position in every rat and fixed with 3.7% formalin for histopathological analyses.

Measurement of hormone levels in the serum

Serum levels of DHT, testosterone, will be measured using commercial kits. All protocols will be per- formed according to the manufacturer's instructions.

Histopathological examination

Fixed prostate tissues will be embedded in paraffin wax were cut into 4 cm thick sections and stained

with hematoxylin (Sigma- Aldrich) and eosin (Sigma-Aldrich). The sections will be mounted and cover-slipped using mounting medium and then examined under a microscope.

7. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

All facilities and equipments animal house will be used of KLE UNIVERSITY'S KLE college of Pharmacy, Hubali.

8. Budget of the project: Attachment

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1				
2				
3				
4				

Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1				
2				

9. Applicant's signatures with

References

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15 Carson C, Rittmaster R. The role of dihydrotestosterone in benign prostatic hyperplasia. *Urology*. 2003;61:2–7.

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18 McConnell JD, Roehrborn CG, Bautista OM, Andriole GL Jr, Dixon CM, Kusek JW, et al. The long-term effect of doxazosin, finas- teride, and combination therapy on the clinical progression of benign prostatic hyperplasia. *N Engl J Med*. 2003;349:2387–2398.

19 Akiyama K, Hora M, Tatemichi S, et al. KMD-3213, a uroselective and long-acting alpha(1a)-adrenoceptor antagonist, tested in a novel rat model. *J Pharmacol Exp Ther*. 1999;291:81–91.

20 Lee SW, Paick JS, Park HJ, et al. The efficacy and safety of tadalafil 5 mg once daily in Korean men with lower urinary tract symptoms suggestive of benign prostatic hyperplasia: an integrated analysis. *World J Men Health*. 2014;32:28–35.

21 Akiyama K, Hora M, Yamagishi R, Kitazawa M. Effects of KMD-3213, a uroselective alpha 1A-adrenoceptor antagonist, on the tilt-induced blood pressure response in normotensive rats. *Jpn J Pharmacol*. 2002; 90:131–137.

22 Sung HH, Choo SH, Han DH, et al. Effect of the novel BKCa channel opener LDD175 on the modulation of corporal smooth muscle tone. *J Sex Med*. 2015;12:29–38.

FORMAT FOR SUBMISSION OF ESTIMATED BUDGET FOR PROPOSED RESEARCH STUDY

Name and status of Applicant :- Mr.Anup A.Patil Assist. Professor faculty of pharmacy

Name of the Department: Department of Pharmacology

Name of the faculty:- Faculty of Pharmacy

Title of the research study: THE ADDITIVE EFFECT OF ORAL ADMINISTRATION LYCOPENE TO TAMSULOSIN AND FINASTERIDE IN A BENIGN PROSTATIC HYPERPLASIA RAT MODEL

IEC approval number of the project

Budget of the project:To be submitted as per the following format. Additional applicable details if any may also be provided

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1	NIL	NIL	NIL	NIL	NIL
	Total				

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1	Testosterone.	Once	10,000	10,000
2	Finasteride	Once	5,000	5,000
3	17 alpha-estradiol	Once	10,000	10,000

4	Lycopene	Once	10,000	10,000
	Total			35,000

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	Serum levels of DHT KIT	Once	10,000	10,000
2	testosterone	Once	10,000	10,000
3	Histopathological investigation		20,000	20,000
4	Experimental Expenses		50,000	50,000
5.	Travelling expenses		15,000	15,000
	Total			1,05,000

GRAND TOTAL (A+B+C) - Rs.35,000+105000=1,40,000/-

28.2.2020

Signature & date of investigator

Certified that the above budget is appropriate & recommended for sanction

Signature & date of Guide

Recommended for sanction

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

Signature & date of HOD

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

Annexure I - A

Collaborative research with Government College of Pharmacy, Karad

New project proposal

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SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

CHEMOPREVENTION OF CYPROTERONE ACETATE MNU AND TESTOSTERONE INDUCED PROSTATE CARCINOGENESIS BY COMBINATION CALCITROL AND LYCOPENE IN ADULT MALE ALBINO WISTAR RATS

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

2. Name and Designation of

a) Principle investigator : Mr.Anup Ashokrao Patil

b) Other investigators : Dr. Manoj charde
: Faculty members of Government college of Pharmacy

c) Department 1) Department of Pharmacology, KIMSDU'S Faculty of Pharmacy, Maharastra, Karad.
2) Department of Pharmacology, government college of Pharmacy Karad

3. Duration of Research/Dissertation Project: From: Feb 2020 To Oct 2020

a) Period which may be needed for collecting the data : 07months

b) Deadline for collecting the data : Sept 2020

c) Period that may be required for analysing the data : 02 months

d) Deadline for analysing the data : August 2020

e) Deadline for presentation of data to the experts in the subject : Sept 2020

4. Deadline for submission of Dissertation: Oct 2020
To the University

5.

	1st Quarter Date	2nd Quarter Date	3rd Quarter Date	Final Quarter Date
Review of progress of the research/dissertation project				
Review of collected data				
Review of analysed data				

6. Date of submission of the modified project
(Modified as per suggestions made by the protocol review committee
to the Department of Research for IEC review

7. Signature (with date) of :

a) Applicant staff : 28/7/2020

b) Head of the department : _____

c) Dean of the Faculty : _____

Dean
Krishna Institute of Pharmacy,
"Deemed To Be University"

8. Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

_____

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self explanatory manner to enable the Committee to assess the Project:

1. Title of the Research Project:

   CHEMOPREVENTION OF CYPROTERONE ACETATE MNU AND TESTOSTERONE INDUCED PROSTATE CARCINOGENESIS BY COMBINATION CALCITROL AND LYCOPENE IN ADULT MALE ALBINO WISTAR RATS

2. Study rationale including novelty and application of the work in the context of National priorities of Medical Research

   In India, prostate cancer ranks in its fifth incidence and 4th in mortality rate. The mechanisms leading to the initiation and progression of prostate cancer are largely unknown. One of the reasons that the progress of the work has been slow which is due to the lack of suitable animal models. Although there are a number of animal carcinogenesis models, they are based on single sex hormone, testosterone, or a combination of testosterone and estrogen. The combination of carcinogen (N-methyl-N-nitrosourea) and testoster- one has the advantage of inducing higher incidence of prostate carcinogenesis in Wistar-Unilever rat. Other report also suggested that MNU model was used in higher incidence of prostate cancer induction in Sprague-Dawley rat. This particular model has several advantages including the development of hyperplasia to dysplasia and prostatic intra epithelial neoplasia in short term treatments (4 months) in Wistar rats.

3. Objectives:

   1) Induction of Prostate Carcinogenesis by cyproterone acetate, MNU and Testosterone
   2) Evaluate effect of Calcitrol and Lycopene on Prostate Carcinogenesis model on male albino rats.

4. Summary of the proposed research (about 150 to 200 wards) indicating overall aim of the research, Methodology, expected outcome etc.

Background Calcitriol is a steroid hormone, inhibits the proliferation and promotes the differentiation of human prostate cancer cells. Calcitriol markedly inhibits the invasiveness of human prostate cancer cells *in vitro*. Lycopene is a plant nutrient with antioxidant properties. It's the pigment that gives red and pink fruits, such as tomatoes, watermelons and pink grapefruit, their characteristic color. Lycopene has been linked to health benefits ranging from heart health to protection against sunburns and certain types of cancersThese properties support the use of calcitriol as differentiation therapy in prostate cancer. Chemopreventive role of calcitriol on prostate cancer remains unknown. Prostatic intraepithelial neoplasia (PIN) is the most common precancerous state and represents the major target for chemoprevention of prostate cancer.

Methodology Prostate cancer will be induced in Wistar rats using cyproterone acetate MNU+T (N-Methyl nitroso urea + Testosterone). Combination Calcitriol (0.5mg/kg body weight) and lycopene (5 mg/kg) will be administered weekly thrice as *i.p.* injection simultaneously to MNU+T treated rats. The control group will be given vehicle alone. After 16 weeks of experimental period ventral and dorsolateral lobes will be removed for histopathological evaluation and serum prostatic acid phosphatase (PAcP) will be determined.

Expected outcome:- To check chemo protective effect of combination of calcitriol and lycopene on MNU+T induced prostate carcinogenesis, calcitriol and lycopene might be capable of inhibiting the initiation of prostate cancer. Hence, calcitriol and lycopene combination may have useful for the prevention of prostate cance.

5. Present knowledge and relevant bibliography relating to the problem (about 250 to 300 words)

In order to find out the status of malignant growth, serum prostatic acid phosphatase levels were measured in the control and experimental groups. The prostate is a major organ, which secretes acid phosphatase and the level of serum acid

phosphatase of prostatic origin increase markedly in human with extensive or metabolic carcinoma of the prostate[1] This enzyme is ex- cellent marker of androgen dependent function of rat prostatic tissue[2,3]. There was an increased activity of serum PAcP, observed in the MNU+T treated animals. Simultaneous administration of calcitriol treated rats shows decreased in serum PAcP activity. In malignant state, elevated serum levels of PAcP in prostate cancer could be due to an increase in cell number of the tumor mass, increased leakage of the PAcP from plasma mem- branes of carcinoma cells[4]. Thus, decreased activity of PAcP could explain involvement of calcitriol in the inhi- bition of prostate cancer initiation. The MNU+T induced pathological changes closely mimic the histological features found in human prostatic dysplasia, also termed PIN, which is considered to be a precursor of prostate cancer. In an animal model, a sin- gle dose of MNU (carcinogen) was used to induce prostate carcinogenesis[5]. In MNU+T treated animals, more number of hyperplastic, dysplastic and PIN lesion were observed, which showed the induction of prostate tumor, PIN is primarily accepted as a morphologically identifiable early stages in prostate cancer[6]. Calcitriol treated animals showed less PIN morphology than MNU+T treated animals. Tumor occurs preferentially at DLP than VP. Although, Christov *et al.*[7] indicated that PIN could be used for assessing the efficacy of chemopreventive agents on prostate carcinogenesis.

Bibliography

1) Zuke, M.C. and Coffey, D.S. (1994) The male accessory tissue: structure, Androgen action and physiology. In: Knobil E. and Neul J.D., editors, The physiology of Reproduction. New York: Raven Press Ltd.; p. 1436-1479.
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Montironi, R. and Sakr, W.A. (2000) Cellular and molecular pathology of prostate cancer precursors. Scand. J. Urol. Nephrol. Suppl. 205: 19-43.

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6. Detail research plan :

(Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other material to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

Materials and Methods

Chemicals

cyproterone acetate Calcitrol , NMU,Testosterone propionate, lycopene Tween 80

Animals

Healthy adult male albino rats of Wistar strain *Rattus norvegicus* weighing 180 - 200g

Induction of prostatic carcinogenesis using carcinogen and hormone

First, each rat will be given gavage administration of cyproterone acetate (50 mg/kg body weight) (Sigma Chemicals, USA) for 21 consecutive days. One day after the last dose of cyproterone acetate, rats will be given daily *i.p.* injection of 100 mg testosterone propionate/kg body weight in 0.3 ml propylene glycol for 3 days. One day after the testosterone propionate injection, all the rats will be given a single *i.v.* dose (50 mg/kg body weight) of Methyl Nitroso Urea (MNU) (dissolved in saline at 50 mg/ml), through the tail vein. One week after MNU administration, rats received daily *i.p.* injection of 2 mg/kg body weight testosterone propionate/kg body weight for 90 days.

Experimental design

A total of 40 rats will be taken for study and divided into four groups. Each group consists of 10 animals.

Group I

Rats will be given vehicle (propylene glycol) alone by intra peritoneal (*i.p.*) injection as

control.

Group II

Rats will be given calcitriol 0.5 µg/kg + Lycopene 5 mg/kg body weight as intra peritoneal (*i.p.*) injection as drug control.

Group III

Prostate cancer by using carcino- gen and hormone.

Group IV

Rats were induced prostate cancer and simultaneously treated with calcitriol 0.5 µg/kg+ Lycopene body weight given weekly thrice as *i.p.* (intra peritoneal) injection started one week before administration of cyproterone acetate and throughout the studies. The dose were selected based upon the previous studies by Carlos *et al.*[17]. We have taken at low dose level of 0.5 µg/kg body weight calcitriol + Lycopene 5 mg/kg body weight for the present investigation

Parameters need to Check

1) Body weight and prostatic weight
2) Serum prostatic acid phosphatase
3) Pathology

7. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

Facilities & equipment will be used of Government college pharmacy Karad.

8. Budget of the project: **Attachment.**

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1				
2				

FORMAT FOR SUBMISSION OF ESTIMATED BUDGET FOR PROPOSED RESEARCH STUDY

Name and status of Applicant :- Mr.Anup A.Patil Assist. Professor faculty of pharmacy

Name of the Department: Department of Pharmacolgy

Name of the faculty:- Faculty of Pharmacy

Title of the research study: CHEMOPREVENTION OF CYPROTERONE ACETATE MNU AND TESTOSTERONE INDUCED PROSTATE CARCINOGENESIS BY COMBINATION CALCITROL AND LYCOPENE IN ADULT MALE ALBINO WISTAR RATS

IEC approval number of the project

Budget of the project:To be submitted as per the following format. Additional applicable details if any may also be provided

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1	Development of Prostate cancer model	Once	Pharmacology	50,000/-	50,000/-
	Total				50,000

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1	Testosterone Propionate	1	10,000	10,000
2	MNU	1	20,000	20,000

3.	Other Chemicals Tween 80, Alcohol	1	10,000	10,000
4.	cyproterone acetate	1	10,000	10,000
	Total			50,000

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	Histopathology investigation	40	500	20,000
2	Other expenses			20,000
	Total			40,000

GRAND TOTAL (A+B+C) - Rs.50,000+50,000+40,000=1,40,000/-

28/2/2020

Signature & date of investigator

Certified that the above budget is appropriate & recommended for sanction

Signature:- Dr. Manoj Chorde.

Signature & date of Guide

Recommended for sanction

Signature & date of HOD

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

GOVT.COLLEGE OF PHARMACY
SAIDAPUR (VIDYANAGAR), KARAD – 415124.
Phone No. (O)- (02164) 271196, Fax – (02164) 271196
E-mail – geopk05@rediffmail.com

Ref. No. GCOPK/Project/2020/612-A

Date: 03/03/2020

To,
Dr. Rajendra C. Doijad,
Dean,
Faculty of Pharmacy, KIMSDU, Karad

Subject: Willingness to agree for utilization of research facilities and providing the technical support for the collaborative research project between Krishna Institute of Pharmacy, KIMSDU, Karad and Government College of Pharmacy, Karad…Regarding

Dear Sir,

With respect to the subject cited above, and in accordance with the MOU signed between Krishna Institute of Pharmacy, KIMSDU, Karad and Government College of Pharmacy, Karad, for the collaborative research, the research project entitled as

"CHEMOPREVENTION OF CYPROTERONE ACETATE MNU AND TESTOSTERONE INDUCED PROSTATE CARCINOGENESIS BY COMBINATION CALCITROL AND LYCOPENE IN ADULT MALE ALBINO WISTAR RATS

has been submitted to Krishna Institute of Medical Sciences Deemed to be University, Karad for approval of grant in aid.

The principal investigator (PI) is Mr.Anup A Patil (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Other investigator/Co-PI is Dr.Manoj Charde (HOD, Dept of pharmaceutical Chemistry ,Government College of Pharmacy, Karad), whose research proposal is forwarded herewith for approval to utilize research facilities and for technical support from our institute.

This is for your kind information and perusal.

Thanking You.

Dr. K. B. Burade
Principal,
Government College of Pharmacy,
Karad.

GOVT.COLLEGE OF PHARMACY
SAIDAPUR (VIDYANAGAR), KARAD – 415124.
Phone No. (O)- (02164) 271196, Fax – (02164) 271196
E-mail – gcopk05@rediffmail.com

Ref. No. GCOPK/Project/2020/610-A

Date: 03/03/2020

To,
Dr. Rajendra C. Doijad,
Dean,
Faculty of Pharmacy, KIMSDU, Karad

Subject: Willingness to agree for utilization of research facilities and providing the technical support for the collaborative research project between Krishna Institute of Pharmacy, KIMSDU, Karad and Government College of Pharmacy, Karad, ...Regarding

Dear Sir,

With respect to the subject cited above, and in accordance with the MOU signed between Krishna Institute of Pharmacy, KIMSDU, Karad and Government College of Pharmacy, Karad, for the collaborative research, the research project entitled as

"Improvement of anti-inflammatory activity by incorporation of befasitosterol into nanotubes: a potential application of natural bioactive fraction for inflammatory conditions" has been submitted to Krishna Institute of Medical Sciences Deemed to be University, Karad for approval of grant in aid.

The principal investigator (PI) is Mrs. Akshada A. Koparde (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Other investigator/Co-PI is Dr. Manoj Charde (HOD, Dept of pharmaceutical Chemistry ,Government College of Pharmacy, Karad), whose research proposal is forwarded herewith for approval to utilize research facilities and for technical support from our institute.

This is for your kind information and perusal.

Thanking You.

Dr. K. D. Burade
Principal,
Government College of Pharmacy,
Karad.

PROJECT

SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

Improvement of anti-inflammatory activity by incorporation of betasitosterol into nanotubes: a potential application of natural bioactive fraction for inflammatory conditions.

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

Novel drug delivery systems can greatly improve the performance of drugs in terms of efficacy, solubility, and bioavailability. Particularly, a nanoparticle system is one of the novel drug delivery systems that is emerging as a highly promising technology in enhancing drug delivery.

The irreversible destruction of the cartilage, tendon, and bone that comprise synovial joints is the hallmark of both rheumatoid arthritis (RA) and osteoarthritis (OA).

The anti-arthritic treatment failure may be due to multidrug resistance to standard therapies. Common people taking arthritis treatment showed unsuccessful results. Matrix metalloproteinases (MMPs) have long been considered excellent targets for osteoarthritis (OA) treatment. However, clinical utility of broad-spectrum MMP inhibitors developed for this purpose has been restricted by dose-limiting musculoskeletal side effects observed in humans. Therefore, in an attempt to find compounds that could have anti-arthritic effect, especially via MMP suppression with no toxicity, it would be desirable to investigate the effect of betasiterosterol nanotubes for arthritic treatment. Thus, the synthesis of betasiterosterol nanotubes solving the aforementioned problems is desired.

2. Name and Designation

a) Principle investigator : 1. **Mrs.Akshada Amit Koparde**
Department of Pharmaceutical Chemistry
Krishna Institute of Pharmacy, Karad

b) Other investigators : 1.**Dr. Manoj Charde**
HOD, Department of Pharmaceutical Chemistry,
Government college of Pharmacy, Karad

c) Department : Pharmacy

3. Name of the Sponsor : _____

4. Duration of Research/Dissertation Project (12 Months) March 2020 To March 2021

a) Period which may be needed for collecting the data :05 Months

b) Period that may be required for analysing the data : 07 Months

5. Date of submission of the project to the Department of Research for protocol review committee: 28th Feb 2020

6. Date of submission of the modified project (modified as per suggestions made by the protocol review committee to the Department of Research for IEC review

7. Signature (with date) of

a) Applicant staff : Koparde

b) Head of the department : _____

c) Dean of the Faculty : _____

Dean
Krishna Institute of Pharmacy
KIMS "Deemed To Be University" Karad

8 Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

---

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION-B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self mentioned manner to enable the Committee to assess the Project.

1. **Title of the Research Project:**

   Improvement of anti-inflammatory activity by incorporation of betasitosterol into nanotubes: a potential application of natural bioactive fraction for inflammatory conditions

2. **Objectives:**

   Objective of my research work is

   1. Synthesis of Betasitosterol nanotubes
   2. Characterisation of betasitosterol nanotubes and to evaluate the functional aspects of the synthesized particles by IR .
   3. Evaluation of betasitosterol nanotubes for anti inflammatory activity.

3. **Summary of the Proposed research (about 150 to 200 words) indicating overall aims of the research, importance of the objectives and application of the work in the context of national priorities of medical research.**

Inflammatory diseases include rheumatic disorders such as rheumatic fever, rheumatoid arthritis and osteoarthritis. The mechanisms of inflammation involve a series of events in which the metabolism of arachidonic acid plays an important role. Two cyclooxygenases (constitutive COX-1 and inducible COX-2) and lipoxygenase (5-LOX) enzymes are responsible for the transformation of arachidonic acid into the potent biologically active lipid mediators that are intimately involved in inflammation. The irreversible destruction of the cartilage, tendon, and bone that comprise synovial joints is the hallmark of both rheumatoid arthritis (RA) and osteoarthritis (OA). In both diseases, inflammatory cytokines such as interleukin-1 beta (IL-1 beta) and tumor necrosis factor-alpha (TNF-alpha) stimulate the production of matrix metalloproteinases (MMPs), enzymes that can degrade all components of the extracellular matrix. The collagenases, MMP-1 and MMP-13, have predominant roles in RA and OA because they are rate limiting in the process of

collagen degradation. MMP-1 is produced primarily by the synovial cells that line the joints.

The anti-arthritic treatment failure may be due to multidrug resistance to standard therapies, which can be either primary (preceding drug exposure) or acquired resistance (induced by treatment). As per the survey, arthritic therapies used by common people sometimes shown unsuccessful results. Therefore, in an attempt to find compounds that could have anti-arthritic effect, especially via MMP suppression with no toxicity, it would be desirable to investigate the effect of betasitosterol nanotubes for treatment of inflammatory condition.

4. **What is new in this research topic that has not been done by others and is already included in the text books?**

Use of novel technique to synthesize the natural molecule betasiterol which is triterpenoid as nanotubes to be used a antiarthric molecule which benefits the common man with good efficacy and no toxicity.

5. **What would be its application for betterment of patient care/community at large?**

Proposed mechanism will give scientific evidence for use of betasitosterol nanoparticles or nanotubes as anti-inflammatory agent for improved activity. Thus, it will have good application in community at large scale for their betterment of health and can treat the patient suffering from arthritis which is very common problem.

6. **Present knowledge and relevant bibliography relating to the problems(about 250 to 300 words)**

In pharmaceutical industry, Natural health care products continued to engage in playing an essential role in drug discovery programmes. Matrix metalloproteinases (MMPs) have long been considered excellent targets for osteoarthritis (OA) treatment. However, clinical utility of broad-spectrum MMP inhibitors developed for this purpose has been restricted by dose-limiting musculoskeletal side effects observed in humans[1]. Phytosterols, are one of the most important bioactive natural molecule which are reported to show positive effects on reducing total cholesterol,

low-density lipoprotein and accordingly arteriosclerosis cardiovascular diseases and in inflammatory conditions.Especially for the preparation and characterization of new nano-therapeutic formulations encapsulated with drug molecules useful in pharmaceutical industry[2]. This nanotechnology based drug delivery system can be used to overcome multi drug resistance and site specific action without affecting other organs and tissues. The methodology can be useful in improvement of quality of human health[3] .Rutin-modified silver nanoparticles as a chromogenic probe was used for the selective detection of Fe^{3+} in aqueous medium[4]. Therefore, in an attempt to find compounds that could have anti-arthritic effect. Thus, the synthesis of betasitosterol nanotubes solving the aforementioned problems is desired. This study paves a way to produce functional anti inflammatory molecule and the applicability of nanotechnology producing interesting opportunities for the pharmaceutical industry and promises great market potential.

Bibliography:

1. Synthesis of rutin nanotubes US97 US9713624B1
2. Aline C. Oliveira, Lucia H. Mascaro,Characterization of Carbon Nanotubes Paste Electrode and its Application as Rutin Sensor, Current Analytical Chemistry ,Volume 7 , Issue 2 , 2011
3. Selvaraj Kunjiappan; Anindita Chowdhury; Balasubramanian Somasundaram; Chiranjib Bhattacharjee; Selvam Periyasamy, Optimization, preparation and characterization of rutin-quercetin dual drug loaded keratin nanoparticles for biological applications ,Volume 3, Issue 4, Autumn 2016, Pages 253-267
4. Mayra S. Coutinho,a Eloah Latocheski,b Jannyely M. Neri,a Ana C. O. Neves,a Josiel B. Domingos, b L´ıvia N. Cavalcanti,a Luiz H. S. Gasparotto, a Edgar P. Moraes a and Fabr´ıcio G. Menezes, Rutin-modified silver nanoparticles as a chromogenic probe for the selective detection of Fe^{3+} in aqueous medium†, RSC Adv., 2019, 9, 30007-30011.
5. Sevda Bagherpour, Ainaz Alizadeh, Saeed Ghanbarzadeh, Maryam Mohammadi, Preparation and Characterization of Betasitosterol-Loaded Nanostructured Lipid Carriers for Butter Enrichment , Food Bioscience 20 August 2017

7. **Detail research plan :**

   (Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other materials to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

Introduction:

Inflammation is an orchestrated biological process, induced by microbial infection or tissue injury[6]. Inflammatory diseases include different types of rheumatic disorders such as rheumatic fever, rheumatoid arthritis, ankylosing spondylitis, polyarthritis nodosa, systemic lupus erythematosus and osteoarthritis[7]. Many herbal preparations are being prescribed widely for the treatment of inflammatory conditions inhibiting LOX and COX activity[8]. There is a need for research and developmental work in herbal medicine because apart from the social and economic benefits, it has become a persistent aspect of present day healthcare in developing countries[9].

MATERIALS AND METHODS

Method:

Synthesis of betasitosterol Nanotubes

About 100 mg of betasitosterol powder will be dissolved in a solvent mixture, which contained 10 ml methanol, 5 ml dimethyl sulfoxide (DMSO), and 1 ml of hydrochloric acid. Next, about 3 ml of the rutin solution was sprayed into about 30 ml of boiling water dropwise in about 10 minutes under ultrasonic conditions. After conducting ultrasonication for 20 minutes, the contents will be stirred for about 15 minutes, then centrifuged and dried to obtain a yellow powder comprising beta-sitosterol nanotubes[1] .

Characterisation:

1. transmission electron microscopy (TEM) images of beta-sitosterol nanotubes in different magnification scales. The nanotubes will appear needle-like in structure.

2. Beta-sitosterol nanotube particle size distribution, indicating that the average particle size of the resulting nanotubes should be about 100-200 nm[2].

Evaluation:

Anti inflammatory activity of Beta-sitosterol Nanotube: it will be evaluated on basis of paw volume ,body weight, radiographic analysis, histopathology and haematological parameters[10].

This proposal will illustrate a novel approach for a simple, low cost, effective, and non-toxic method of synthesis of betasitosterol nanoparticles or nanotubes and the utility of the resulting nano tubes in controlling inflammatory activity.

Data Analysis

A valid statistical method will be used for analyzing the data obtained from the research to reveal the level of their significance.

REFERENCES:

6. Garcı´a-Lafuente A., Guillamo´n E., Villares A., Rostagno M.A., Marti´nez J.A. Flavonoids as anti-inflammatory agents: implications in cancer and cardiovascular disease. Inflamm. Res. 2009;58:537–552.
7. Anilkumar M. Ethnomedicinal plants as anti-inflammatory and analgesic agents. Ethnomedicine: A Source of Complementary Therapeutics. 2010; 267-293
8. Malik J., Landa P., Kutil Z., Marsiks P., Kokoska L. In vitro COX-1, COX-2 and 5-LOX inhibitory activity of plant family Ranunculaceae. Planta Medica. 2011;77-141.
9. Igbe I., Ching F.P., Eromon A. Anti inflammatory activity of aqueous fruit pulp extract of Hunteria umbellata K. Schum in acute and chronic inflammation. Acta Pol. Pharm. 2010;67: 81- 85.
10. Paval Jaijesh, Srinivasan Keloth Kaitheri, Arunachalam Kumar, Sreejith Govindan, Ciraj Ali Mohammed, Raju Suresh Kumar, Sareesh Naduvil Narayanan, Prasad Alathady Maloor Anti-arthritic activity of the plant *Tinospora cordifolia* willd. Journal of Herbal Medicine and Toxicology, 5 (1) (2011): 11-16

11. **Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.**

1. Central instrumentation laboratory: UV visible spectrophotometer (Shimadzu 1900), In vitro dissolution test apparatus (Veego), IR Bruker GCOPK
2. Animal House facility approved by CPCEA
3. Centrifuge
4. Glassware's available in KIP

12. **Risk factor in details: Nil**
    a) Informed consent form in English and Marathi.
    b) State whether you are aware of the rules regarding Ethical Committee consideration of human trials and that you will be following them.

13. **Budget of the project:**

Name and Status of Applicant: Mrs. Akshada Amit Koparde (Assistant Professor, KIP, KIMSDU, Karad)

Name of the Department: Department of Pharmaceutical Chemistry

Name of the Faculty: Krishna Institute of Pharmacy, KIMSDU, Karad

Title of the Research Study:

Improvement of anti-inflammatory activity by incorporation of betasitosterol into nanotubes: a potential application of natural bioactive fraction for inflammatory conditions

IEC approval number of the Project:

Budget

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1.	synthesize betasitosterol nanotube	---	Pharmaceutical chemistry		
2.	Centrifuge	--	Pharmaceutics		
3.	Evaluation of betasitosterol	once	75,000/-	75,000/-	75,000/-

	nanotube for anti-inflammatory activity.				

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1	Ultrasonic Liquid Processors (Johnson plastosonic (p) ltd.)	01	1,00,000/-	1,00,000/-
2	Methanol	1 lit	1500/-	1500
3	Dimethyl sulfoxide (DMSO),	500ml	1000/-	1000
4	hydrochloric acid.	1 lit	500/-	500

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1.	Collection of beta-sitosterol powder.	once	10,000/-	10,000/-
2.	Characterization of the formulation using NMR, Particle size, zeta potential, TEM etc.	once	30000/-	30,000/-
3.	Histopathology	once	10,000/-	10,000/-

GRAND TOTAL (A+B+C) –75,000/- + 1,03,000/- +50,000/-=2,28,000/-

Certified that the above budget is appropriate & recommended for sanction

Recommended for sanction.

Signature of Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad
Dr.R.C.Doijad

KRISHNA INSTITUTE OF PHARMACY
KIMS "Deemed To Be University" Karad 415539

Signature of Applicant

Mrs.Akshada Amit Kopardo

Dr.Manoj Charde

New project proposal

(For Departmental/Staff proposals)

SECTION-A (GENERAL INFORMATION)

1. A. Title of the Research Project : (IN BLOCK LETTERS)

Green synthesis of silver nanoparticles using aqueous extract of *Eulophia ochreata* Lindl for anti-inflammatory activity.

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

'Green'environment friendly processes in chemistry and chemical technologies are becoming increasingly popular and are much needed as a result of worldwide problems associated with environmental concerns. It is been acknowledged that silver Nanoparticles have strong inhibitory and bactericidal effects along with the anti-fungal, anti-inflammatory.

2. Name and Designation

a) Principle investigator : **Mrs.Akshada Amit Koparde**
Department of Pharmaceutical Chemistry
Krishna Institute of Pharmacy, Karad

b) Other investigators : **Dr. Shankar Alegaon**
HOD, Department of Pharmaceutical Chemistry, KLE's College of Pharmacy , Belgavi

c) Department : Pharmacy

3. Name of the Sponsor :_____

4. Duration of Research/Dissertation Project (12 Months) March 2020 To March 2021

a) Period which may be needed for collecting the data :05 Months

b) Period that may be required for : 07 Months
analysing the data

5. Date of submission of the project to the
Department of Research for protocol review committee: 28th Feb 2020

6. Date of submission of the modified project
(modified as per suggestions made by the protocol review committee
to the Department of Research for IEC review

7. Signature (with date) of :

a) Applicant staff : Mopande

b) Head of the department : _____

c] Dean of the Faculty : _____

Dean
Krishna Institute of Pharmacy,
KIMS "Deemed To Be University" Karad

8. Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

d) Head of the department

Biochemistry : _____

Pathology : _____

Microbiology : _____

Any other : _____

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

SECTION - B

DETAILS OF THE RESEARCH PROJECT

Adequate information must be furnished in a brief but self mentioned manner to enable the Committee to assess the Project:

1. **Title of the Research Project:**

Green synthesis of silver nanoparticles using aqueous extract of herbal plants *for in-vitro* anti-inflammatory activity.

2. **Objectives:**

Objective of my research work is

1. Collection and aqueous extraction of *Eulophia ochreata* Lindl using maceration/ soxhlet technique.
2. Synthesis of silver Nanoparticles using green chemistry approach.
3. Characterisation of silver nanopaticles to evaluate the functional aspects of the synthesized particles
4. Evaluation of silver nanopaticles for in-vitro anti inflammatory activity.

3. **Summary of the Proposed research (about 150 to 200 words) indicating overall aims of the research, importance of the objectives and application of the work in the context of national priorities of medical research.**

The present study was aimed to develop the green synthesis of silver nanoparticles using aqueous extract of *Eulophia ochreata* Lindl for *in-vitro* anti-inflammatory activity. Idea behind providing this is, the greatest drawback in the available potent synthetic analgesic and anti-inflammatory drugs lies in their adverse effect, toxicity and reappearance of symptoms after discontinuation. Because of the significant side effect profiles of steroidal and NSAID medications, there is a greater interest in natural compounds, such as dietary supplement and herbal remedies, which have been used for centuries to reduce pain and inflammation. Many of these natural compounds also work by inhibiting the inflammatory pathways in a similar manner as NSAIDs. In addition to the COX pathway, many natural compounds act to inhibit nuclear factor-kB (NF-kB) inflammatory pathways. Herbal

medications are becoming increasingly popular because of their relatively few side effects. Nevertheless, there are problems associated with these dietary supplements, and their use requires knowledge of their biological action, clinical studies (both affirmative and negative), and potential interactions with other nutraceutical products and prescription medications.However desiging silver Nanoparticles will overcome the side effects and Synthesis will be to be efficient in terms of reaction time as well as stability of the synthesized nanoparticles which exclude external stabilizers/reducing agents. It will prove to be an eco-friendly, rapid green approach for the synthesis providing a cost effective and an efficient way for the synthesis of silver nanoparticles. Therefore, this reaction pathway will satisfy all the conditions of a 100% green chemical process.

4. **What is new in this research topic that has not been done by others and is already included in the text books?**

Silver nanoparticles (Ag-NPs) have diverted the attention of the scientific community and industrialist itself due to their wide range of applications in industry for the preparation of consumer products and highly accepted application in biomedical fields (especially their efficacy against microbes, anti-inflammatory effects, and wound healing ability). The multifunctional bio-applications of AgNPs; for example, as antibacterial, antifungal, antiviral, anti-inflammatory, anti-angiogenic, and anti-cancer agents, and the mechanism of the anti-cancer activity of AgNPs. Many challenges and future perspectives for silvernanoparticles.

5. **What would be its application for betterment of patient care/community at large?**

Eco-friendly method could be a competitive alternative to the conventional physical/chemical methods used for synthesis of silver nanoparticle and thus has a potential to use in biomedical applications and will play an important role in opto-electronics and medical devices in near future.

6. **Present knowledge and relevant bibliography relating to the problems(about 250 to 300 words)**

Greener syntheses of nanoparticles also provides advancement over other methods as they are simple, one step, cost-effective, environment friendly and relatively reproducible and often results in more stable materials "The Noble Silver Nanoparticles" are striving towards the edge-level utilities in every aspect of science and technology including the medical fields; thus cannot be neglected just because of their source of generation. Hence, it is becoming a responsibility to emphasise on an alternate as the synthetic route which is not only cost effective but should be environment friendly in parallel. Keeping in view of the aesthetic sense, the green syntheses are rendering themselves as key procedure and proving their potential at the top. The techniques for obtaining nanoparticles using naturally occurring reagents such as sugars, biodegradable polymers (chitosan, etc.), plant extracts, and microorganisms as reductants and capping agents could be considered attractive for nanotechnology. Greener syntheses of nanoparticles also provides advancement over other methods as they are simple, one step, cost-effective, environment friendly and relatively reproducible and often results in more stable materials. Although, the potential of higher plants as source for this purpose is still largely unexplored.

Very recently plant extract of marigold flower (Padalia et al., 2014), Ziziphora tenuior (Sadeghi & Gholamhoseinpoor, 2015), Erythrina indica (Sre et al., 2015), beet root (Bindhu & Umadevi, 2015), mangosteen (Veerasamy et al., 2011), Ocimum tenuiflorum (Peter Logeswari, Silambarasan, & Abraham, 2012), Spirogyra varians (Salari, Danafar, Dabaghi, & Ataei, 2014), Melia dubia (Ashokkumar et al., 2013), olive (Khalil, 2013), leaf extract of Acalypha indica with high antibacterial activities (Krishnaraj et al., 2010) are brimming in literature as a source for the synthesis of silver nanosilver particles as an alternative to the conventional methods.

Considering the vast potentiality of plants as sources this work aims to apply a biological green technique for the synthesis of silver nanoparticles as an alternative to conventional methods.

(Give here the design of study, indicating the total number of cases/samples to be studied, the mode of selection of subjects , equipment and other materials to be used, Questionnaire, the techniques to be employed for evaluating the results including statistical methods etc.

Introduction:

The 'green' environment friendly processes in chemistry and chemical technologies are becoming increasingly popular and are much needed as a result of worldwide problems associated with environmental concerns (Thuesombat, Hannongbua, Akasit, & Chadchawan, 2014). Silver is the one of the most commercialised nano-material with five hundred tons of silver nanoparticles production per year (Larue et al., 2014) and is estimated to increase in next few years.

Including its profound role in field of high sensitivity biomolecular detection, catalysis, biosensors and medicine; it is been acknowledged to have strong inhibitory and bactericidal

effects along with the anti-fungal, anti-inflammatory and anti-angiogenesis activities. A number of techniques are available for the syntheses of silver nanoparticles like ion sputtering, chemical reduction, sol gel, etc.

MATERIALS AND METHODS

A plant extract-mediated bioreduction involves mixing the aqueous extract with an aqueous solution of the appropriate metal salt. The synthesis of nanoparticle occurs at room temperature and completes within a few minutes.

Preparation of Extract:

About 20 gm of finely cut leaves were kept in a beaker containing 200 mL double distilled water and boiled for 30 min. The extract was cooled down and filtered with Whatman filter paper no.1 and extract was stored at 4 _C for further use.

Green synthesis of silver nanoparticles

Silver nitrate GR used as such (purchased from Merck, India). 100 mL, 1 mM solution of silver nitrate was prepared in an Erlenmeyer flask. Then 1, 2, 3, 4 and 5 mL of plant extract was added separately to 10 mL of silver nitrate solution keeping its concentration at 1 mM. Silver nanoparticles were also synthesized by varying concentration of AgNO3 (1 mMe5 mM) keeping extract concentration constant (1 mL). This setup was incubated in a dark chamber to minimize photo-activation of silver nitrate at room temperature. Reduction of Agþ to Ag0 was confirmed by the colour change of solution from colourless to brown. Its formation was also confirmed by using UV-Visible spectroscopy.

Characterization of synthesised silver Nanoparticles

By UV-visible spectrophotometer
FTIR
TEM(Transmission electron microscopy)
Assessment of *in-vitro* and *in-vivo* anti inflammatory activity

Results
Based on
Visual observation and UV-Vis spectroscopy
Particle size and distribution
FTIR analysis
TEM analysis
In-vitro analysis and *in-vivo* analysis of anti inflammatory activity

Conclusion:
It will prove to be an eco-friendly, rapid green approach for the synthesis providing a cost effective and an efficient way for the synthesis of silver nanoparticles. Therefore, this reaction pathway will try to satisfy all the conditions of a 100% green chemical process.

9. **Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.**

   Facilities available with Krishna Institute of Pharmacy and KLE's college of pharmacy, Belgavi which will be utilized for study.

10. **Risk factor in details:**
    a) Informed consent form in English and Marathi. No
    b) State whether you are aware of the rules regarding Ethical Committee consideration of human trials and that you will be following them.

11. **Budget of the project:**

Name and Status of Applicant: Mrs. Akshada Amit Koparde (Assistant Professor, KIP, KIMSDU, Karad)

Name of the Department: Department of Pharmaceutical Chemistry

Name of the Faculty: Krishna Institute of Pharmacy, KIMSDU, Karad

Title of the Research Study:

Budget

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Name of the department	Unit cost	Total cost
1.	Synthesis of Silvernanoparticles	---	Pharmaceutical chemistry	--	--

B. Details of the reagents/equipment/ planned to be purchased through the store

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1	Digital heating mental	02	10,000/-	10,000/-
2	Digital Vision Scientific Digital Hotplate Magnetic Stirrer W Temperature Probe & Support Stand	01	20,000/-	20,000/-
3	Silver nitrate GR from Merck, India	3gm	30,000/-	30,000/-
4	COX and LOX inhibitory Kit	01	50,000/-	50,000/-

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1.	Collection of plant powder	once	20,000/-	20,000/-
2.	Rotary evaporation	once	10,000/-	10,000/-
3.	Characterization of the formulation etc	once	50,000/-	50,000/-
4	Animal activity Carrageen induced anti-inflammatory activity	once	50,000/-	50,000/-

GRAND TOTAL (A+B+E)=0 = 1,10,000/- +1,30,000/- =3,40,000/-

Certified that the above budget is appropriate & recommended for sanction

Recommended for sanction

Signature of Guide

Dean
Krishna Institute of Pharmacy
Dr.R.C Daiyal

Signature of Applicant

Mrs.Akshada A.Koparde

Dr.Shankar Alegaon

KLE College of Pharmacy

A Constituent Unit of

KLE Academy of Higher Education and Research

[illegible]

Accredited 'A' Grade by NAAC [illegible] Cycle), Placed in Category 'A' by MHRD (GoI)

JNMC Campus, Nehru Nagar, Belagavi - 590 010, Karnataka, India

(Recognized by PCI, AICTE)

Phone [illegible] Fax [illegible] Web [illegible] E-mail [illegible]

Ref. No. KLE / COP | Date:

Date: 28/02/2020

To,
Dr. Rajendra C. Doijad,
Dean,
Faculty of Pharmacy, KIMSDU, Karad

Subject: Willingness to agree for utilization of research facilities and providing the technical support for the collaborative research project between Krishna Institute of Pharmacy, KIMSDU, Karad and KLE's College of Pharmacy, Belgavi.......Regarding

Dear Sir,

With respect to the subject cited above, Krishna Institute of Pharmacy, KIMSDU, Karad and KLE's College of Pharmacy, Belgavi, willingness to agree for the collaborative research, the research project entitled **"Green synthesis of silver nanoparticles using aqueous extract *of Eulophia ochreata Lindl for anti-inflammatory activity*"** has been submitted to Krishna Institute of Medical Sciences Deemed to be University, Karad for approval of grant in aid.

The principal investigator (PI) is Mrs.Akshada A.Koparde (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and other investigator Co-PI is Dr. Shankar Alegaon (HOD, Department of Pharmaceutical Chemistry, KLE College of Pharmacy, Belgavi) whose research proposal is forwarded herewith for approval to utilize research facilities and for technical support from our institute.

This is for your kind information and perusal.

Thanking You.

Yours Faithfully,

Dr. Shankar G. Alegaon
Professor & Head,
Department of Pharmaceutical Chemistry,
KLE College of Pharmacy, Belgavi

PROJECT

SECTION-A (GENERAL INFORMATION)

1. **(a) Title of the Research/Dissertation Project : (IN BLOCK LETTERS)**
PROCESS OPTIMIZATION OF ULTRASONIC ASSISTED EXTRACTION OF ANTIOXIDANTS FROM *Triticum aestivum* USING RESPONSE SURFACE METHODOLOGY AND COMPARATIVE EVALUATION OF CONVENTIONAL EXTRACTION AND ULTRASONIC ASSISTED EXTRACTION.

(b)What is new in this topic that others have not done and not already printed in the Journals or textbooks?

Optimization of ultrasonic assisted extraction of antioxidant compounds from *Triticum aestivum* and comparative evaluation of conventional extraction technique with Ultrasonic assisted extraction has not been carried out.

2. **Name of The Principal Investigator:** Ms. Jotsna Mohanlal Gandhi
Designation: Asst. Prof. Department of Pharmacognosy, KIMSDTU'S Krishna Institute of Pharmacy, Karad, Maharashtra.

3. **Name of the Co-Principal Investigator:** Dr.H.N.Sholapur
Designation: Asst. Prof. Department of Pharmacognosy KLE'S College of Pharmacy, Huballi Karnataka.

Month and date of registration:

Name of the sponsor: Krishna Institute of Medical Sciences Deemed to be University, Karad

4. **Duration of Research/Dissertation Project:** 12 months

a) Period which may be needed for collecting the data : 03 months

b) Extraction of antioxidants fromTriticum : 04 months

c) Evaluation of antioxidant activity: 02 months

e) Period for compilation of data: 03 months

5. Date of submission of project to The Department of Research for Protocol Review committee:

6. Date of submission of modified project (Modified as per suggestions made by the protocol review committee to the Department of Research for IEC review)

7. Signature (with date):

a) Applicant staff: i) (Miss. J.M. Gandhi) 28/6/2016 ii) Dr H N Shekhar 28/06/16

b) Head of the Department: i) ii) P. Nanjundaswamy

c) Dean/ Principal of The Faculty: i) ii) KLES College of Pharmacy

8. Signatures of other Departmental Heads where a part of research work is planned (mention not applicable, if so)

Head of The Department	
Biochemistry	-NA-
Pathology	-NA-
Microbiology	-NA-
Any other	-NA-

9. IEC Review:

Remarks of the IEC : Approved/ Not approved

10. Signature of the IEC Member Secretary:

11. Signature of the IEC Chairman

SECTION - B
DETAILS OF THE RESEARCH PROJECT

1. **Title of the research project:** PROCESSOPTIMIZATION OF ULTRASONIC ASSISTED EXTRACTION OF ANTIOXIDANTS FROM *Triticum aestivum* USING RESPONSE SURFACE METHODOLOGY AND COMPARATIVE EVALUATION OF CONVENTIONAL EXTRACTION AND ULTRASONIC ASSISTED EXTRACTION

2. **Objectives:**
   The present investigation aims at:
   1. Comparative evaluation of conventional extraction and ultrasonic assisted Extraction.
   2. Optimization of ultrasonic assisted extraction (UAE) based on factors like liquid-solid ratio, time and temperature of extraction (Using probe sonicator).
   3. Process optimization using RSM on the basis of the single factor method.
   4. Preparation of extracts of *Triticum aestivum*.
   5. Evaluation of extracts by DPPH radical scavenging capacity of antioxidants as the index.

3. **Summary of the Proposed research (about 150 to 200 wards) indicating overall aims of the research, importance of the objectives and application of the work in the context of national priorities of medical research.**

Living cells generate free radicals and other reactive oxygen species due to physiological and biochemical processes. Free radicals can cause oxidative damage to lipids, proteins and DNA, leading to many chronic diseases, such as cancer, diabetes, aging, and other degenerative diseases in humans. Due to lack of effective therapies for these chronic diseases, the chemical compounds showing antioxidant activity are of importance.

The aim of the present study is to compare extraction process (maceration vs ultrasonic assisted extraction) and to optimize the extraction of these antioxidants using ultrasonic assisted extraction by response surface methodology thereby enabling protection against oxidative damage. The study is mainly designed to screen solvent extracts of the leaves of wheatgrass (*Triticum aestivum*) to show the potent antioxidant activity in order to find possible sources for novel antioxidants in food and pharmaceutical supplements. The extractsobtained by conventional maceration process and ultrasonic assisted extraction will be screened for the antioxidants. The antioxidant activity will be evaluated by the 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging activity.

4. **What is new in this research topic that has not been done by others and is already included in the text books?**

Methods of extraction like maceration have been employed for extraction of antioxidants from the leaf blades of *Triticum aestivum*. The current study shall focus on evaluating the antioxidant potential of extracts of *Triticum aestivum* leaves. Optimization of the ultrasound assisted extraction will be done using response surface methodology. The antioxidant potential of the extracts will be evaluated using DPPH assay.Comparative evaluation of conventional extraction and ultrasonic assisted extraction will be done.

5. **What would be its application for betterment of patient care/community at large?**

Many different techniques are employed for the extraction of antioxidants from plants. The conventional extraction methods, like reflux extraction and maceration extraction have many drawbacks, including the need for long extraction times and the need for relatively large quantities of solvent. In addition, most active ingredients of plants are found in their cells, making it difficult for mechanical crushers to break cells for extraction, and chemical crushing methods may damage the active molecules and inactivate the extract. Compared with conventional and other modern extraction techniques, ultrasonic assisted extraction (UAE) is proposed as an alternative procedure for sample pretreatment and as a greener methodology that allows for a high reproducibility in shorter time, simplified manipulation, significant reduction in organic solvent consumption and temperature, and lower energy input. Especially, UAE has great advantages in the extraction of polar compounds using water as solvent.

In the current study, comparative evaluation of maceration technique with ultrasonic extraction technique will be done for the leaves of *Triticum aestivum*, using methanol as solvent.

This shall enable cost-effective extraction of many pharmacologically active compounds from herbal drugs with better efficiency.

6. **Present knowledge and relevant bibliography relating to the problems(about 250 to 300 words)**

1) SeyedHosseinZendehbad, Mohammad JavadMehran, SudhakarMalla, Studied Flavonoids and Phenolic Content in Wheat Grass Plant (TriticumAestivum) and their antioxidant potential using solvent extraction technique.Asian J Pharm Clin Res, Vol 7, Issue 4, 2014, 184-187.

2) LiubovSkrypnikand Anastasia NovikovaperformedResponse Surface Modeling and Optimization ofPolyphenols Extraction from Apple Pomace Based onNonionicEmulsifiers,Agronomy 2020, 10, 92 ,1-18.

3) AlevYükselAydar, Utilization of Response Surface Methodology in Optimization of Extraction of Plant Materials, http://dx.doi.org/10.5772/intechopen.73690

4) Feilong Sun, Yanu Yan, Long Lin carried out the evaluation of antioxidant properties and stability of polyphenols from Spinacia oleracea. Journal of Biotech Research 2018; 9: 8-13

5) Nelly Medina-Torres , Teresa Ayora-Talavera, Hugo Espinosa-Andrews, Angeles Sánchez-Contreras and Neith Pacheco reviewed Ultrasound Assisted Extraction for the Recovery of Phenolic Compounds from Vegetable Sources,Agronomy 2017, 7, 47, 1-19.

6) AmmarAltemimi, David A. Lightfoot, Mary Kinseland Dennis G. Watson usedResponse Surface Methodology for the Optimizationof Ultrasound Assisted Extraction of Lutein and β-Carotenefrom Spinach,Molecules 2015, 20,6611-6625; doi:10.3390/molecules200466

7. **Detail research plan** :
   1) **Review of literature**: An in detail review of literature pertaining to the topic shall be carried out.
   2) **Procurement of raw material & authentication:** The raw material will be procured and authenticated by a botanist.
   3) **Ultrasonic extraction:** Ultrasonic extraction of *Triticum aestivum* will be carried out using probe sonicator. All ultrasonic treatments will be conducted in a systematic order from lowest to highest temperature. Within each temperature setting, power settings will be adjusted from low to high.
   4) **Maceration:** Maceration of *Triticum aestivum* leaves will be done with methanol using rotary shaker.
   5) **Phytochemical screening**: Phytochemical tests will be performed to detect the presence of phytoconstituents and determination of antioxidants from respective extracts of *Triticumaestivum*.
   6) **Assay for determination of total antioxidant potency of the extract:** The antioxidant potential of the extract will be determined using DPPH assay for the respective extracts of *Triticum aestivum*.
   7) **Comparative evaluation of extracts obtained using both the methods will be done.**
   8) **Statistical analysis:** Statistical analysis will be carried out using Response Surface Methodology.

      Response surface methodology (RSM) is a kind of optimization method which serves as an accurate, effective, and simple tool for optimizing the experimental process and is widely used in agriculture, biology, food, chemistry and other fields. No literature is available on optimization of the antioxidant extraction process from *Triticum aestivum* using RSM. This present study focuses on UAE of antioxidants in*Triticum aestivum*; three influencing factors in the aqueous extraction of antioxidants such as liquid-solid ratio, period of UAE and extraction temperature will be investigated. Taking DPPH radical scavenging capacity of antioxidants as the index, the extraction processing will be optimized using RSM on the basis of the single factor method.

8. Facilities & equipment, etc. available in the department concerned and/or in the institution for the proposed investigation.

Sr. No	Name of equipments
1	Single pan electronic balance
2	Hot air oven
3	UV spectrophotometer
4	Incubator
5	Probe sonicator {AVAILABLE WITH KLE'S C.O.P. HUBALLI}

FORMAT FOR SUBMISSION OF ESTIMATED BUDGET FOR PROPOSED RESEARCH STUDY

Name and status of Applicant: Miss. Jotsna M Gandhi, Asst. Professor in Pharmacognosy

Name of the Department: Pharmacognosy

Name of the faculty: Pharmacy

1. Title of the research study: PROCESSOPTIMIZATION OF ULTRASONIC ASSISTED EXTRACTION OF ANTIOXIDANTS FROM *TRITICUM AESTIVUM* USING RESPONSE SURFACE METHODOLOGY AND COMPARATIVE EVALUATION OF CONVENTIONAL EXTRACTION AND ULTRASONIC ASSISTED EXTRACTION.

IEC approval number of the project

A. Details of the investigations/procedures planned in house

Sr. No.	Name of investigation / Procedure	Number to be performed	Name of the department	Unit cost	Total cost
	Planting the whole wheat for leaves and harvesting the young leaves		Pharmacognosy	Rs. 50/- per kg	500/-

B. Details of the reagents/equipment/ planned to be purchased through the store:

Sr. No.	Name of reagent /Kit/ Equipment	Number to be purchased	Unit cost	Total cost
1.	Rotary shaker : Specifications : Automation Type: Semi-Automatic Features: On/Off Timer with Buzzer Usage/Application: Chemical Lab Brand: Hi Tech Capacity: 64 Flask of 250/500 ml Operating Voltage: 230 V, 50 Hz	01	28000/-	28000/-
2	Ethanol	5 litres	320/-	1600/-
3	Methanol	5 litres	500/-	2500/-
4	FolinCiocalteu reagent	100 ml	400/-	400/-
5	2,20- diphenyl-1-picrylhydrazyl	250 mg	5500/-	5500/-

6	Micropipette (Tarson) 200-1000 µl	01	5500/	5500/-
7	Micropipette (Tarson)10-100 µl	01	5500/	5500/-
8	Micropipette tips 200-1000 µl	500 nos	1500/-(pack of 500)	1500/-
9	Micropipette tips10-100 µl	500 nos	2000/- (pack of 500)	2000/-
10	Eppendorf Tubes 1.5 ml	500 nos	3000/-(pack of 500)	3000/-
11	Sonication tubes 1.5 ml	500 nos	5000/- (pack of 100)	25000/-
12	Contingency			2000/-
	TOTAL			82500 /-

C. Details of the investigations/procedures planned to be outsourced

Sr. No.	Name of investigation / Procedure	Number to be performed	Unit cost	Total cost
1	LC MS/MS02	02	2500/sample	5000=00

GRAND TOTAL (A+B+C) =Rs. 500/- + Rs.82500 /-+ 5000/- = 88000/-

Applicant's signature: i) (Miss. J. M. Gandhi) 28/2/2020 ii) (Dr H.N Shaikhpur) 28/2/20

Certified that the above budget is appropriate & recommended for sanction

Recommended for sanction

Signature of Head of the Department
(KLE'S College of Pharmacy, Huballi)
HOD, Pharmaceutics & Pharmaceutical Technology,
KLES College of Pharmacy,
HUBLI-580 031.

Signature of Head of the Department
(KIMSDTU'S, Krishna Institute of Pharmacy, Karad)

KLE COLLEGE OF PHARMACY

Vidyanagar, HUBBALLI-580 031, Karnataka
A constituent unit of
KLE Academy of Higher Education & Research, Belagavi
(Deemed-to-be-University)

✆: 0836-2373174, ✆: 0836-2371654, 2371048, @: http://www.klescoph.org, ✉: principal.klescoph@gmail.com
✉: principalhbl@kledeemeduniversity.edu.in

Ref. No.: KLESCOP/Res/2020-21/653 Date: 28/02/2020

To,

Prof. (Dr.) Rajendra C. Doijad,
Dean Faculty of Pharmacy,
KIMSDU'S Krishna Institute of Pharmacy,
KARAD.

Sub: Willingness to agree for utilization of research facilities and providing the technical support for the collaborative research project between Krishna Institute of Pharmacy, KIMSDU, Karad and KLE College of Pharmacy, Hubballi ..... reg.

****

Dear Sir,

With respect to the subject cited above, and in accordance with the MOU signed between Krishna Institute of Pharmacy, KIMSDU, Karad and College of Pharmacy, KLE College of Pharmacy, Hubballi, for the collaborative research, the research project titled, "Process optimization of ultrasonic assisted extraction of antioxidants from *Triticum aestivum* using response surface methodology and comparative evaluation of conventional extraction and ultrasonic assisted extraction", has been submitted to Krishna Institute of Medical Sciences Deemed to be University, Karad for approval of grant in aid.

The principal investigator (PI) is Miss. Jotsna M Gandhi (Assistant Professor, Krishna Institute of Pharmacy, KIMSDU, Karad) and Co-Principal Investigator is Dr. Hasanpasha.N. Sholapur (Assistant Professor, KLE'S College of Pharmacy, Hubballi), whose research proposal is forwarded herewith for approval to utilize research facilities and for technical support from our institute.

This is for your kind information and perusal.

Thanking You.

Yours Faithfully,

KLES COLLEGE OF PHARMACY HUBBALLI 580031

Dr. V.G. Kamkhandi
Principal
KLE College of Pharmacy
Hubballi

INTERNATIONAL JOURNAL OF PHARMACEUTICAL RESEARCH

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July - September 9[3] 2017

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Manuscript Status...

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Article Detail

"Anemia-Tribe-specific Study and it's Sociodemographic Association in Six Dominant Tribal Adolescents of Maharashtra, India."

Author: PRAKASH V. PAWAR, SUJATA R. KANETKAR, MADHAV G. DEO, SATISH V. KAKADE

Abstract: Background and Objective: Anemia has always been a major health burden in underdeveloped countries. Despite several nutritional anemia studies, their tribe-specific information is inadequate. The foremost objective of this study is to generate the tribe-specific information on anemia and its association with sociodemographic characters and contribution of iron metabolism. Method: A cross-sectional study was conducted on 1135 healthy adolescents (Girls 549) from six leading Scheduled Tribes (STs) of Maharashtra, India. Complete Blood Count (CBC) and serum iron with total iron-binding capacity (TIBC) was calculated using fasting venous blood collected in EDTA and Non-EDTA tubes respectively. Contribution of iron deficiency in etiology of anemia was studied by monitoring two months of oral iron tablet supplementation. Results: It was observed that 41.3% of tribal adolescents were underweight. Prevalence of anemia was observed 41.5% in both tribal adolescents with an average Hb 11.1 ± 1.3g/dl. 21.3% girls & 37.7% boys had mild anemia; however moderate anemia was 17.4% in adolescent girls. Microcytic hypochromic anemia was observed in a large number of tribal adolescents. Hb levels improved significantly after the iron supplementation with 35% recovery with a significant reduction in TIBC along and increase in the ferritin, but without microcytosis (MCV<80fl) improvement. Interpretation and Conclusion: All tribal adolescents in this study were grossly underweight and anemia was a substantial health problem with a significant association with sociodemographic variables in tribal adolescents. Iron therapy observations suggested that iron deficiency superimposed on the background of a-thalassaemia in tribal's. This observation should be useful to a physician practising in tribal areas for the treatment of hemoglobinopathies.

Keyword: Tribal Adolescent's, Anemia, Iron Deficiency, Scheduled tribes, Maharashtra, India.

DOI: https://doi.org/10.31838/ijpr/2020.SP1.084

Download: Request For Article

Lancet. 2020 Jun 6;395(10239):1779-1801. doi: 10.1016/S0140-6736(20)30114-8. Epub 2020 May 6.

Mapping geographical inequalities in childhood diarrhoeal morbidity and mortality in low-income and middle-income countries, 2000-17: analysis for the Global Burden of Disease Study 2017

Local Burden of Disease Diarrhoea Collaborators

Collaborators

PMID: 32513411 PMCID: PMC7314599 DOI: 10.1016/S0140-6736(20)30114-8
Free PMC article

Erratum in

Department of Error.
[No authors listed]
Lancet. 2020 Jul 25;396(10246):238. doi: 10.1016/S0140-6736(20)31569-5.
PMID: 32711798 No abstract available.

Department of Error.
[No authors listed]
Lancet. 2020 Jun 6;395(10239):1762. doi: 10.1016/S0140-6736(20)31248-4. Epub 2020 Jun 4.
PMID: 32930098 No abstract available.

Abstract

Background: Across low-income and middle-income countries (LMICs), one in ten deaths in children younger than 5 years is attributable to diarrhoea. The substantial between-country variation in both diarrhoea incidence and mortality is attributable to interventions that protect children, prevent infection, and treat disease. Identifying subnational regions with the highest burden and mapping associated risk factors can aid in reducing preventable childhood diarrhoea.

Methods: We used Bayesian model-based geostatistics and a geolocated dataset comprising 15 072 746 children younger than 5 years from 466 surveys in 94 LMICs, in combination with findings of the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2017, to estimate posterior distributions of diarrhoea prevalence, incidence, and mortality from 2000 to 2017. From these data, we estimated the burden of diarrhoea at varying subnational levels (termed units) by spatially

Review Nanomaterials (Basel). 2020 Jun 25;10(6):1234. doi: 10.3390/nano10061234.

Nanoparticle-Based Therapeutic Approach for Diabetic Wound Healing

Hariharan Ezhilarasu [1], Dinesh Vishalli [2], S Thameem Dheen [1], Boon-Huat Bay [1], Dinesh Kumar Srinivasan [1]

Affiliations

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1 Department of Anatomy, Yong Loo Lin School of Medicine, National University of Singapore, Singapore 117594, Singapore.
2 Faculty of Medical Sciences, Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra 415539, India.

PMID: 32630377 PMCID: PMC7353122 DOI: 10.3390/nano10061234
Free PMC article

Abstract

Diabetes mellitus (DM) is a common endocrine disease characterized by a state of hyperglycemia (higher level of glucose in the blood than usual). DM and its complications can lead to diabetic foot ulcer (DFU). DFU is associated with impaired wound healing, due to inappropriate cellular and cytokines response, infection, poor vascularization, and neuropathy. Effective therapeutic strategies for the management of impaired wound could be attained through a better insight of molecular mechanism and pathophysiology of diabetic wound healing. Nanotherapeutics-based agents engineered within 1-100 nm levels, which include nanoparticles and nanoscaffolds, are recent promising treatment strategies for accelerating diabetic wound healing. Nanoparticles are smaller in size and have high surface area to volume ratio that increases the likelihood of biological interaction and penetration at wound site. They are ideal for topical delivery of drugs in a sustained manner, eliciting cell-to-cell interactions, cell proliferation, vascularization, cell signaling, and elaboration of biomolecules necessary for effective wound healing. Furthermore, nanoparticles have the ability to deliver one or more therapeutic drug molecules, such as growth factors, nucleic acids, antibiotics, and antioxidants, which can be released in a sustained manner within the target tissue. This review focuses on recent approaches in the development of nanoparticle-based therapeutics for enhancing diabetic wound healing.

Randomized Controlled Trial Medicine (Baltimore). 2020 Apr;99(16):e19723.
doi: 10.1097/MD.0000000000019723.

Efficacy and safety of combination of curcuminoid complex and diclofenac versus diclofenac in knee osteoarthritis: A randomized trial

Dhaneshwar Shep [1], Chitra Khanwelkar [1], Prakashchandra Gade [2], Satyanand Karad [3]

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3 Department of Orthopedics, City Care Accident Hospital, Parli Vaijnath, Beed, Maharashtra, India.

PMID: 32311961 PMCID: PMC7220260 DOI: 10.1097/MD.0000000000019723
Free PMC article

Abstract

Background: To compare the efficacy and safety of combination of curcuminoid complex and diclofenac vs diclofenac alone in the treatment of knee osteoarthritis (OA).

Methods: In this randomized trial, 140 patients of knee OA received either curcuminoid complex 500 mg (BCM-95) with diclofenac 50 mg 2 times daily or diclofenac 50 mg alone 2 times daily for 28 days. Patients were assessed at baseline, day 14 and day 28. Primary efficacy measures were Knee injury and OA outcome score (KOOS) subscale at day 14 and day 28. Anti-ulcer effect and patient-physician's global assessment of therapy at day 28 were included as secondary endpoints. Safety after treatment was evaluated by recording adverse events and laboratory investigations.

Results: Both treatment groups showed improvement in primary endpoints at each evaluation visit. Patients receiving curcuminoid complex plus diclofenac showed significantly superior improvement in KOOS subscales, viz. pain and quality of life at each study visit ($P < .001$) when compared to diclofenac. Less number of patients required rescue analgesics in curcuminoid complex plus diclofenac group (3%) compared to diclofenac group (17%). The number of patients who required histamine 2 (H2) blockers was significantly less in curcuminoid complex plus diclofenac group

Drug Deliv Transl Res. 2020 Aug;10(4):1002-1018. doi: 10.1007/s13346-020-00776-7.

Design and development of polymethylmethacrylate-grafted gellan gum (PMMA-g-GG)-based pH-sensitive novel drug delivery system for antidiabetic therapy

Rohit R Bhosale [1], Hosahalli V Gangadharappa [2], Riyaz Ali M Osmani [3], Devegowda V Gowda [2]

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3 Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Mumbai, Maharashtra, 400076, India. riyazosmani@gmail.com.

PMID: 32441013 DOI: 10.1007/s13346-020-00776-7

Abstract

The objective of the present study was to develop a pH-sensitive drug delivery system by using polymethylmethacrylate-grafted gellan gum (PMMA-g-GG). PMMA-g-GG was synthesized by free radical polymerization reaction by using redox initiator ceric ammonium nitrate (CAN), and a series of graft copolymers were prepared with varying concentrations of methylmethacrylate (MMA) and CAN. Grafting parameters such as the percentage and efficiency of grafting were calculated, and the effect of monomer as well as initiator concentration was studied on the grafting yield. Optimization was done by one optimal response surface methodology. The batch with a better percentage grafting and grafting efficiency was selected and characterized by elemental analysis (CHN), FT-IR, DSC, PXRD, ^{1}H-NMR, and SEM. Furthermore, acute oral toxicity study and histopathological analysis suggested non-toxic and biocompatible nature of the grafted gum. Metformin hydrochloride pellets were prepared using PMMA-g-GG, characterized in detail, and assessed for biocompatibility and efficacy. PMMA-g-GG-based formulation (M4) exhibited a pH-sensitive as well as sustained release of the drug over the period of 12 h and the release profile followed Peppas model. In vivo efficacy studies indicated a promising antidiabetic potential of the prepared formulation. Thus, PMMA-g-GG-based formulations can be implicated as novel drug delivery systems for facilitated antidiabetic therapy in the near future. Graphical abstract.

J Family Med Prim Care. 2020 May 31;9(5):2244-2247. doi: 10.4103/jfmpc.jfmpc_181_20. eCollection 2020 May.

Awareness and knowledge of tobacco associated risk of development of oral cancer and oral potentially malignant disorders among patients visiting a dental college

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3 Department of Oral Pathology and Microbiology, Sharad Pawar Dental College, Datta Meghe Institute of Medical Sciences, Deemed to be University, Sawngi (M) Wardha, Maharashtra, India.

PMID: 32754481 PMCID: PMC7380825 DOI: 10.4103/jfmpc.jfmpc_181_20
Free PMC article

Abstract

Introduction: Cancer is considered as a serious health problem in public with an increasing number of cancer patients reported every year hence public health awareness/knowledge on oral cancers oral potentially malignant disorders (OPMDs) and their risk factors is crucial for prevention and early detection of OPMD and it is important to prevent transformation of oral cancer.

Materials and methods: A cross-sectional survey with an interviewer-administered questionnaire was conducted. The questionnaire consists of relevant questions to ascertain sociodemographic information, awareness, and knowledge of Oral cancer and OPMDs, and their associated risk factors, and participants exposure to risk factors. Subjects above the age of 20 years (n = 200) were randomly selected, and the questionnaires were administered by the interviewer while they were waiting for treatment.

Results: Results showed lack of awareness for OPMDs based on the evaluation of the questionnaires for sociodemographic data.

Somade et al., IJPSR, 2020; Vol. 11(5): 2448-2450. E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2020), Volume 11, Issue 5 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

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EVALUATION OF *IN-VITRO* ANTI-BACTERIAL AND CYTOTOXIC ACTIVITY OF *LEEA MACROPHYLLA*

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Department of Pharmacology [2], Rajarambapu College of Pharmacy, Kasegaon - 415404, Maharashtra, India.
Department of Zoology [3], Yashwantrao Chavan College of Science Karad - 415124, Maharashtra, India.

Keywords:

Leea macrophylla, Antibacterial activity, Brine shrimp lethality assay

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ABSTRACT: Studies have confirmed the medicinal potential of the *Leea macrophylla* mentioned in traditional medicine. While the effects of the *Leea macrophylla* extract on some bacteria and Brine shrimp lethality using their different concentrations has not been previously explored. The present study shows that the standardized aqueous and ethanolic extract of *Leea macrophylla* exhibited antibacterial and cytotoxic activity. The findings of the present work provide promise for the development of new molecules of treat microbial infections and cancer.

INTRODUCTION: *Leea macrophylla* (Roxb.) (Family: Leeaceae) is a herb or herbaceous shrub with a very big size leaf like an elephant-ear. The plant parts of Leea macrophylla are used by tribal people in the cold, cough, headache, tetanus, *etc.* [1, 2] It also has ethnobotanical uses in goiter, gastric tumor, lipoma body pain and rheumatic pain [2-5]. Although *Leea macrophylla*. *Leea macrophylla* has various ethnopharmacological uses; the plant have not been investigated for antimicrobial and cytotoxic activity against prominent gram-positive and gram-negative human pathogenic bacterial strains. Besides, cytotoxic activity screening of the extracts was also carried out with view to assess the presence of antitumor activity of different extracts.

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.11(5).2448-50

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.11(5).2448-50

In-vitro lethality test has been successfully used as a preliminary study of cytotoxic and antitumor agents.

MATERIALS AND METHODS:

Preparation of Extracts: The plant species *Leea macrophylla* [Roxb.ex Hornem] belonging to Family: Leeaceae was collected from Kalgaon village Taluka. Patan, District- Satara and authenticated at Botanical department of Yashwantrao Chavan College of Science, Karad. The plant was dried under sunlight and fine powder of the plant was prepared by using a hand grinder.

Preparation of *Leea macrophylla* Aqueous Extract (LMAE): powder was mixed with 30 ml distilled water boiled for 30 min in round bottom flask attach with a reflux condenser. The material was filtered Whatman filter paper no 40, and filtrate was collected.

Preparation of *Leea macrophylla* Ethanolic Extract (LMEE): powder was mixed with 30 ml

Case Reports BMJ Case Rep. 2020 Feb 28;13(2):e233434. doi: 10.1136/bcr-2019-233434.

Giant sialolith mimicking an impacted tooth

Kumar Nilesh [1], Huzaifa S Kothi [2], Aaditee Vande [3], Sridhar Reddy [4]

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PMID: 32114495 PMCID: PMC7050355 (available on 2022-02-28) DOI: 10.1136/bcr-2019-233434

No abstract available

Keywords: dentistry and oral medicine; oral and maxillofacial surgery.

Case Reports BMJ Case Rep. 2020 Feb 10;13(2):e233082. doi: 10.1136/bcr-2019-233082

Central compact osteoma of mandibular condyle

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PMID: 32047087 PMCID: PMC7035841 (available on 2022-02-10) DOI: 10.1136/bcr-2019-233082

Abstract

Osteomas are bone tumours arising from the cortical or medullary bones of craniofacial skeleton. Involvement of frontal bone and paranasal sinuses is more frequent than jaw bones. Jaw osteomas are slow growing benign lesions, which are usually asymptomatic or present as painless swelling. Those involving mandibular condyle are relatively rare and result in significant functional and aesthetic disturbances. This paper reports a case of solitary central compact osteoma of mandibular condyle in an adult Indian female patient. A comprehensive review of previously published reports is also presented.

Keywords: dentistry and oral medicine; oral and maxillofacial surgery; surgery.

Endocr Metab Immune Disord Drug Targets. 2020;20(7):1024-1031.
doi: 10.2174/1871530319666191205122249.

Nickel and Oxidative Stress: Cell Signaling Mechanisms and Protective Role of Vitamin C

Swastika Das [1], Rachamalla C Reddy [2], Kailash S Chadchan [1], Arun J Patil [3], Mallanagouda S Biradar [2], Kusal K Das [2]

Affiliations

Affiliations

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2 Department of Physiology, Laboratory of Vascular Physiology and Medicine, Shri B. M. Patil Medical College, Hospital and Research Centre, BLDE (Deemed to be University), Vijayapur-586103, Karnataka, India.
3 Department of Biochemistry, Krishna Institute of Medical Sciences "Deemed to be University", Karad- 415539, Maharashtra, India.

PMID: 31804169 DOI: 10.2174/1871530319666191205122249

Abstract

Background: Nickel activates the signaling pathways through the oxygen sensing mechanism and the signaling cascades that control hypoxia-inducible transcriptional gene expressions through oxidative stress. This review emphasizes on the recent updates of nickel toxicities on oxidant and antioxidant balance, molecular interaction of nickel and its signal transduction through low oxygen microenvironment in the in-vivo physiological system.

Discussion: Nickel alters intracellular chemical microenvironment by increasing ionized calcium concentration, lipid peroxidation, cyclooxygenase, constitutive nitric oxide synthase, leukotriene B4, prostaglandin E2, interleukins, tumor necrosis factor-α, caspases, complement activation, heat shock protein 70 kDa and hypoxia-inducible factor-1α. The oxidative stress induced by nickel is responsible for the progression of metastasis. It has been observed that nickel exposure induces the generation of reactive oxygen species which leads to the increased expression of p53, NF-kβ, AP-1, and MAPK. Ascorbic acid (vitamin C) prevents lipid peroxidation, oxidation of low-density lipoproteins and advanced oxidation protein products. The mechanism involves that vitamin C is capable of reducing ferric iron to ferrous iron in the duodenum, thus the availability of divalent ferrous ion increases which competes with nickel (a divalent cation itself) and reduces its intestinal absorption and nickel toxicities.

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Tumor markers in oral cancer: A review

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Abstract

Tumor markers are the substances produced in response to the presence of cancer either by the body itself or by the cancer cells. These markers mostly are the proteins that are produced at a greater rate by the cancer cells. Increased levels of these substances can be detected in urine, blood, or body tissues of the patients with certain types of cancer. These markers are useful in differentiating primary or secondary tumors. In few noncancerous conditions, these markers are often found to be elevated. For these reasons, the knowledge regarding these biomarkers has increased tremendously. This article classifies the different types of tumor markers and implicates their role in some diseases.

Keywords: Biomarkers, cancer, tumor

Introduction

Tumor markers are substances that are produced either by the tumor itself or by the body in response to the presence of cancer or certain benign (noncancerous) conditions that can aid in the diagnosis of cancer and in the assessment of tumor burden.[1,2] Tumor markers have been used to predict the recurrence of a particular disease. Few markers are specific for a single individual tumor (tumor-specific marker); most

ORIGINAL RESEARCH

Antifungal Activity of Aloe Vera Leaf and Gel Extracts Against *Candida albicans*: An *In Vitro* Study

M Shilpa[1], Vinaya Bhat[2], A Veena Shetty[3], Mora SR Reddy[4], Prashant Punde[5]

Abstract

Aim: The present study was conducted with an aim to assess the antimicrobial activity of ethanolic extracts of aloe vera leaf and gel against *Candida albicans in vitro*.

Materials and methods: Fresh leaves were collected from the aloe vera plants naturally grown in Coorg. Aloe vera leaf as well as gel was separated, extracted with 95% ethanol in rotary shaker at constant temperature for 3 days, evaporated in a heating mantle, and stored in screw cap test tubes at 4°C for further analysis. Antifungal activity of aloe vera leaf and gel extracts against *C. albicans* was assessed by well diffusion method. Further, gel extracts of aloe vera at different dilutions (500, 400, 300, and 200 µL) were prepared and the turbidity was analyzed.

Results: Results showed that the ethanolic extract of aloe vera leaf did not show antifungal activity against *C. albicans*. A maximum of 99.33% antifungal activity was shown by 400 µL of aloe vera gel extract. The minimum inhibitory concentration of aloe vera gel extract was 200 µL (98.2% inhibition).

Conclusion: The ethanolic extract of aloe vera gel showed considerable antifungal activity against *C. albicans*.

Clinical significance: Modalities targeted on the use of aloe vera against *C. albicans* can prove to be more beneficial and consistent compared to conventional antifungals for preventive and/or therapeutic purposes against a variety of oral fungal diseases.

Keywords: Aloe vera, Antifungal, *Candida albicans*, Natural.

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Introduction

Natural products are important resources in traditional medicine and have been long used for prevention and treatment of many diseases.[1] All over the globe, many plants have been exploited for their medicinal value. Mukherjee and Wahile reported about the considered opinion of World Health Organization, which states that, "80% of the world's population are dependent on ancestral medicines for their haleness". For the healthcare of the remaining 20% population mainly residing in developed countries, therapeutic product of plants plays an important role.[2]

Aloe vera (Sanskrit-*Ghritakumari, Kumara*; Hindi-*Guarpatha, Ghikanvar*) a herb, commonly referred to as the "medicinal plant", is known for its wide range of therapeutic properties. The botanical name of aloe vera is *Aloe barbadensis* Miller and it belongs to lily family. Aloe products are very popular in the market and are widely used in skin care, cosmetics, medical, healthcare, and food industry.[3,4]

Aloe vera is made up of many complex ingredients including polysaccharides, glycoproteins, phenolic compounds, salicylic acid, lignin, hormones, amino acids, vitamins, saponins, and enzymes, which give aloe vera its many beneficial properties including anti-inflammatory, antibacterial, antioxidant, immune-boosting, and hypoglycemic properties.[3,5]

Even though several effective antifungal agents are available for oral candida infections, the failure is not uncommon because isolates of *C. albicans* may exhibit resistance to the drug during therapy.[6]

Hence, the present study was conducted with an aim to assess the antimicrobial activity of ethanolic extracts of aloe vera leaf and gel against *C. albicans in vitro*.

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Conflict of interest: None

Materials and Methods

The study protocol was approved by the Institutional Review Board of Coorg Institute of Dental Sciences, Virajpet.

Preparation of the Ethanolic Extract of Aloe Vera Gel

Fresh leaves weighing 1 kg were collected from the aloe vera plants (*A. barbadensis* Miller, belonging to Liliaceae family) naturally grown

Original Article

Evaluation of Platelet-Rich Fibrin and Platelet-Rich Plasma in Impacted Mandibular Third Molar Extraction Socket Healing and Bone Regeneration: A Split-Mouth Comparative Study

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Abstract

Objective: To compare the efficacy of platelet-rich fibrin (PRF) and platelet-rich plasma (PRP) in postoperative extraction socket healing, pain, swelling, and bone regeneration after surgical removal of impacted mandibular third molars. **Materials and Methods:** The present split-mouth comparative study was conducted on 20 patients undergoing bilateral identical mandibular third molar extraction. PRF was placed on the right side of the third molar extraction socket, and PRP was placed on the contralateral side. Evaluation of soft tissue healing, pain, and swelling was carried out on immediate postoperative and on the 1st day, 3rd day, and 7th day. Radiological bone density was assessed on the 3rd and 6th months postoperatively. **Results:** Soft tissue healing was better in PRF site. The postoperative pain scores in PRF site were less compared with PRP site; however, there was no significant difference between immediate postoperative period ($P < 0.15$), 1st day ($P < 0.96$), 3rd day ($P < 0.58$), and 7th day ($P < 0.78$). Measurement of swelling on the 1st day ($P < 0.0020$) and 3rd day ($P < 0.0010$) showed significant difference on PRF site, but it ceases to nonsignificant on the 7th day ($P < 1.00$). Postoperative mean bone density at the 3rd and 6th months was higher in PRF site, which was statistically significant ($P < 0.00001$). **Conclusion:** Our results showed a significant improvement in the soft tissue wound healing and increase in bone density in PRF site than PRP site. There was significant reduction of the swelling found on the 1st and 3rd day at PRF site as compared to the PRP site. Although the postoperative pain scores were less in PRF site, this was not statistically significant among the two groups.

Keywords: Pain, platelet-rich fibrin, platelet-rich plasma, soft tissue healing, swelling, third molar

Introduction

Extraction of mandibular third molar is one of the most common surgical procedures performed in oral and maxillofacial surgery, which results in pain, swelling, and bony defect. Many attempts are being made to improve the postoperative recovery and patient quality of life after third molar surgery. Although several materials have been used to minimize the postoperative sequelae, autologous graft is still considered as the gold standard.[1] One such autologous bone graft material with abundance of growth factors that gained popularity in recent years is platelet concentrates such as platelet-rich plasma (PRP) and protein-rich fibrin (PRF).[2] The earlier studies found that the growth factors present in PRF and PRP enhance the healing and improve the postoperative recovery.[3,4]

PRP is an autologous concentrate of platelets suspended in plasma, which contains vital growth factors such as platelet-derived growth factors and transforming growth factor-beta 1 and 2 and vascular endothelial growth factors, all of which positively influence the repair and regeneration of tissues.[5,6] It is prepared by a two-stage centrifugation procedure

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Evaluation of marginal bone loss around dental implants in cigarette smokers and nonsmokers. A comparative study

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Abstract

Background:

The overall success of osteointegrated dental implants depends on various factors. The deleterious effects of smoking on wound healing after the tooth extraction and its association with poor quality of bone are well documented. Similar effects of tobacco use on the success of dental implants are expected. Cigarette smoke mainly contains nicotine that delays the bone healing and increases the rate of infections at the implant insertion site.

Aim:

The purpose of the present study was to evaluate and compare the marginal bone loss around dental implants in smokers and nonsmokers.

Materials and Methods:

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Non-Hodgkin's lymphoma: A review

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Abstract

Lymphomas constitute the third most common neoplasm in head and neck region arising from the lymphoreticular system. Malignant lymphomas are divided into Hodgkin's disease and non-Hodgkin's lymphoma (NHL). NHL comprises approximately 5% of head and neck malignancies and displays a wide range of appearances comparable with Hodgkin's disease. Hodgkin's and non-Hodgkin's lymphomas are seen in the head and neck region, but extranodal disease, with or without lymph node involvement, is more common among NHL patients. Extranodal involvement includes the areas such as Waldeyer's ring (i.e., the tonsils, pharynx, and base of the tongue), salivary glands, orbit, paranasal sinuses, and thyroid glands. There are several classification systems for categorizing NHL out of which WHO classification for lymphoid neoplasms is mostly followed. This review describes the

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Comparative evaluation of role of hs C -reactive protein as a diagnostic marker in chronic periodontitis patients

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Abstract

Background and aim: C-reactive protein (CRP) is a type I acute phase protein, which can increase up to 1000 fold after the onset of a stimulus. It is a phylogenetically highly conserved plasma protein with homolog in vertebrates and many invertebrates that participate in systemic response to inflammation. Serum C-reactive protein levels are raised in patients with myocardial infarction and periodontitis, providing a potential mechanism to link destructive periodontal disease with an increased risk for other atherosclerotic complications. The purpose of the present study was to estimate and compare the levels of hs- C Reactive protein in chronic periodontitis patients before and after non-surgical periodontal therapy.

Methods: The study sample consisted of 45 individuals of age group 30-60 years that was divided into two groups Group I (control) and Group II (patients with chronic generalized periodontitis). The

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DECOLOURIZATION OF RHODAMINE CONTAINING PAPER MILL WASTE BY FUNGAL CULTURES ISOLATED FROM SOIL

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ABSTRACT

In search for the fungi capable of decolourizing Rhodamine containing Paper Mill waste, soil samples from the vicinity and nearby places of ETP plant of Paper Mill were collected and subjected for isolation of fungi by using Sabouraud Glucose Agar plates. In all 9 isolates were obtained. All nine fungal isolates were subjected to primary screening for their decolourizing activity for 'Rhodamine dye containing Paper Mill waste' by spot inoculation method using modified Sabouraud Glucose Agar plates (supplemented with paper mill waste). The four fungal isolates, F - II, F - III, F - IV and D - 1, which showed growth and decolourization were selected and subjected to secondary screening using liquid culture method. Secondary screening revealed that the fungal isolate F – II and D-1were the best strains amongst the four cultures as both showed maximum decolourization at 37 °C. They showed almost 40% decolourization of Rhodamine containing Paper Mill waste. The F - II and D-1 isolates were further studied for their morphological and cultural characteristics and were identified as a strain of *Aspergillus niger and Rhizopus oryzae*. The identity of the culture was confirmed by referring to the Fungus Identification Service Center.

KEY WORDS : Decolourization, Rhodamine, Paper mill waste, Fungus, *Aspergillus niger, Rhizopus oryzae*

INTRODUCTION

The pulp and paper industry is the largest industrial user of water (Hammer, 1987). A large proportion of this water is discharged, in the form of wastewater into rivers, lakes and oceans, promoting the rise of water pollution. A pulp and paper mill waste characteristically contains very high COD and colour. In India 34 large scale paper mills account for 51% of total capacity and 271 small paper mills account for the remaining 49%. The presence of lignin in the waste is not easily biodegradable, it makes the COD: BOD ratio of waste very high (Rao and Datta, 1979). Colour of process water from paper mill arises from printing ink pigments and dyes used for tinting and shading paper (Patric and Bruno, 2012). Colour removal of effluent from pulp wastes by certain *Aspergillus* sp. has already been demonstrated (Datta *et al.*, 1985; Gupta and Goel, 2004). Fungus species *Phanerochaete chrysosporium*, is being investigated extensively for their potential to remove the colour (Keharia and Madam, 2003). Many other fungi like certain *Rhizopus* spp, *Coriolopsis* spp have been found to have dye or colour decolourizing abilities (Holkar *et al.*, 2016; Chen & Ting, 2015; Nagarathamm and Bajpai, 1999).

Fungi are being investigated for their potential to decolourize coloured effluents, other than *Phanerochaete chrysosporium* (Livernoche *et al.*, 1981; Livernoche *et al.*, 1983) they includes *Trametes versicolor* (Bergebauer *et al.*, 1991), *Tinctosporia* sp.

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ISOLATION OF A STRAIN OF *ASPERGILLUS NIGER*, FROM DECAYING WOOD, CAPABLE OF DECOLORIZING THE DISTILLERY SPENT WASH

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ABSTRACT

In an attempt to search for distillery spent wash (DSW) decolorizing microorganisms, soil samples, deteriorating paints and decaying wood samples were subjected to isolation of bacteria (using nutrient agar), Yeasts (using 3 % malt agar) and Fungi (using Sabouraud's Glucose Agar). In all 30 isolates were obtained. All isolates were screened primarily for their decolorizing ability of distillery spent wash by plate method using modified Sabouraud's Glucose Agar (with various concentrations of spent wash, V/V). The isolate, designated as F2, was selected out during primary screening, was subjected to secondary screening by shake flask culture method. It was found that F2 isolate could grow in and decolorize the distillery spent wash at 1:10 dilution. The fungal culture, F2 isolate, was subjected to morphological and cultural characterization and was identified as a strain of *Aspergillus niger* gr. The identity of the culture was confirmed by referring to the Fungus Identification Service Center.

KEY WORDS : Spentwash, Decolorization, Fungi, *Aspergillus*, Soil, Wood.

INTRODUCTION

Production of ethanol from agricultural materials for use as an alternative fuel has been attracting worldwide interest because of the increasing demand for limited non-renewable energy resources and variability of oil and natural gas prices (Pant *et al.*, 2007). To fulfil this increasing demand the number of distilleries in India has gone very high.There are 319 distilleries in India with a capacity to produce nearly 3.25 billion liters of alcohol (Patel and Jamaluddin, 2018).

Molasses based distillery spent wash is highly acidic, dark brown coloured viscous liquid waste, produced in huge volume(8-15 per liter of ethanol produced) and carries heavy organic and inorganic loading. The dark brown colour is due to the presence of melanoidin pigments which are formed from Maillard reactions of sugar with amino groups of proteins. The waste is very difficult for decolourization and hazardous to environmental health if disposed off untreated (Agrawal and Pandey, 1994). Variety of methods are used for bioremediation of distillery waste water pollution (Kharayat, 2012; Pant and Adholya, 2007)

Since spent wash carry nutrients to support the growth of variety of microorganisms several workers have carried out the work to explore the possibility of using fungi for decolourization and or degradation of distillery spent wash or decolourization of melanoidin pigment of the spent wash (Benito *et al.*, 1997; Ohmomo *et al.*, 1987; Knapp *et al.*, 2001; Raghukumar and Rivonkar, 2001; Gupta & Goel, 2004; Pant *et al.*, 2007; Asgher *et al.*, 2008; Penedo *et al.*, 2009; Ravikumara *et al.*, 2013).

This study was aimed at tapping some sources like decaying wood sample, deteriorated paint sample from walls of building etc. for isolation of fungal strains that are capable of decolorizing of spent wash.

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ISOLATION OF A MESOPHILIC STRAIN OF *ASPERGILLUS WENTII* CAPABLE OF DECOLOURIZING TEXTILE DYEING MILL EFFLUENT

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ABSTRACT

In all nine fungal isolates were obtained from various sources such as soil, deteriorated paints and decaying wood collected from Karad (Maharashtra, India) locality, by enrichment culture technique followed by isolation by dilution plate technique, using Sabouraud Glucose Agar and incubating the plates at R. T. All nine isolates were subjected to primary screening by spot inoculation – Agar plate method using modified Sabouraud Glucose Agar (with various concentrations of textile effluent). Primary screening yielded four isolates designated as F - II, F - III, F - IV and D-1 capable of decolourizing the waste at 20% conc., V/V. These four isolates were subjected to secondary screening by liquid culture method. Secondary screening revealed that fungal isolate F-III was the best amongst the isolates as it showed maximum decolourization (91.38%) of 1:5 diluted effluents at 37 °C within eight days. The fungal isolate being of interest was then studied for its morphological and cultural characteristics and was identified as a strain of *Aspergillus wentii* Wehmer. The identity of the culture was confirmed by referring to the Fungus Identification Service Center.

KEY WORDS : Decoluorization, Textile dyeing waste, Fungus, *Aspergillus wentii*

INTRODUCTION

Textile wastes are coloured, highly alkaline, high in BOD and suspended solids and high in temperature (Nemerow, 1978; Nosheen *et al.*, 2000). Physicochemical characteristics of textile mills have been described in details by many workers (Rao and Datta 1979; Nosheen *et al.*, 2000). Synthetic dyes such as azo dyes, xanthenes dyes and anthraquinone dyes are very toxic to living organisms (Khadijah *et al.*, 2009). During and after dyeing. Large amount of dyestuffs are directly lost to the waste water and impart colour to the waste water in the industry which in turn imparts it to natural water body in which it is disposed off. Dyes present in the water on contact can cause variety of health problems.

Generally, these dyestuffs are designed to resist chemical fading and light induced oxidative fading (Nigam *et al.*, 2000). These dyes are highly resistant to microbial degradation under aerobic conditions; hence, wastes containing them are not much amenable to aerobic treatment as for as decolourization is concerned. This mainly makes them more resistant to biodegradation. Amongst the other factors that contribute to reduction in their biodegradability includes high water solubility, high molecular weights and fused aromatic ring structures which inhibit penetration through biological membranes (Keharia and Medamwar, 2003). Azo dyes are the largest class of dyes, which are not readily degraded by microorganisms. Microorganisms those are able to degrade azo dyes anaerobically, have been isolated (Growther & Minakshi 2009). Wastewater treatment facilities are often unable to completely remove commercial dyestuffs, thus contributing to the pollution of aqueous habitats. There are number of reports indicating that fungi can play a role in the decolorization in the textile industry waste (Fukuzumi, T. 1980; Thomas *et al.*, 1981; Livernoche *et al.*, 1983; Datta *et al.*, 1985; Belsare & Prasad, 1988,

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OPTIMIZATION OF MEDIUM COMPOSITION FOR ASPERGILLUS NIGER F-2 FOR IT'S DECOLORIZING AND COD REDUCING ACTIVITY OF THE DISTILLERY SPENT WASH

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ABSTRACT

During the secondary screening program of distillery spent wash decolorizing fungi a strain of *Aspergillus niger* F-2 that could decolorize and grow in 1:10 diluted distillery spent wash was obtained. The culture was taken up for further studies for optimization of medium composition for the growth and decolorizing activity of the organism. The Optimization studies include the optimization of pH, inoculum size, carbon and nitrogen source, incubation temperature and incubation period. The optimum pH, inoculum size, temperature and incubation period were found to be 6.00, 2.5%, 35 °C and 3 day respectively. Glucose and peptone were found to be the best carbon and nitrogen sources respectively. Glucose was found to be the best at the concentration of 2.5 % while peptone was found to be the best at 0.1 % concentration. The fungal culture under optimal conditions was found to give maximum decolorization of the 1:10 diluted spent wash to the extent of almost 79%. This isolate also showed the degradation as evidenced from the reduction in the term of COD mg/L to the extent of 58.06% within three days.

KEY WORDS : Decolorization, Optimization medium, Distillery, Spent wash, COD, *Aspergillus niger*

INTRODUCTION

Distilleries producing alcohol are of great concern from environmental pollution point of view, as on an average of the 8-15 L of effluent (spentwash) is generated from them for every liter of alcohol produced. Distillery spent wash is produced as liquid waste in huge amount and carry heavy organic and inorganic load. It is dark brown colored highly acidic and viscous liquid waste (Das and Bhattacharya, 1992). The dark brown colour of this waste is mainly due to the presence of melanoidin pigment. Melanoidins are formed by the maillard amino –carbonyl reaction between reducing sugars and amino acids (Wedzicha and Kaputo, 1992)

Physiochemical methods of removal of Melanoidins have their own limitations.

Disposal of the distillery spentwash into water bodies is hazardous as it has great pollution potential affecting the aquatic life in the water bodies like streams and rivers.

Distillery spentwash also supports the growth of many heterogeneous microorganisms which can be isolated and ultimately used for the treatment of spentwash.

Therefore distillery spentwash could be amenable to microbiological methods of treatment. In fact several workers have reported the role and potential of some specific microorganisms in the degradation and or decolourization of spentwash (Wetanabe *et al.*, 1982, Raghukumar and Rivonkar, 2001; Chavan *et al.*, 2006; Fahy *et al.*, 2007.; Singh *et al.*, 2007; Naik *et al.*, 2009; Singh and Dixit, 2010; Ravikumar *et al.*, 2011; Ravikumar *et al.*, 2013). Some workers have

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ORIGINAL ARTICLE

Identification of Anxiolytic Potential of Niranthin: In-vivo and Computational Investigations

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Abstract

Anxiety is an unpleasant state, which can critically decrease the quality of life is often accompanied by nervous behaviour and rumination. Niranthin is a lignan isolated from various *Phyllanthus* sources. The literature survey on niranthin highlights wide ranges of the therapeutic potentials. In a present study, based on our previous investigations, we evaluated pure, isolated and characterized niranthin as an anxiolytic agent. The niranthin [6-[(2*R*,3*R*)-3-[(3,4-dimethoxyphenyl)methyl]-4-methoxy-2-(methoxymethyl)butyl]-4-methoxy-1,3-benzodioxole] was purchased from commercial source and further subjected for assessment of its anxiolytic potentials using popular animal models including Elevated plus-maze model/test (EPM) and Light & Dark Exploration test (L&D). GABA-A receptor mediation was evaluated by pretreating the mice with the GABA-A receptor antagonist Flumazenil before the EPM task. Molecular docking simulation studies (pdb id: 4COF) carried out by *Vlife QSAR* software showed that niranthin (docking score: − 62.1714 kcal/mol) have shown comparatively best docking score compared to the standard drug Diazepam (docking score: − 63.1568 kcal/mol). To conclude, Niranthin has probable potential in the management of anxiety disorder. Our in-silico and in-vivo analysis (indirectly) indicated the plausible role of GABA mediation for anxiolytic activity. Although, these studies are preliminary, future in depth experimental explorations will be required to use Niranthin as anti-anxiety drug in near future.

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s13659-020-00284-8) contains supplementary material, which is available to authorized users.

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ORIGINAL ARTICLE

Prevalence of Epipteric Bones in Central Indian Adult Dry Skulls

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Abstract:

Background: A sutural bone is present at the pterion then it is called "Epipteric" or "Flower's bone". They are frequently present in a variety of congenital disorders like hypothyroidism, cleidocranial dysostosis, progeria, rickets etc. Their presence is clinically important because it may lead to complication in making burr holes at pterion. *Aim and Objectives:* To find the incidence and number of Epipteric bones in Indian dry skulls of known sex. *Material and Methods:* In the present study, pterion region of 90 dried adult human skulls of known sex were examined for presence or absence of Epipteric bone. *Results:* Present study observed the incidence of Epipteric bones to be13.33%. Incidence rate was higher in female skulls than male skulls (male: 10.83%; female: 18.33%). *Conclusion:* This data gives idea regarding overall incidence of Epipteric bones in human skulls of India. The knowledge of this variable is useful for neurosurgeons, anthropologists and radiologists.

Keywords: Epipteric Bone, Suture, Dry Skull, Pterion, Lambdoid Suture

Introduction:

A small, isolated irregular shaped bone, which are present in cranial sutures and fontanels are known as Sutural or Wormian Bones (WB). Their number varies from person to person and can be present on either side of the skull. Usually, not more than two or three are found in a single individual, but more than one hundred have been found in the skull of a hydrocephalic adult [1-2]. These bones are present more frequently in the course of the lambdoid suture but may be occasionally seen within the sagittal and coronal sutures [2]. In 1643, Olaus Wormius who was the Danish anatomist described these bones in a letter to Thomas Bartholin [3-4]. They are usually irregular in shape but they may be round, oval, triangular, polygonal. Also, they can vary in size from under 1 mm to 5 cm^3. "Inca bone" or "Goethe's ossicle is a large sutural bone that is present at lambda [1]. When a sutural bone is present at the pterion then it is called "Epipteric" or "pterion" or "Flower's bone" or "oss Epipterica" [2,5]. They are variable in size, shape and can be present on either side of the skull. WBs are present in healthy individuals, but their high incidence of multiple WBs have been seen frequently in a variety of congenital disorders like hypothyroidism, cleidocranial dysostosis, progeria, hypophosphatasia, rickets etc. Also, these bones are very useful in primary diagnosis of brittle bone disease osteogenesis imperfect [6-8].

In 1884, numerous Epipteric bones were observed in skull of monkeys, dogs and other carnivores, and sheep by Sutton [9]. Incidence of these bones show the variation in various ethnic groups which may be due to genetic or environmental influences. The highest incidence is observed in Chinese

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Estimating global injuries morbidity and mortality: methods and data used in the Global Burden of Disease 2017 study

Spencer L James [1], Chris D Castle [1], Zachary V Dingels [1], Jack T Fox [1], Erin B Hamilton [1], Zichen Liu [1], Nicholas L S Roberts [1], Dillon O Sylte [1], Gregory J Bertolacci [1], Matthew Cunningham [1], Nathaniel J Henry [1], Kate E LeGrand [1], Ahmed Abdelalim [2], Ibrahim Abdollahpour [3], Rizwan Suliankatchi Abdulkader [4], Aidin Abedi [5], Kedir Hussein Abegaz [6 7], Akine Eshete Abosetugn [8], Abdelrahman I Abushouk [9], Oladimeji M Adebayo [10], Jose C Adsuar [11], Shailesh M Advani [12 13], Marcela Agudelo-Botero [14], Tauseef Ahmad [15 16], Muktar Beshir Ahmed [17], Rushdia Ahmed [18 19], Miloud Taki Eddine Aichour [20], Fares Alahdab [21], Fahad Mashhour Alanezi [22], Niguse Meles Alema [23], Biresaw Wassihun Alemu [24 25], Suliman A Alghnam [26], Beriwan Abdulqadir Ali [27], Saqib Ali [28], Cyrus Alinia [29], Vahid Alipour [30 31], Syed Mohamed Aljunid [32 33], Amir Almasi-Hashiani [34], Nihad A Almasri [35], Khalid Altirkawi [36], Yasser Sami Abdeldayem Amer [37 38], Catalina Liliana Andrei [39], Alireza Ansari-Moghaddam [40], Carl Abelardo T Antonio [41 42], Davood Anvari [43 44], Seth Christopher Yaw Appiah [45 46], Jalal Arabloo [30], Morteza Arab-Zozani [47], Zohreh Arefi [48], Olatunde Aremu [49], Filippo Ariani [50], Amit Arora [51 52], Malke Asaad [53], Beatriz Paulina Ayala Quintanilla [54 55], Getinet Ayano [56], Martin Amogre Ayanore [57], Ghasem Azarian [58], Alaa Badawi [59 60], Ashish D Badiye [61], Atif Amin Baig [62 63], Mohan Bairwa [64 65], Ahad Bakhtiari [66], Arun Balachandran [67 68], Maciej Banach [69 70], Srikanta K Banerjee [71], Palash Chandra Banik [72], Amrit Banstola [73], Suzanne Lyn Barker-Collo [74], Till Winfried Bärnighausen [75 76], Akbar Barzegar [77], Mohsen Bayati [78], Shahrzad Bazargan-Hejazi [79 80], Neeraj Bedi [81 82], Masoud Behzadifar [83], Habte Belete [84], Derrick A Bennett [85], Isabela M Bensenor [86], Kidanemaryam Berhe [87], Akshaya Srikanth Bhagavathula [88 89], Pankaj Bhardwaj [90 91], Anusha Ganapati Bhat [92], Krittika Bhattacharyya [93 94], Zulfiqar A Bhutta [95 96], Sadia Bibi [97], Ali Bijani [98], Archith Boloor [99], Guilherme Borges [100], Rohan Borschmann [101 102], Antonio Maria Borzì [103], Soufiane Boufous [104], Dejana Braithwaite [105], Nikolay Ivanovich Briko [106], Traolach Brugha [107], Shyam S Budhathoki [108], Josip Car [109 110], Rosario Cárdenas [111], Félix Carvalho [112], João Mauricio Castaldelli-Maia [113], Carlos A Castañeda-Orjuela [114 115], Giulio Castelpietra [116 117], Ferrán Catalá-López [118 119], Ester Cerin [120 121], Joht S Chandan [122], Jens Robert Chapman [123], Vijay Kumar Chattu [124], Soosanna Kumary Chattu [125], Irini Chatziralli [126 127], Neha Chaudhary [128 129], Daniel Youngwhan Cho [130], Jee-Young J Choi [131], Mohiuddin Ahsanul Kabir Chowdhury [132 133], Devasahayam J Christopher [134], Dinh-Toi Chu [135], Flavia M Cicuttini [136], João M Coelho [137], Vera M Costa [112], Saad M A Dahlawi [138], Ahmad Daryani [139], Claudio Alberto Dávila-Cervantes [140],

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Measuring universal health coverage based on an index of effective coverage of health services in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019

GBD 2019 Universal Health Coverage Collaborators

Collaborators

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Free PMC article

Abstract

Background: Achieving universal health coverage (UHC) involves all people receiving the health services they need, of high quality, without experiencing financial hardship. Making progress towards UHC is a policy priority for both countries and global institutions, as highlighted by the agenda of the UN Sustainable Development Goals (SDGs) and WHO's Thirteenth General Programme of Work (GPW13). Measuring effective coverage at the health-system level is important for understanding whether health services are aligned with countries' health profiles and are of sufficient quality to produce health gains for populations of all ages.

Methods: Based on the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019, we assessed UHC effective coverage for 204 countries and territories from 1990 to 2019. Drawing from a measurement framework developed through WHO's GPW13 consultation, we mapped 23 effective coverage indicators to a matrix representing health service types (eg, promotion, prevention, and treatment) and five population-age groups spanning from reproductive and newborn to older adults (≥65 years). Effective coverage indicators were based on intervention coverage or outcome-based measures such as mortality-to-incidence ratios to approximate access to quality care; outcome-based measures were transformed to values on a scale of 0-100 based on the 2·5th and 97·5th percentile of location-year values. We constructed the UHC effective coverage index by weighting each effective coverage indicator relative to its associated potential health gains, as measured by disability-adjusted life-years for each location-year and population-age group. For three tests of validity (content, known-groups, and convergent), UHC effective coverage index performance was generally better than that of other UHC service coverage indices from WHO (ie, the current metric for SDG indicator 3.8.1 on UHC service coverage), the World Bank, and GBD 2017. We quantified frontiers of UHC effective

Lancet Glob Health. 2020 Sep;8(9):e1162-e1185. doi: 10.1016/S2214-109X(20)30278-3.

Mapping geographical inequalities in access to drinking water and sanitation facilities in low-income and middle-income countries, 2000-17

Local Burden of Disease WaSH Collaborators

Collaborators

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Free PMC article

Abstract

Background: Universal access to safe drinking water and sanitation facilities is an essential human right, recognised in the Sustainable Development Goals as crucial for preventing disease and improving human wellbeing. Comprehensive, high-resolution estimates are important to inform progress towards achieving this goal. We aimed to produce high-resolution geospatial estimates of access to drinking water and sanitation facilities.

Methods: We used a Bayesian geostatistical model and data from 600 sources across more than 88 low-income and middle-income countries (LMICs) to estimate access to drinking water and sanitation facilities on continuous continent-wide surfaces from 2000 to 2017, and aggregated results to policy-relevant administrative units. We estimated mutually exclusive and collectively exhaustive subcategories of facilities for drinking water (piped water on or off premises, other improved facilities, unimproved, and surface water) and sanitation facilities (septic or sewer sanitation, other improved, unimproved, and open defecation) with use of ordinal regression. We also estimated the number of diarrhoeal deaths in children younger than 5 years attributed to unsafe facilities and estimated deaths that were averted by increased access to safe facilities in 2017, and analysed geographical inequality in access within LMICs.

Findings: Across LMICs, access to both piped water and improved water overall increased between 2000 and 2017, with progress varying spatially. For piped water, the safest water facility type, access increased from 40·0% (95% uncertainty interval [UI] 39·4-40·7) to 50·3% (50·0-50·5), but was lowest in sub-Saharan Africa, where access to piped water was mostly concentrated in urban centres. Access to both sewer or septic sanitation and improved sanitation overall also increased across all LMICs during the study period. For sewer or septic sanitation, access was 46·3% (95% UI 46·1-46·5) in 2017, compared with 28·7% (28·5-29·0) in 2000. Although some units improved access to the safest drinking water or sanitation facilities since 2000, a large absolute number of people continued to not have

Lancet Glob Health. 2020 Aug;8(8):e1038-e1060. doi: 10.1016/S2214-109X(20)30230-8.

Mapping geographical inequalities in oral rehydration therapy coverage in low-income and middle-income countries, 2000-17

Local Burden of Disease Diarrhoea Collaborators

Collaborators
PMID: 32710861 PMCID: PMC7388204 DOI: 10.1016/S2214-109X(20)30230-8
Free PMC article

Abstract

Background: Oral rehydration solution (ORS) is a form of oral rehydration therapy (ORT) for diarrhoea that has the potential to drastically reduce child mortality; yet, according to UNICEF estimates, less than half of children younger than 5 years with diarrhoea in low-income and middle-income countries (LMICs) received ORS in 2016. A variety of recommended home fluids (RHF) exist as alternative forms of ORT; however, it is unclear whether RHF prevent child mortality. Previous studies have shown considerable variation between countries in ORS and RHF use, but subnational variation is unknown. This study aims to produce high-resolution geospatial estimates of relative and absolute coverage of ORS, RHF, and ORT (use of either ORS or RHF) in LMICs.

Methods: We used a Bayesian geostatistical model including 15 spatial covariates and data from 385 household surveys across 94 LMICs to estimate annual proportions of children younger than 5 years of age with diarrhoea who received ORS or RHF (or both) on continuous continent-wide surfaces in 2000-17, and aggregated results to policy-relevant administrative units. Additionally, we analysed geographical inequality in coverage across administrative units and estimated the number of diarrhoeal deaths averted by increased coverage over the study period. Uncertainty in the mean coverage estimates was calculated by taking 250 draws from the posterior joint distribution of the model and creating uncertainty intervals (UIs) with the 2·5th and 97·5th percentiles of those 250 draws.

Findings: While ORS use among children with diarrhoea increased in some countries from 2000 to 2017, coverage remained below 50% in the majority (62·6%; 12 417 of 19 823) of second administrative-level units and an estimated 6 519 000 children (95% UI 5 254 000-7 733 000) with diarrhoea were not treated with any form of ORT in 2017. Increases in ORS use corresponded with declines in RHF in many locations, resulting in relatively constant overall ORT coverage from 2000 to 2017. Although ORS was uniformly distributed subnationally in some countries, within-country

Review Lancet. 2020 Oct 17;396(10258):1135-1159. doi: 10.1016/S0140-6736(20)31404-5

Five insights from the Global Burden of Disease Study 2019

GBD 2019 Viewpoint Collaborators

Collaborators

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Free PMC article

Abstract

The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019 provides a rules-based synthesis of the available evidence on levels and trends in health outcomes, a diverse set of risk factors, and health system responses. GBD 2019 covered 204 countries and territories, as well as first administrative level disaggregations for 22 countries, from 1990 to 2019. Because GBD is highly standardised and comprehensive, spanning both fatal and non-fatal outcomes, and uses a mutually exclusive and collectively exhaustive list of hierarchical disease and injury causes, the study provides a powerful basis for detailed and broad insights on global health trends and emerging challenges. GBD 2019 incorporates data from 281 586 sources and provides more than 3·5 billion estimates of health outcome and health system measures of interest for global, national, and subnational policy dialogue. All GBD estimates are publicly available and adhere to the Guidelines on Accurate and Transparent Health Estimate Reporting. From this vast amount of information, five key insights that are important for health, social, and economic development strategies have been distilled. These insights are subject to the many limitations outlined in each of the component GBD capstone papers.

Figures

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ACS Chem Neurosci. 2020 Oct 7;11(19):2962-2977. doi: 10.1021/acschemneuro.0c00555. Epub 2020 Sep 18.

Current Perspectives on Therapies, Including Drug Delivery Systems, for Managing Glioblastoma Multiforme

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PMID: 32945654 DOI: 10.1021/acschemneuro.0c00555

Abstract

Glioblastoma multiforme (GBM), a standout among the most dangerous class of central nervous system (CNS) cancer, is most common and is an aggressive malignant brain tumor in adults. In spite of developments in modality therapy, it remains mostly incurable. Consequently, the need for novel systems, strategies, or therapeutic approaches for enhancing the assortment of active agents meant for GBM becomes an important criterion. Currently, cancer research focuses mainly on improving the treatment of GBM via diverse novel drug delivery systems. The treatment options at diagnosis are multimodal and include radiation therapy. Moreover, significant advances in understanding the molecular pathology of GBM and associated cell signaling pathways have opened opportunities for new therapies. Innovative treatment such as immunotherapy also gives hope for enhanced survival. The objective of this work was to collect and report the recent research findings to manage GBM. The

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Review J Bone Miner Metab. 2020 Nov;38(6):759-764. doi: 10.1007/s00774-020-01125-x. Epub 2020 Jul 31.

Role of matrix vesicles and crystal ghosts in bio-mineralization

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Abstract

Matrix vesicles (MVs) are extracellular membrane-bound vesicles of about ~ 50-200 nm in diameter that play a role in the bio-mineralization process of hard tissue formation. The present review is based on the empirical phenomenon of primary mineralization process via matrix vesicle-mediated mechanism with special reference to crystal ghosts as well as the mechanism on the organic-inorganic relationship between matrix vesicles and crystal ghosts, and the transformation that these structures undergo during bio-mineralization.

Keywords: Bio-mineralization; Crystal ghosts; Exosome; Matrix vesicle; Microvesicles.

J Eur Acad Dermatol Venereol. 2020 Jul;34(7):e329-e331. doi: 10.1111/jdv.16295. Epub 2020 Mar 12.

White rosettes in borderline lepromatous leprosy: a new observation

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No abstract available

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Current updates on dental perspectives of leprosy - Revisited

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Abstract

The present review summarizes the current updates on dental perspectives on leprosy and the affording factors that are responsible for the prevalence of caries and periodontal diseases in leprosy. It also highlights immunopathological phenomena and reactional episodes of leprosy that occur due to daedal interactions between the perio-odontopathic bacteria and M. leprae. In addition, a brief introduction, historiography, classification and clinicopathological aspects are also been covered.

Keywords: Dental caries; Leprosy; PCR; Periodontium; Vaccine.

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ISOLATION AND QUANTIFICATION OF GALLIC ACID FROM *EULOPHIA OCHREATA* LINDL. BY HPTLC

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Keywords:

Eulophia ochreata Lindl. Alcoholic extract, TLC isolate, HPTLC, Gallic acid

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ABSTRACT: In the healthcare system, the development and modernization of phytomedicine in phytochemistry play a central and important role in drug development. Isolation and purification of bioactive compounds from naturally occurring substance are of prime importance. A sensitive and reliable high-performance thin-layer chromatography method has been developed for the estimation of gallic acid in the alcoholic extract of *Eulophia ochreata* Lindl. Alcoholic extract prepared was applied on silica gel G 60 F254 plate. The plate was developed using toluene: ethyl acetate: methanol: formic acid (6:6:0.4:1.6) as a mobile phase detection and quantification were performed by densitometric scanning at 275 nm. The system was found to give well-resolved bands for alcoholic extract having R_f values as 0.8 was matched with the standard R_f values like 0.82. The densitometric chromatogram of HPTLC fingerprint of the alcoholic extract, isolate, and standard gallic acid was obtained. The calibration curve of gallic acid was linear over a concentration range (0.2- 2 microg/ml) with a good correlation coefficient (R^2= 0.9986) and coefficient of variation as CV- 2.4663%. The method was validated for linearity, precision, specificity, and it was found to be precise, reliable, and suitable. The proposed method is simple, rapid, precise, and accurate. The method was found to be suitable for qualitative and quantitative analysis of gallic acid in the alcoholic extract of *Eulophia ochreata* Lindl.

INTRODUCTION: Herbal medicines are believed to have better compatibility with the human body due to their safety, efficacy, cultural acceptability, and lesser side effects [1]. Phenolic acids have been considered as potential therapeutic agents against a wide range of ailments, including neuro-degenerative diseases, cancer, diabetes, cardiovascular dysfunction, inflammatory diseases, and in aging [2].

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The importance of phenolic acids as antioxidant activities and their possible usage have reached a milestone in the health care system. Phenolic acids are diverse group that includes hydroxybenzoic and hydroxycinnamic acids [3]. One such prominent phenolic acid is gallic acid. Gallic acid elicits several interesting and various biological responses, such as antibacterial, anti-fungal, anti-inflammatory, antiviral, anti-cancer, antioxidant, antimutagenic and anti-diabetic activities [4].

Due to these biological activities, gallic acid could be a good lead compound for new drug development [5]. HPTLC is an commonly used technique for qualitative and quantitative analysis of chemical markers in herbal raw materials. HPTLC has advantages of simplicity, sensitivity,

J Family Med Prim Care. 2020 Jul 30;9(7):3480-3486. doi: 10.4103/jfmpc.jfmpc_151_20. eCollection 2020 Jul.

An epidemiological study to assess periodontal status among sugar factory workers of Karad taluka using community periodontal index

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Abstract

Objectives: Oral health is an integral component of general health. Periodontal disease is one of the most prevalent dental diseases among the population. Researchers have identified an association of various risk factors with periodontal disease. The study aimed to assess the periodontal status among the sugar factory workers of Karad taluka.

Materials and methods: The study was conducted among 1200 subjects in the age group of 25-54 years. Personal and sociodemographic data were recorded in the proforma based on the WHO oral health survey form (1997). Periodontal status was assessed using community periodontal index (CPI). For statistical analyses, Chi-square test and Mulliple Logistic Regression analyses was performed.

Results: The sociodemographic characteristics (age, sex, and socioeconomic status) and deleterious habits like tobacco chewing and smoking were found to be significantly associated with the CPI and LoA scores for the population ($P < 0.00001$).

Conclusion: The analysis of the results obtained in this epidemiological study evidenced that periodontitis is prevalent among the sugar factory workers of Karad taluka. There is a need for emphasis on the preventive care.

J Oral Biol Craniofac Res. Oct-Dec 2020;10(4):337-342. doi: 10.1016/j.jobcr.2020.06.011. Epub 2020 Jul 3.

Comparison of cleaning effectiveness of single rotary file OneShape and reciprocating F2 Protaper with Protaper Universal sequence: A SEM analysis

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Affiliations

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Abstract

Aim: This in vitro study intend to compare the cleaning effectiveness of Protaper universal sequence with reciprocating F2 Protaper and single rotary file One shape.

Materials and method: 30 extracted human 1st mandibular molars were chosen for the analysis. Three NiTi file systems were used for mechanical preparation, ProTaper full sequence in rotary motion, single F2 Protaper file used in reciprocating motion, and One shape single file used in a circular motion. Irrigation was carried out after each instrument use using 5 ml of 5% NaOCl followed by normal saline. The root canal surface was evaluated at three different areas (coronal, middle and apical thirds) using Scanning Electron Microscopy. Debris and the Smear layer were evaluated. Data were analyzed statistically using the Friedman test and Kruskal-Wallis test ($p \leq 0.05$).

Results: A statistically significant difference ($p \leq 0.05$) was observed in the debris score of the Protaper universal group when the 3 thirds of the root were compared. Intergroup comparisons confirmed a statistically significant difference at the coronal and apical third of the roots when debris scores were evaluated. Intragroup comparison for the smear layer demonstrated a statistically significant difference ($p \leq 0.05$) at all the 3 levels of the radicular canal for the 3 groups studied. Intergroup comparisons revealed a statistically significant difference ($p \leq 0.05$) in the middle and apical 1/3rd when the smear layer was evaluated.

Conclusion: The Protaper full sequence group provided better results than Single F2 ProTaper and One shape groups when debris and smear layer removal was investigated.

Keywords: Debris; One shape; Single F2 file; Smear layer.

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EVALUATION USING *IN-VITRO* ASSAYS FOR GLUCOSE DIFFUSION AND KINETICS OF AMYLOLYSIS OF *LEEA MACROPHYLLA* STANDARDIZED EXTRACTS

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ABSTRACT

The standardized aqueous and methanol extracts of *Leea macrophylla* were studied for their effects on assay of diffusion glucose and for kinetics of amylolysis using *in vitro* models.

The results verified the antidiabetic potential of the standardized aqueous and methanol extract of *Leea macrophylla*.

Keywords: *Leea macrophylla*; glucose diffusion; amylolysis kinetics

INTRODUCTION

Leea macrophylla (Roxb.), of Leeaceae family, an herbaceous shrub with big sized leaf similar to a elephant ear. Ethnobotanical survey shows some important therapeutic uses in cancer, dysentery, body-ache, and sexual disability [1]. It is traditionally used for nephrolithiasis, rheumatism, arthritis, pain, tonsillitis, tetanus, snake bites, sore and blood effusion [2, 3]. Leaf juice is used for local anti-inflammatory effects, it is also used to treat

ORIGINAL ARTICLE

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Evaluation of Hepatoprotective Effects of WrightiaTinctoria Leaves in Thioacetamide Induced Hepatotoxicity

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Wrightiatinctoria, methanolic extract, thioacetamide, hepatoprotective

ABSTRACT

The plants belong to the genus Wrightiaare widely distributed throughout the world. Wrightiatinctoria (WT) plant species are being used in folk medicine for the treatment of several diseases. The review of the literature suggests that a good number of preclinical have confirmed the medicinal use of various Wrightiatinctoria species that have been mentioned in traditional medicine. The extract of Wrightiatinctoria was given daily to the rats, at doses of two hundred and 400 mg/kg along with thioacetamide to assess the affectivity of extract, against thioacetamide-induced hepatotoxicity. Serum samples were collected for analysis of various hepatoprotective parameters like aspartate transaminase, alanine transaminase, antacid phosphatase and total bilirubin, using commercially available test kits, together with morphological and histopathological indices in the liver of healthy and thioacetamide treated rats. Animals were sacrificed from each group, and their livers were dissected out for histopathological studies. Results of the present study suggest that the methanolic extract of Wrightiatinctoria leaves possess significant hepatoprotective activity on thioacetamide-induced hepatotoxicity, which might be associated with its high phenolic and flavonoid content and antioxidant properties. In conclusion, the present study depicts the curative efficacy of Wrightiatinctoria in an in-vivo experimental system.

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INTRODUCTION

The plants are belonging to the genus Wrightiaare widely distributed throughout the world (Nitin and Patil, 2019; Oviya *et al.*, 2015).Wrightiatinctoria(WT) plant species are being used in folk medicine for the treatment of several diseases (Khyade and Vaikos, 2014). The review of the literature suggests that a good number of preclinical have confirmed the medicinal use of various Wrightiatinctoria species that have been mentioned in traditional medicine (Patil *et al.*, 2012).In our previous studies, we have reported hepatoprotec-

Shinde et al. | J Pure Appl Microbiol | 14(3):2047-2051 | September 2020
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RESEARCH ARTICLE OPEN ACCESS

Co-infection of Hepatitis A and Hepatitis E Viruses among the Acute Viral Hepatitis Cases in Tertiary Care Hospital –A Four Years Retrospective Study

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Abstract

Acute viral hepatitis(AVH) is caused by Hepatitis A (HAV) and Hepatitis E(HEV). It is major health burden in India. Both the viruses HAV and HEV are primarily transmitted via the faeco-oral course. Study was conducted to determine the seroprevalence of HAV, HEV and rate of co-infection in AVH patients attending rural tertiary care centre. A retrospective laboratory record based study was carried out in rural tertiary health care center located in Western Maharashtra. Laboratory and Medical records of suspected acute viral infection patients were analyzed during study. Study period was June 2014 to July 2018. Commercially available ELISA kits of IgM anti-HAV and IgM anti-HEV were used to analyze serum samples of suspected study participants. Tests were carried out as per the manufacturer's instructions. A total of 778 acute viral hepatitis cases were included in the study from July 2014 to July 2018 among which 85/778 (10.9 %) detected positive for HAV and 121/778 (15.6%) detected positive for HEV. Co-infection was identified in 6/778(0.8 %). Jaundice, fever fatigue and hepatomegaly were common clinical presentation in HAV, HEV and confection with both viruses in acute viral hepatitis patients. Study indicated low exposure to HAV in childhood bellow 16 years. Co-infection rate was detected high in 16-25 years age group. Vaccination policy against HAV in adolescent age group needed as there is change epidemiological shift of HAV which has been observed in the current study. These data will helps for planning future vaccination strategies, better implementation sanitation program, and safe water supply in this geographic area.

Keywords: Co-infection, hepatitis A virus, hepatitis E virus, seroprevalence

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Med Hypotheses. 2020 Nov;144:110219. doi: 10.1016/j.mehy.2020.110219. Epub 2020 Aug 27.

Diminishing reactive adipogenesis leads to disease progression of oral submucous fibrosis

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PMID: 33254526 DOI: 10.1016/j.mehy.2020.110219

Abstract

Oral fibroblasts, similar to dermal fibroblasts, have the potential to resist the local insults like trauma to the oral mucosa by differentiating into adipocytes and secreting antimicrobial peptide cathelicidin (Camp) and this physiologic process in known as reactive adipogenesis. We hypothesize that in oral submucous fibrosis (OSF), due to constant secretion and up-streaming of transforming growth factor-beta (TGF- β), oral fibroblast lose their adipogenic differentiation potential and Camp production, which leads to progressive fibrosis in OSF. The implication of this hypothesis could open some promising vistas on still unexplored innate immune systems harboured by oral mucosa. Restoring and

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Case Reports J Oral Maxillofac Pathol. May-Aug 2020;24(2):327-331.
doi: 10.4103/jomfp.JOMFP_120_20. Epub 2020 Sep 9.

Carcinosarcoma: A rare case report of a recurrent mass in the neck region

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Abstract

Carcinosarcoma, a biphasic malignant mixed tumor, is an extremely rare neoplasm with >1% incidence. This aggressive malignancy is characterized by the presence of two components admixed with each other, i.e., the epithelial component and the mesenchymal component arising from a monoclonal/multiclonal origin or *de novo*. Most patients usually present between 60 and 65 years of age with no sex predilection. The authors present a case of carcinosarcoma arising as a mass in the neck region of a 14-year-old male. The case is been presented for its rarity of occurrence in the younger age group.

Keywords: Carcinosarcoma; head and neck neoplasm; mixed tumor; recurrent mass; supraclavicular region; young adult.

Figures

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EMERGING HOT TOPICS

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ABO blood grouping and COVID 19: Is there any correlation in suspectibility?

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Research

Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia

Girish Degavi, Shiferaw Gelchu Adola, Hazaratali Panari, Shivaji Pawar, Chala Wata Dereso

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Keywords: Occupational exposure, HIV, Bule Hora Hospital, nurses

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Available online at: https://www.panafrican-med-journal.com//content/article/37/333/full

Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia

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Article Detail

Injectable microspheres of erlotinib hydrochloride for sustained drug release.

Author: TEJESWINI V., RAJENDRA C. DOUAD, ADHIKRAO V. YADAV

Abstract: The aim of this research was to formulation and evaluation of injectable microspheres of Erlotinib Hydrochloride. Erlotinib HCL injectable microspheres were prepared by O/W emulsion solvent evaporation technique using polycaprolactone polymer. Erlotinib HCL microspheres were evaluated for particle size, in-vitro release, in-vivo study, FTIR, DSC, X-ray diffraction study. All formulations showed good encapsulation efficiency i.e. 51.2 % to 86.8%.Amount of polycaprolactone influenced the properties of encapsulation efficiency of different formulations. The optimised formulation containing drug and polycaprolactone polymer showed the best results with 86.8 % drug entrapment efficiency and 95.23% sustained drug release at the end of 48 hrs. Polyvinyl alcohol acts as good emulsifying agent.Polycaprolactone based injectable microspheres of Erlotinib Hcl can be effectively used for target specificity and sustained drug release for extended period of time in treatment of different types of organ specific cancers like non-small cell lung cancer, pancreatic cancer, neck cancer etc.

Keyword: emulsion solvent extraction, Injectable microsphere, Target specific delivery, Erlotinib, Polycaprolactone, polyvinyl alcohol.

DOI: https://doi.org/10.31838/ijpr/2020.12.03.134

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Case Reports BMJ Case Rep. 2020 Jul 5;13(7):e234985. doi: 10.1136/bcr-2020-234985.

Sinonasal inverted schneiderian papilloma presenting as a large intraoral lesion

Kumar Nilesh [1], Srijon Mukherji [2], Sujata R Kanetkar [3], Aaditee Vande [4]

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Abstract

Sinonasal inverted schneiderian papilloma (ISP) is a rare tumour, which almost exclusively arises from the mucosa lining, the nasal cavity and the paranasal sinuses. The tumour in its early stages presents as an asymptomatic mass, which may be discovered during routine examination. Large lesions usually measure a few millimetres to centimetres in size and show symptoms such as nasal blockade, recurrent sinusitis, postnasal drip, anosmia, epistaxis, facial pain and headache. Lesion presenting as a large oral mass is extremely rare and may cause diagnostic dilemma, resulting in misdiagnosis. This report describes a rare case of ISP presenting as large intraoral lesion, with wide area of facial skeletal involvement. Diagnosis and management of the pathology has also been highlighted.

Keywords: dentistry and oral medicine; head and neck surgery; surgery.

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Case Reports BMJ Case Rep. 2020 Sep 8;13(9):e236582. doi: 10.1136/bcr-2020-236582.

Unusually large radicular cyst presenting in the maxillary sinus

Kumar Nilesh [1], Anuj Dadhich [2]

Affiliations

PMID: 32907869 PMCID: PMC7481090 (available on 2022-09-08) DOI: 10.1136/bcr-2020-236582

No abstract available

Keywords: dentistry and oral medicine; ear; nose and throat/otolaryngology; oral and maxillofacial surgery.

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EVALUATION OF PHOTOCATALYTIC DYE DEGRADATION EFFICACY OF ZNO NANOPARTICLES SYNTHESIZED BY SOL-GEL METHOD AT DIFFERENT CALCINATION TEMPERATURES

KAVITHAYENI V.[1], AKASH PRABHU S.[1], PRAKASH V.[2], RABINDER HENRY[3] AND JAYANT PAWAR[3]*

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ABSTRACT

Sol-Gel method assisted synthesis of Zinc Oxide Nanoparticles (ZnO NPs) achieved by change in reaction time and calcination temperature. 0.1 M Zinc Acetate and 0.2 M Sodium Hydroxide used as metal precursor and reducing agent, respectively. Spectroscopic and microscopic characterization carried out for ZnO nanomaterials to analyse the optical and morphological properties of the materials. The λ_{max} for all the ZnO NPs treated at different calcination temperature was found to be in the range of 325 – 398 nm and that of the band gap calculated for same was in the range of 3.81- 3.12 eV. The structural and morphological analysis reveals formation of agglomerated bunches of nanoparticles of ZnO having size ranges from 50- 80 nm. Further, ZnO NPs in the concentration of 1 mg/mL found effective photocatalytic nanomaterial for degradation of crystal violet under UV and visible light at seven hours of incubation. The dye degradation efficiency of ZnO NPs reported to change with respect to change in pre- and post-synthesis parameters like reaction time and calcination temperature.

KEY WORDS : Sol-gel synthesis, ZnO nanoparticles, Crystal violet, Photocatalytic dye degradation, Calcinations

INTRODUCTION

The industries like textiles, paint, paper and pharmaceuticals use natural as well as synthetic dyes like azo, disperse, fast colour, ingrain, napthols, vat, reactive pigment emulsion, crystal violet, triphenylmethyl (trityl), indigoid, sulphur dyes, phthalocyananine and anthroquinone derivatives etc. in manufacturing process (Forgacs *et al.*, 2004; Confortin *et al.*, 2010). The considerable amount of various types of dyes discharged through industrial effluents pose major environmental issues at assorted level in ecosystem, which can cause irrevocable ecological effects in future. More than 7 million tons of dyes are produced per year, out of which 15 % of the non-biodegradable dyes becomes a part of effluent generated during dyeing process in textile industry, which contributes 17-20 % of water pollution in the environment (Ajmal *et al.*, 2014; Karimi *et al.*, 2014). For instance, textile dyeing and finishing industry has become a second largest cause of water pollution by contributing more than 3600 textile dyes and 8000 chemicals in various processes of textile manufacture including dyeing and printing (Kant, 2012). Use of synthetic dyes that primarily contains sulphur, naphthol, vat dyes, nitrates, acetic acid and heavy metals makes industrial effluents highly toxic for all living forms (Kant, 2012). Moreover, other organic waste in water may react with dyes and form carcinogenic, mutagenic and allergic compounds, turbidity with colloidal matter and oil scums that makes water undesirable for

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पेटेंट सं. / Patent No.	:	335466
आवेदन सं. / Application No.	:	2796/MUM/2013
फाइल करने की तारीख / Date of Filing	:	28/08/2013
पेटेंटी / Patentee	:	KRISHNA INSTITUTE OF MEDICAL SCIENCES

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित SPINAL AND EPIDURAL ANAESTHESIA SIMULATOR नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 28th day of August 2013 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled SPINAL AND EPIDURAL ANAESTHESIA SIMULATOR as disclosed in the above mentioned application for the term of 20 years from the 28th day of August 2013 in accordance with the provisions of the Patents Act,1970.

THE PATENT OFFICE GOVT.OF INDIA

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Date of Grant : 20/03/2020

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ई मेल/ Email: mumbai-patent@nic.in
वेबसाइट/Website:http://ipindia.nic.in

सं. \ No. 2796/MUM/2013

दिनांक \ Dated the 20/03/2020

सेवा मे, \ To :

Address of Service:- Suneet Baliram Sabale Brainiac IP Solutions B-1, Bhagvadgeeta Apartments, Manikbaug, Opp. Manikbaug Petrol Pump, Sinhgad Road, Pune - 411051 MH. India
Email Id:- patent@brainiac.co.in,advgnbhave@gmail.com,contact@brainiac.co.in

विषय :- पेटेंट आवेदन संख्या 2796/MUM/2013 के संबंध मे अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर मे प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 2796/MUM/2013

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व 10/02/2020 को हुई सुनवाई] के उपरांत एतद्द्वारा पेटेंट अनुदान किया जाता है तथा पेटेंट अनुदान की प्रविष्टि 20/03/2020 को पेटेंट रजिस्टर मे कर दी गयी है।
This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on 10/02/2020] a patent is hereby granted and recorded in the Register of Patents on the 20/03/2020. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	:	335466
आवेदक का नाम \ Name Of Applicant	:	KRISHNA INSTITUTE OF MEDICAL SCIENCES
पेटेंट दिनांक \ Date of Patent	:	28/08/2013
पूर्विक्ता तिथि \ Priority Date	:	28/08/2013
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filling date of Request for examination	:	28/08/2013
शीर्षक \ Title	:	SPINAL AND EPIDURAL ANAESTHESIA SIMULATOR
दावों की संख्या \ Number of claims	:	1 TO 6

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल मे किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय मे नवीकरण शुल्क जमा किया जाना चाहिए।
The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act,1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Aiswarya P N
(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वैबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।
For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in
2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

FORM 1 THE PATENTS ACT 1970 (39 of 1970) & The Patents Rules, 2003 **APPLICATION FOR GRANT OF PATENT** (See section 7, 54&135 and rule 20(1))	(FOR OFFICE USE ONLY) Application No: Filing Date: Amount of Fee Paid CBR No: Signature

1. APPLICANT

Name	Nationality	Address
KRISHNA INSTITUTE OF MEDICAL SCIENCES	Deemed to be University declared U/s 3 of UGC Act, 1956 vide notification no. F.9-15/2001-U-3 of the Ministry of Human Resources Development, Govt. Of India.	KRISHNA INSTITUTE OF MEDICAL SCIENCES NEAR DHEBEWADI ROAD, MALKAPUR, KARAD, 415110, MAHARASHTRA, INDIA.

2. INVENTOR

Name	Nationality	Address
1. Dr. A. V. Nadkarni	Indian	Professor, Dept. of Anaesthesiology, Krishna Hospital and MRC, KIMSDU, Karad.
2. Dr. V. K. Dhulkhed	Indian	Professor and Head, Dept. of Anaesthesiology, Krishna Hospital and MRC, KIMSDU, Karad.
3. Dr. Shilpa Shenai	Indian	Ex. Resident Anaesthetist, Dept. of Anaesthesiology, Krishna Hospital and MRC, KIMSDU, Karad.
4. Dr. Shraddha Naik	Indian	Assistant Professor, Dept. of Anaesthesiology, Krishna Hospital and MRC, KIMSDU, Karad.
5. Dr. Amit Kadam	Indian	Resident Anaesthetist, Krishna Hospital and MRC, Karad.

3. TITLE OF THE INVENTION: -

SPINAL AND EPIDURAL ANAESTHESIA SIMULATOR

4. ADDRESS FOR CORRESPONDENCE OF APPLICANT IN INDIA Mrs. Gauri N. Bhave	Telephone no. 020 24221047 Fax No. Mobile no. 9422565625

Patent Agent IN/PA 520, "Chhaya", Plot No. 42, Sangam Society, Padmavati, Pune- Satara Road, Pune 411037. Maharashtra India	Email. advgnbhave@rediffmail.com advgnbhave@gmail.com

5. PRIORITY PARTICULARS OF THE APPLICATION (S) FILED IN THE CONVENTION COUNTRY:

Country	App. No	Filing Date	Name of the Applicant	Title of the invention
NA	NA	NA	NA	NA

6. PARTICULARS FOR FILING PATENT COOPERATION TREATY NATIONAL PHASE:

International Application Number	International filing date as allotted by the Receiving Office
NA	NA

7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) application no.	Date of filing of Original (first) application
NA	NA

8. PARTCULARS FOR FILING PATENT OF ADDITION

Main application/patent no.	Date of filing of main application
NA	NA

9. DECLARATIONS:

(i) Declaration by the inventors:
We, the above named inventors are the true & first inventors for this invention and declare that the applicant herein is our assignee or legal representative

(a) Date: 06-06-2013.
(b) Signature:
(c) Name: Dr. A. V. Nadkarni

(a) Date:
(b) Signature:
(c) Name: Dr. V. K. Dhulkhed

(a) Date: 6-6-13
(b) Signature:
(c) Name: Dr. Shilpa Shenai

(a) Date: 6/6/13
(b) Signature:
(c) Name: Dr. Shraddha Naik

(a) Date: 6/6/13
(b) Signature:
(c) Name: Dr. Amit Kadam

(ii)Declaration by the applicant in the convention country:
I, the applicants in the convention country declare the applicant herein is my assignee or legal representative

(a) Date:
(b) Signature:
(c) Name of the signatory:

(iii) Declaration by the applicants:

I/ We, the applicant(s) hereby declare that:-

(a) I'm in possession of the above mentioned invention.
(b) The complete specification relation to the invention is filled with this application.
(c) The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by us before the grant of patent to me.
(d) There is no lawful ground of objection to grant of patent to me.
(e) I'm the assignee or legal representative of true & first inventor.
(f) The application or each of the applications, particulars of which are given in para 5 was the first application in convention country/countries in respect of our invention.
(g) I claim the priority from the above mentioned applications filed in convention countries and state that no application for protection in respect of invention had been made in a convention country before that date by us or by any person from which I derive the title
(h) My application in India is based on International Application under Patent Cooperation Treaty (PCT) as mentioned in para 6
(i) The application is divided out of my application particulars of which are given in para 7 & pray that this application may be treated as deemed to have been filed on ___under section 16 of the Act.
(j) The said invention is in improvement or modification of the invention particulars of which are given in para 8.

10. Following are the attachments with the application:

(a) Complete Specification
(b) Complete Specification (2 copies), No. of pages 7, No. of claims 1
(c) Drawings (2 copies), No. of sheets 5
(d) Statement and undertaking on Form 3

(e) Declaration as to Inventorship on Form 5
(f) Power of authority
(g) Fee Rs. 4000/- (in words rupees four thousand only)

I hereby declare that to my knowledge, information and belief the matters stated herein are correct and I request that a patent may be granted to me for the said invention.

Dated this 6th day of June, 2013.

For KRISHNA INSTITUTE OF MEDICAL SCIENCES

REGISTRAR
KRISHNA INSTITUTE OF MEDICAL SCIENCES
UNIVERSITY
KARAD

To
The Controller of Patents
The Patent Office
At Mumbai 400 037

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

सत्यमेव जयते

क्रमांक : 022110737
SL No :

भारत सरकार
GOVERNMENT OF INDIA
पेटेंट कार्यालय
THE PATENT OFFICE

पेटेंट प्रमाणपत्र
PATENT CERTIFICATE
(Rule 74 Of The Patents Rules)

पेटेंट सं. / Patent No.	:	351908
आवेदन सं. / Application No.	:	202021016991
फाइल करने की तारीख / Date of Filing	:	20/04/2020
पेटेंटी / Patentee	:	JAYANT RAJARAM PAWAR

प्रमाणित किया जाता है कि पेटेंटी को उपरोक्त आवेदन में यथाप्रकटित "A PACKAGING COMPOSITE AND THE PROCESS FOR PREPARING SUCH COMPOSITE" नामक आविष्कार के लिए, पेटेंट अधिनियम, १९७० के उपबंधों के अनुसार आज तारीख 20th day of April 2020 से बीस वर्ष की अवधि के लिए पेटेंट अनुदत्त किया गया है।

It is hereby certified that a patent has been granted to the patentee for an invention entitled "A PACKAGING COMPOSITE AND THE PROCESS FOR PREPARING SUCH COMPOSITE" as disclosed in the above mentioned application for the term of 20 years from the 20th day of April 2020 in accordance with the provisions of the Patents Act,1970.

THE PATENT OFFICE GOVT.OF INDIA

अनुदान की तारीख :
Date of Grant : 23/11/2020

पेटेंट नियंत्रक
Controller of Patent

टिप्पणी - इस पेटेंट के नवीकरण के लिए फीस, यदि इसे बनाए रखा जाना है, 20th day of April 2022 को और उसके पश्चात प्रत्येक वर्ष में उसी दिन देय होगी।
Note. - The fees for renewal of this patent, if it is to be maintained will fall / has fallen due on 20th day of April 2022 and on the same day in every year thereafter.

INTELLECTUAL PROPERTY INDIA
पेटेन्ट/PATENTS| डिजाइन/DESIGNS|
व्यापार चिह्न/TRADE MARKS| भौगोलिक उपदर्शन/GEOGRAPHICAL INDICATIONS

भारत सरकार
GOVERNMENT OF INDIA

एकस्व कार्यालय /THE PATENT OFFICE
बौद्धिक सम्पदा भवन/ I.P.O. BUILDING
एंटॉप हिल/Antop Hill,
एस.एम.रोड/ S.M.Road,
मुंबई/ Mumbai- 400037
दूरभाष /Tel. No.: (091)(022)24153651
फैक्स/ Fax: 022-24130387
ई मेल/ Email: mumbai-patent@nic.in
वेबसाइट /Website:http://ipindia.nic.in

सं. \ No. 202021016991

दिनांक \ Dated the 23/11/2020

सेवा मे, \ To :

Address of Service:- Lex-Regia 246, Gandhi Nagar, Nagpur-440 010 Maharashtra, India
Email Id:- mailbox@lexregia.in,royak777@gmail.com

विषय :- पेटेंट आवेदन संख्या 202021016991 के संबंध मे अधिनियम की धारा 43 के तहत पेटेंट अनुदान तथा पेटेंट रजिस्टर मे प्रविष्टि की सूचना
Sub :- Intimation of the grant and recordal of patent under section 43 of the Act in respect of patent application no. 202021016991

महोदय/महोदया,
Sir/Madam,

आपको सूचित किया जाता है कि पेटेंट अधिनियम, 1970 की धारा 12 व 13 तथा उस आधार पर बने नियम के तहत उपर्युक्त पेटेंट आवेदन के परीक्षण [व -------- को हुई सुनवाई] के उपरांत एतद्द्वारा पेटेंट अनुदान किया जाता है तथा पेटेंट अनुदान की प्रविष्टि 23/11/2020 को पेटेंट रजिस्टर मे कर दी गयी है।

This is to Inform you that following the examination of above mentioned patent application under section 12 and 13 of The Patents Act, 1970 and Rules made thereunder [and hearing held on ------] a patent is hereby granted and recorded in the Register of Patents on the 23/11/2020. The Patent Certificate is enclosed herewith.

पेटेंट संख्या \ Patent No	: 351908
आवेदक का नाम \ Name Of Applicant	: JAYANT RAJARAM PAWAR
पेटेंट दिनांक \ Date of Patent	: 20/04/2020
पूर्विक्ता तिथि \ Priority Date	: 20/04/2020
परीक्षण हेतु अनुरोध दाखिल करने की तिथि \ Filling date of Request for examination	: 28/07/2020
शीर्षक \ Title	: "A PACKAGING COMPOSITE AND THE PROCESS FOR PREPARING SUCH COMPOSITE"
दावों की संख्या \ Number of claims	: 09

उपर्युक्त पेटेंट के अनुदान का प्रकाशन अधिनियम की धारा 43 के तहत पेटेंट कार्यालय के आधिकारिक जर्नल मे किया जाएगा।
The grant of above mentioned patent will be published in the Official Journal of the patent Office under section 43 of the Act.

पेटेंट अधिनियम 1970 यथा संशोधित पेटेंट (संशोधन) नियम, 2005/ पेटेंट नियम, 2003 यथा संशोधित पेटेंट (संशोधन) नियम, 2016 की धारा 142 की उप-धारा (4) के प्रावधानों के तहत उपरोक्त प्रविष्टि की तिथि से 3 माह के भीतर इस कार्यालय मे नवीकरण शुल्क जमा किया जाना चाहिए।
The payment of renewal fee is required to be made at this office within three(3) months from the aforesaid date of recording according to the proviso in sub-section(4) of Section 142 of The Patents Act,1970, as amended by The Patents (Amendment) Act, 2005 / The Patents Rules, 2003 as amended by The Patents (Amendment) Rules, 2016.

Bommineni Ramamuni
(नियंत्रक पेटेंट)
Controller of Patents

टिप्पणी / Note :

1. संशोधित नवीकरण शुल्क हेतु कृपया महानियंत्रक पेटेंट, अभिकल्प एवं व्यापार चिह्न की आधिकारिक वैबसाइट www.ipindia.gov.in पर उपलब्ध पेटेंट (संशोधन) नियम 2016 की प्रथम अनुसूची (शुल्क) देखें।
For revised renewal fees kindly refer to the First Schedule (fees) of The Patents (Amendment) Rules 2016 available on the official website of Controller General of Patents, Designs and Trade Marks www.ipindia.gov.in
2. कार्यालय द्वारा पेटेंट प्रमाणपत्र की कोई भी कागजी प्रति अलग से जारी नहीं की जाएगी।
No hard copy of Patent Certificate shall be issued separately by the office.

FORM 1
THE PATENTS ACT, 1970
(39 of 1970)
&
THE PATENTS RULES, 2003
APPLICATION FOR GRANT OF PATENT
[See sections 7,54 & 135 and rule 20(1)]

(FOR OFFICE USE ONLY)

Application No.: .....
Filing Date: .....
Amount of Fee Paid: .....
CBR No.: .....
Signature: .....

1. APPLICANT(S):

Sr.No.	Name	Nationality	Address	Country	State
1	JAYANT RAJARAM PAWAR	India	Krishna Institute of Medical Sciences, Near Dhebewadi Road, Malkapur, Karad, Pin code- 415110, Maharashtra, India	India	Maharashtra

2. INVENTOR(S):

Sr.No.	Name	Nationality	Address	Country	State
1	JAYANT RAJARAM PAWAR	India	Krishna Institute of Medical Sciences, Near Dhebewadi Road, Malkapur, Karad, Pin code- 415110, Maharashtra, India	India	Maharashtra
2	ROHIT GHUGARE	India	Rajiv Gandhi Institute of IT & Biotechnology, Bharati Vidyapeeth University, Katraj , Pune-411046, Maharashtra, India.	India	Maharashtra
3	E.A. SINGH	India	Rajiv Gandhi Institute of IT	India	Maharashtra

			& Biotechnology, Bharati Vidyapeeth University, Katraj , Pune-411046, Maharashtra, India.		

3. TITLE OF THE INVENTION: "A PACKAGING COMPOSITE AND THE PROCESS FOR PREPARING SUCH COMPOSITE"

4. ADDRESS FOR CORRESPONDENCE OF APPLICANT / AUTHORISED PATENT AGENT IN INDIA:
Lex-Regia 246, Gandhi Nagar, Nagpur-440 010 Maharashtra, India

Telephone No.:
Fax No.:
Mobile No: .....
E-mail: mailbox@lexregia.in

5. PRIORITY PARTICULARS OF THE APPLICATION(S) FILED IN CONVENTION COUNTRY:

Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Tilte of the Invention

6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) Application Number	Date of Filing of Original (first) Application

8. PARTICULARS FOR FILING PATENT OF ADDITION:

Main Application / Patent Number:	Date of Filing of Main Application

9. DECLARATIONS:

(i) Declaration by the inventor(s)

I/We ,JAYANT RAJARAM PAWAR,ROHIT GHUGARE,E.A. SINGH , is/are the true & first inventor (s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: ------

(b) Signature(s) of the inventor(s): .....

(c) Name(s): JAYANT RAJARAM PAWAR,ROHIT GHUGARE,E.A. SINGH

(ii) Declaration by the applicant(s) in the convention country

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: JAYANT RAJARAM PAWAR

(iii) Declaration by the applicant(s)

- **The Complete specification relationg to the invention is filed with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

Sr.	Document Description	FileName

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters stated hering are correct and I/We request that a patent may be granted to me/us for the said invention.

Dated this(Final Payment Date): ----------

Signature: .....

Name: ARGHYA ASHIS ROY

To The Controller of Patents

The Patent office at MUMBAI

This form is electronically generated.

E-101 | 4260 | 2020

FORM 1 **THE PATENTS ACT, 1970 (39 of 1970)** **&** **The Patents Rules, 2003** **APPLICATION FOR GRANT OF PATENT** *[See section 7,54 & 135 and rule 20(1)]*	**(FOR OFFICE USE ONLY)** Application No.: Filing Date: Amount of Fees Paid: CBR No: Signature:
1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)	

200296228

2. TYPE OF APPLICATION

Ordinary (√)		Convention ( )		PCT-NP ( )	
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )

3A. APPLICANT(S)

NAME	NATIONALITY	COUNTRY OF RESIDENCE	ADDRESS
The Registrar **Krishna Institute of Medical Sciences** **"Deemed To Be University", Karad**	**Indian**	**Indian**	Krishna Institute of Medical Sciences "Deemed To Be University", Karad-415110, Maharashtra, India.

3B. CATEGORY OF APPLICANT

Natural Person ()	Other than Natural Person		
	Small Entity ()	Startup ()	Others (√)

4. INVENTOR(S)

Are all the inventor(s) same as the applicant(s) named above?	Yes ( )		No (√)
NAME	NATIONALITY	COUNTRY OF RESIDENCE	ADDRESS
Dr. Jayant Rajaram Pawar	IN	IN	Krishna Institute of Medical Sciences "Deemed To Be University", Karad-415110, Maharashtra, India.
Dr. Manish Shinde	IN	IN	Centre for Matcrials for Electronics Technology (C-MET), Panchawati Rd, Mansarovar, Pashan, Pune, Maharashtra 411008 Maharashtra, India.
Mr. Amit Patwardhan	IN	IN	Blue Bells, C-11, Sr/No 127/1, Wakad, Pune-411057, Maharashtra, India
Dr. Sudha Mattigatti	IN	IN	Krishna Institute of Medical Sciences "Deemed To Be University", Karad-415110, Maharashtra, India.
Dr. Rabinder Henry	IN	IN	BlueRidge, Flat No-0403,B-4, Rajiv Gandhi Infotech Park, Phase 1 Hinjawadi, Pune-411057, Maharashtra, India..

5. TITLE OF THE INVENTION:

FABRICATION OF MOISTURE SENSITIVE RESISTANCE BASED NANOCOMPOSITE (SEMICONDUCTOR NPS/AGAR) CHEMICAL NANOSENSOR

AUTHORIZED REGISTERED PATENT AGENT	IN/PA No.	2542
	Name	Kumari Lipi
	Mobile No.	8377041992
	IN/PA No.	
	Name	
	Address	

7. ADDRESS FOR SERVICE OF APPLICANT IN INDIA	Name	**AKHILDEV IPR SUPPORT AND RESEARCH SERVICES LLP**
	Postal Address	A3-121, Himsagar Apartment, Bro Housing Society, P4, Greater Noida-201310, INDIA, Plot No - CD 48, Ansal Golf Link - 1, Near Pari Chowk, Greater Noida-201308
	Telephone No.	0120-4174825
	Mobile No.	8377041992,**7903467153**
	Fax No.	
	E-mail ID	admin@iprsrg.com lipi.kaundilya@gmail.com

8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION

Country	Application No.	Filing Date	Name of Applicant	Title of Invention	IPC (as classified in the convention country)
-	-	-	-	-	-

9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)

International Application No.	International filing date as allotted by the receiving office
Nil	Nil

10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL (FIRST) APPLICATION

Original (First) Application No.	Date of filing of Original (First) Application
Nil	Nil

11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT

Main Application/Patent No.	Date of filing of Main Application
Nil	Nil

4. DECLARATIONS

(i) .Declarations by Inventor(s)

We, the above named inventor(s) is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

Date

Name	Signature
1. Dr. Jayant Rajaram Pawar,	
2. Dr. Manish Shinde,	
3. Mr. Amit Patwardhan,	
4. Dr. Sudha Mattigatti,	
5. Dr. Rabinder Henry	

(ii) Declaration by the Applicant(s) in the convention country

We, the Applicant(s) in the convention country declare that the applicant (d) herein is/are my/our assignee or legal representative.

Date:

Signature:

Name(s)

(iii) Declaration by the Applicant(s)

I/We hereby declare(s) that

- ✓ We are in possession of the above mentioned invention.
- ✓ Complete Specification relating to the invention is filed with this application.
- ☒ The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by me/us before the grant of patent to me/us.
- ✓ There is no lawful ground of objection to the grant of patent to me/us.
- ✓ We are the assignee or legal representative of true & first Inventors.
- ☒ The application or each of applications, particulars of which are given in para 5 was the first application in convention country / countries in respect of my/our invention.
- ☒ We claim priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention has been made in a convention country before that date by me/us or by any person from which I/We derive the title.
- ☒ Our application is based on International application under Patent Cooperation Treaty as mentioned in para 6.
- ☒ The application is divided out of my/our application particulars of which are given in para -7 and pray that this application may be treated as deemed to have been filed on N/A under section 16 of the Act.

☒ The said invention is an improvement in or modification of the invention particulars of which are given in para 8.

13. Following are the attachments with the application: (General Requirements)

a. Form 1
b. Form 2 (Complete)

Item	**Details**	**Fee**	**Remarks**
Complete specification	No. of pages:		
No. of Claim(s)	No. of claims: and No. of pages:		
Abstract	No. of pages:		
No. of Drawing(s)	No. of Drawings: and No. of pages:		

C.

I/We declare that to the best of my/our knowledge, information and belief the fact and matters stated herein are correct and I/We request that a patent may be granted to me/us for the said invention.

Dated this: February 18, 2020

Signature: To be digitally signed by
Dr. Kumari Lipi

KUMARI LIPI [IN/PA-2542]
AGENT FOR THE APPLICANT
AKHILDEV IPR AND RESEARCH SERVICES LLP

The Controller of Patents
The Patent Office at New Delhi, Chennai, Kolkata, Mumbai

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GOVERNMENT OF INDIA

Controller General of Patents,Designs and Trademarks
Department of Industrial Policy and Promotion
Ministry of Commerce and Industry

Application Details

APPLICATION NUMBER	202021024684
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	12/06/2020
APPLICANT NAME	JAYANT RAJARAM PAWAR
TITLE OF INVENTION	"A METHOD FOR DEPOSITING LAYER OF ZINC OXIDE NANOPARTICLES OVER A SUBSTRATE OF HYGROSCOPIC MATERIAL AS A DIELECTRIC SUBSTRATE AND A SENSOR CONTAINING THE SUBSTRATE FOR DETECTING MOISTURE"
FIELD OF INVENTION	CHEMICAL
E-MAIL (As Per Record)	mailbox@lexregia.in
ADDITIONAL-EMAIL (As Per Record)	royak777@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	15/08/2020
PUBLICATION DATE (U/S 11A)	10/07/2020

Application Status

View Documents

FORM 1 THE PATENTS ACT, 1970 (39 of 1970) & THE PATENTS RULES, 2003 APPLICATION FOR GRANT OF PATENT [See sections 7,54 & 135 and rule 20(1)]	(FOR OFFICE USE ONLY) Application No.: ..... Filing Date: ..... Amount of Fee Paid: ..... CBR No.: ..... Signature: .....

1. APPLICANT(S):

Sr.No.	Name	Nationality	Address	Country	State
1	JAYANT RAJARAM PAWAR	India	Krishna Institute of Medical Sciences, Near Dhebewadi Road, Malkapur, Karad, Pin code- 415110, Maharashtra, India	India	Maharashtra

2. INVENTOR(S):

Sr.No.	Name	Nationality	Address	Country	State
1	JAYANT RAJARAM PAWAR	India	Krishna Institute of Medical Sciences, Near Dhebewadi Road, Malkapur, Karad, Pin code- 415110, Maharashtra, India	India	Maharashtra
2	MANISH SHINDE	India	Centre for Materials for Electronics Technology (C-MET), Panchawati Road, Mansarovar, Pashan, Pune-411008, Maharashtra, India.	India	Maharashtra
3		India		India	Maharashtra

	AMIT PATWARDHAN		Blue Bells, C-11, Sr/No 127/1, Wakad, Pune-411057, Maharashtra, India		
4	E.A. SINGH	India	Rajiv Gandhi Institute of IT & Biotechnology, Bharati Vidyapeeth University, Katraj, Pune-411046, Maharashtra, India.	India	Maharashtra
5	RABINDER HENRY	India	Blue Ridge, Flat No-0403,B-4, Rajiv Gandhi Infotech Park, Phase 1 Hinjawadi, Pune-411057, Maharashtra, India.	India	Maharashtra

3. TITLE OF THE INVENTION: "A METHOD FOR DEPOSITING LAYER OF ZINC OXIDE NANOPARTICLES OVER A SUBSTRATE OF HYGROSCOPIC MATERIAL AS A DIELECTRIC SUBSTRATE AND A SENSOR CONTAINING THE SUBSTRATE FOR DETECTING MOISTURE"

4. ADDRESS FOR CORRESPONDENCE OF APPLICANT / AUTHORISED PATENT AGENT IN INDIA:
Lex-Regia 246, Gandhi Nagar, Nagpur-440 010 Maharashtra, India

Telephone No.:
Fax No.:
Mobile No: .....
E-mail: mailbox@lexregia.in

5. PRIORITY PARTICULARS OF THE APPLICATION(S) FILED IN CONVENTION COUNTRY:

Sr.No.	Country	Application Number	Filing Date	Name of the Applicant	Tilte of the Invention

6. PARTICULARS FOR FILING PATENT COOPERATION TREATY (PCT) NATIONAL PHASE APPLICATION:

International Application Number	International Filing Date as Allotted by the Receiving Office
PCT//	

7. PARTICULARS FOR FILING DIVISIONAL APPLICATION

Original (first) Application Number	Date of Filing of Original (first) Application

8. PARTICULARS FOR FILING PATENT OF ADDITION:

Main Application / Patent Number:	Date of Filing of Main Application

9. DECLARATIONS:

(i) Declaration by the inventor(s)

I/We ,JAYANT RAJARAM PAWAR,MANISH SHINDE,AMIT PATWARDHAN,E.A. SINGH ,RABINDER HENRY, is/are the true & first inventor(s) for this invention and declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) of the inventor(s): .....

(c) Name(s): JAYANT RAJARAM PAWAR,MANISH SHINDE,AMIT PATWARDHAN,E.A. SINGH ,RABINDER HENRY

(ii) Declaration by the applicant(s) in the convention country

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a) Date: -----

(b) Signature(s) : .....

(c) Name(s) of the singnatory: JAYANT RAJARAM PAWAR

(iii) Declaration by the applicant(s)

- **The Complete specification relationg to the invention is tiled with this application.**
- **I am/We are, in the possession of the above mentioned invention.**
- **There is no lawful ground of objection to the grant of the Patent to me/us.**

10. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION:

Sr.	Document Description	FileName

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters stated hering are correct and I/We request that a patent may be granted to me/us for the said invention.

Dated this(Final Payment Date): ----------

Signature: .....

Name: ARGHYA ASHIS ROY

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The Patent office at MUMBAI

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Government of India

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Extracts from the Register of Copyrights

Dated : 13/02/2020

1.	Registration Number	: L-89476/2020
2.	Name, address and nationality of the applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN
3.	Nature of the applicant's interest in the copyright of the work	: OWNER
4.	Class and description of the work	: LITERARY/ DRAMATIC WORK
5.	Title of the work	: PROCESS WITH STANDARDIZED FLOW CHART FOR ISOLATION OF GLYCYRRHETINIC ACID FROM LIQUORICE
6.	Language of the work	: ENGLISH
7.	Name, address and nationality of the author and if the author is deceased, date of his decease	: MR. NIRANJAN D. CHIVATE , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN MRS. SHUBHANGI A. PATIL , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN DR. KIRAN A. WADKAR , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN
8.	Whether the work is published or unpublished	: UNPUBLISHED
9.	Year and country of first publication and name, address and nationality of the publisher	: N.A.
10.	Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	: N.A.
11.	Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each, together with particulars of assignments and licences, if any	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN
12.	Names, addresses and nationalities of other persons, if any, authorised to assign or licence of rights comprising the copyright	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , NH4, PUNE - BANGALORE HIGHWAY, DIST.SATARA, AGASHIVNAGAR, MALKAPUR, MAHARASHTRA-415539 INDIAN
13.	If the work is an 'Artistic work', the location of the original work, including name, address and nationality of the person in possession of the work. (In the case of an architectural work, the year of completion of the work should also be shown).	: N.A.
14.	If the work is an 'Artistic work' which is used or capable of being used in relation to any goods or services, the application should include ...cation from the Registrar of Trade Marks in terms of the ... Section (i) of Section 45 of the Copyright Act,	: N.A.
15.	... work', whether it is registered under the ... give details.	: N.A.
16.	... work', capable of being registered as a ... Act 2000,whether it has been applied to an ...trial process and ,if yes ,the number of times ...	: N.A.
17.	Remarks, if any	:

DEPUTY REGISTRAR OF COPYRIGHTS

Diary Number : 18923/2019-CO/L

Date of Application : 27/11/2019

Date of Receipt : 27/11/2019

Copyright Office
Government of India

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Extracts from the Register of Copyrights

Dated : 13/08/2020

1.	Registration Number	: L-93493/2020
2.	Name, address and nationality of the applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
3.	Nature of the applicant's interest in the copyright of the work	: OWNER
4.	Class and description of the work	: LITERARY/DRAMATIC WORK THIS WORK RELATES TO NUTRITION IN PARTICULAR TO NOVEL DIETARY SUBSTITUTE FOR ANIMAL MILK AND EASY TO DIGEST PRECOOKED MIXTURE FOR COMPLEMENTARY FEEDS.
5.	Title of the work	: VEGETARIAN MAGIC MIX: SUBSTITUTE FOR ANIMAL MILK
6.	Language of the work	: ENGLISH
7.	Name, address and nationality of the author and if the author is deceased, date of his decease	: DR. ASHA KRISHNA PRATINIDHI , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN MR. ANUP SUBHASH HENDRE , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. SHILPA ADITYA PRATINIDHI , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. VINAYAK YADAVRAO KSHIRSAGAR , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. AJIT VASANTRAO SONTAKKE , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
8.	Whether the work is published or unpublished	: UNPUBLISHED
9.	Year and country of first publication and name, address and nationality of the publisher	: N.A.
10.	Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	: N.A.
11.	Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each owner with particulars of assignments and licences, if any	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
12.	[illegible] nationalities of other persons, if any, [illegible] licence of rights comprising the copyright	: N.A.
13.	[illegible] Artistic work', the location of the original work, [illegible] address and nationality of the person in possession of the [illegible] the case of an architectural work, the year of completion of the work should also be shown).	: N.A.
14.	If the work is an 'Artistic work' which is used or capable of being used in relation to any goods or services, the application should include a certification from the Registrar of Trade Marks in terms of the provision to Sub-Section (i) of Section 45 of the Copyright Act, 1957.	: N.A.

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Extracts from the Register of Copyrights

Dated : 13/08/2020

1.	Registration Number	: L-93492/2020
2.	Name, address and nationality of the applicant	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
3.	Nature of the applicant's interest in the copyright of the work	: OWNER
4.	Class and description of the work	: LITERARY/ DRAMATIC WORK THIS WORK IS IN THE FIELD OF BIOMEDICAL RESEARCH PARTICULARLY IN THE FIELD OF FOOD AND NUTRITION.
5.	Title of the work	: DIET SURVEY KIT FOR FAMILY DIET SURVEY OF UNCOOKED FOOD
6.	Language of the work	: ENGLISH
7.	Name, address and nationality of the author and if the author is deceased, date of his decease	: DR. ASHA KRISHNA PRATINIDHI , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN MR. ANUP SUBHASH HENDRE , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. SHILPA ADITYA PRATINIDHI , MAHARASHTRA INSTITUTE OF MEDICAL EDUCATION & RESEARCH, TALEGAON DABHADE PUNE, MAHARASHTRA, INDIA-410507 INDIAN DR. SATISH VASANT KAKADE , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN DR. AJIT VASANTRAO SONTAKKE , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
8.	Whether the work is published or unpublished	: UNPUBLISHED
9.	Year and country of first publication and name, address and nationality of the publisher	: N.A.
10.	Years and countries of subsequent publications, if any, and names, addresses and nationalities of the publishers	: N.A.
11.	Names, addresses and nationalities of the owners of various rights comprising the copyright in the work and the extent of rights held by each owner with particulars of assignments and licences, if any	: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD , KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MALKAPUR KARAD, DIST. SATARA, MAHARASHTRA, INDIA-415539 INDIAN
12.	...tionalities of other persons, if any, ...ence of rights comprising the copyright	: N.A.
13.	...tic work', the location of the original work, ...ress and nationality of the person in possession of the ... the case of an architectural work, the year of completion of the work should also be shown).	: N.A.
14.	If the work is an 'Artistic work' which is used or capable of being used in relation to any goods or services, the application should include a certification from the Registrar of Trade Marks in terms of the provision to Sub-Section (i) of Section 45 of the Copyright Act, 1957.	: N.A.

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Extracts from the Register of Copyrights

Dated : 29/09/2020

1.	Registration Number	: **L-95175/2020**
2.	Name, address and nationality of the applicant	: DR VEDPRAKASH MISHRA , PRO CHANCELLOR, DATTA MEGHE INSTITUTE OF MEDICAL SCIENCE DEEMED TO BE UNIVERSITY, SAWANGI MEGHE, WARDHA-442107 INDIAN DR LALITBHUSHAN WAGHMARE , PRO VICE CHANCELLOR, DATTA MEGHE INSTITUTE OF MEDICAL SCIENCE DEEMED TO BE UNIVERSITY, SAWANGI MEGHE, WARDHA-442107 INDIAN DR RAJIV BORLE , VICE CHANCELLOR, DATTA MEGHE INSTITUTE OF MEDICAL SCIENCE DEEMED TO BE UNIVERSITY, SAWANGI MEGHE, WARDHA-442107 INDIAN DR S P THYAGRAJAN , PROF OF EMINENCE, DEAN RESEARCH, SRI RAMACHANDRA INSTITUTE OF HIGHER EDUCATION AND RESEARCH DEEMED TO BE UNIVERSITY, CHENNAI-600116 INDIAN DR DILIP MHAISEKAR , VICE CHANCELLOR, MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK-422004 INDIAN DR MOHANAN KUNNUMMAL , VICE CHANCELLOR, KERALA UNIVERSITY OF HEALTH SCIENCES, THRISSUR, KERALA-680596 INDIAN DR O P KALRA , PT. BHAGWAT DAYAL SHARMA UNIVERSITY OF HEALTH SCIENCES, ROHTAK-124001 INDIAN DR NEELAM MISHRA , VICE CHANCELLOR, KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY, KARAD, MAHARASHTRA, INDIA-415539 INDIAN
3.	Nature of the applicant's interest in the copyright of the work	: AUTHOR
4.	Class and description of the work	: LITERARY/ DRAMATIC WORK
5.	Title of the work	: SEVEN PRONGED BLENDED LEARNING MODEL FOR INDIAN MEDICAL GRADUATE
6.	Language of the work	: ENGLISH

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CONFERENCE REPORT

INTERNATIONAL DIGITAL CONFERENCE

on

BENIGN JAW PATHOLOGIES

THEME: BACK TO BASICS

Presented by

DEPARTMENT OF ORAL AND MAXILLOFACIAL SURGERY, SDS KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY
Karad, Maharashtra

In association with:

GSR INSTITUTE OF CRANIOFACIAL AND FACIAL PLASTIC SURGERY, HYDERABAD

Date: 30th, 31st October and 1st November

Time: 5:00 pm to 7:30 pm IST

Online platform: ZOOM & YouTube

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Inauguration ceremony	2
Conference proceedings day 1	5
Conference proceedings day 2	8
PG prize paper presentations	10
Conference proceedings day 3	11
Valedictory function	15
Conference feedback report	19
Pre-post-test assessment report	20
Conference outcome report	21

CONFERENCE OBJECTIVES & SUMMARY

Department of Oral & Maxillofacial Surgery, School of Dental Sciences, KIMSDU, Karad in association with GSR institute of craniofacial and facial plastic surgery, Hyderabad successfully conducted an International Digital Conference on Benign Jaw Pathologies on 30th, 31st September and 1st November 2020**.** The Objectives of the International Digital Conference Included:

- In the current testing times of COVID19 and the subsequent restrictions on routine conduction of workshops, seminars, and conferences, the digital conference will provide a platform for eminent speakers, surgeons, radiologists, pathologists to interact and share knowledge with post graduate trainees, consultants, academicians and practitioners from India as well as across the globe.
- To discuss the pertinent findings, advances and experiences in field of diagnosis, and management of benign jaw pathologies, a topic which has not been very elaborately discussed, despite its important clinical impact in field of maxillofacial surgery.
- The digital conference should allow trainees / postgraduate students to present their findings as case series/ review/research at the international forum.
- To strengthen the existing MOU between KIMSDU and GSR institute, Hyderabad.
- To encourage future joint collaboration between participating institutes/universities and KIMSDU.

CONFERENCE SUMMARY

About 1000 registrations were received from all the states of India and from all over the globe. The link for the registration form for the conference was made available in 1st page of brochure which was circulated via emails and WhatsApp groups *(**annexure 1**: Conference brochure; **annexure 2**: Online registration form)*. The registration was free of charge and was open until 30th Oct 2020 (5 PM IST).

Over 80 post graduate papers from almost every state across the country and few international countries like Spain, France, Portugal, Sri Lanka, The Netherlands and Ethiopia were received. The guidelines for abstract along with audio-visual presentation were provided in the brochure and were accepted until 25th Oct 2020. All the PG papers were blinded and sent to external judges for judging *(**annexure 3**: judging sheet),* out of which 3 best papers were selected for the prize category. These papers were presented live on the 2nd day of the conference.

The Reputed national and international speakers, with established areas of excellence and expertise in field of Oral & Maxillofacial surgery and Radiodiagnosis were invited for delivering guest lectures and interactive Panel & case discussions. Four WhatsApp groups were created for the purpose of sharing links of the event, administering pre- and post-test questionnaire, gathering feedback from the delegates and solving conference related queries of the participants. The event was streamed live on YouTube and zoom app on 30th, 31st Oct and 1st Nov 2020 from 5:00 pm to 7:30 pm IST. With this enthusiasm and engaging participation, the 3 days academic feast on ‘benign jaw pathologies’ was begun.

INAUGURATION CEREMONY

The event was anchored by Dr. Payal Mate and Dr. Monica Patil. The inauguration ceremony was carried out with the welcome speeches addressed by honourable chancellor (KIMSDU) **Dr. Suresh Bhosle**, honourable vice-chancellor (KIMSDU) **Dr. Neelam Mishra** and dean (SDS, KIMSDU) **Dr. Shashikiran** N.D. Following this, the virtual lamp lightning ceremony was performed.

MESSAGE FROM HON'BLE CHANCELLOR, KIMSDU

Dr. Suresh Bhosale, Hon'ble Chancellor, KIMSDU addressing the Dignitaries, Speakers and Delegates of the conference

"A very good evening to one and all. On behalf of KIMSDU, I take this opportunity to welcome all the dignitaries, speakers and participants from India and across the globe to this International Digital Conference, hosted by Department of Oral and Maxillofacial Surgery, School of Dental Sciences in association with GSR institute, Hyderabad. This has been a challenging year and, in such times, it is wise to continue sharing knowledge on digital platform. KIMSDU believes in supporting and promoting overall academic growth of students and faculty with never ending zeal. We have hosted numerous regional and national conferences in the past. When Dr. Shashikiran proposed that Dept. of Oral and maxillofacial surgery wished to host an international conference, I was more than happy to extend my support. This conference will see various renowned international and national speakers deliberate on benign pathologies in the field of Oral and Maxillofacial surgery, over a period of 3 days. The conference has over 1000 registrations and we have received 90 PG paper presentations from all over India and worldwide including nations like Spain, France, Germany and Netherlands. I wish Dept. of Oral & Maxillofacial Surgery, SDS all the luck and success for this event. I once again welcome all the delegates and eminent speakers to this

International Digital Conference. I hope this event enlightens the young minds for greater endeavours".

MESSAGE FROM HON'BLE VICE-CHANCELLOR, KIMSDU

"A very good morning to everyone. It gives me immense pleasure to welcome all the delegates on this international digital platform. This year has taken an unforeseen turn in the form of a viral assail. While the world is healing from the brunt at its own pace, why don't we take the time to adapt ourselves to the changing phases. And what could be better than bringing together expert maxillofacial and head and neck surgeons from India and across the globe to discuss topics pertinent to the speciality. We at KIMSDU hope that surgeons, clinicians, academicians and trainees not just in Asia but all over the globe get to attend and experience a virtual knowledge fair over a period of 3 days. Facts and experiences shall be shared by eminent speakers that will enlighten the young minds. We at KIMSDU strongly believe in promoting the academic growth with all the necessary aids. Dr. Shashikiran N.D., Dean of SDS along with his team in the Department of oral and maxillofacial surgery have undertaken the task of arranging an international conference in such a short span of time keeping the limitations and relevance of digital platform in mind. The cause, plan and execution of this conference, I surely believe, will be one of a kind. I take this opportunity to welcome you all on behalf of KIMSDU and I wish best of luck for conducting this event"

Dr. Neelam Mishra, Vice-chancellor (KIMSDU) delivering the inauguration speech

MESSAGE FROM DEAN, SDS, KIMSDU

“A very good evening to one and all. Firstly, on behalf of School of Dental Sciences, Karad, I welcome you all to the International digital conference, 2020. I would like to thank all the delegates, eminent speakers and students for their huge participation and making this Conference a remarkable success. The organisers of the conference, Dr. Kumar Nilesh and his team from Dept. Oral and Maxillofacial Surgery deserve the most profound congratulations for the excellent organisation. Conducting any workshop or conference requires meticulous planning and efficient execution. An international digital conference like this one has helped in bringing all the clinicians, academicians and students together to share and learn the changing concepts and adapt to the new normal. Pulling off the task of conducting the conference with over 1000 participants worldwide is a heroic task. The team of Oral and Maxillofacial Surgery have put in immense efforts and planning in making this digital conference a grand success. We at KIMSDU always strive for the same. I take this opportunity to thank you all and wish more luck and success for forthcoming events”

Dr. Shashikiran N.D., Dean, SDS, KIMSDU delivering the welcome speech

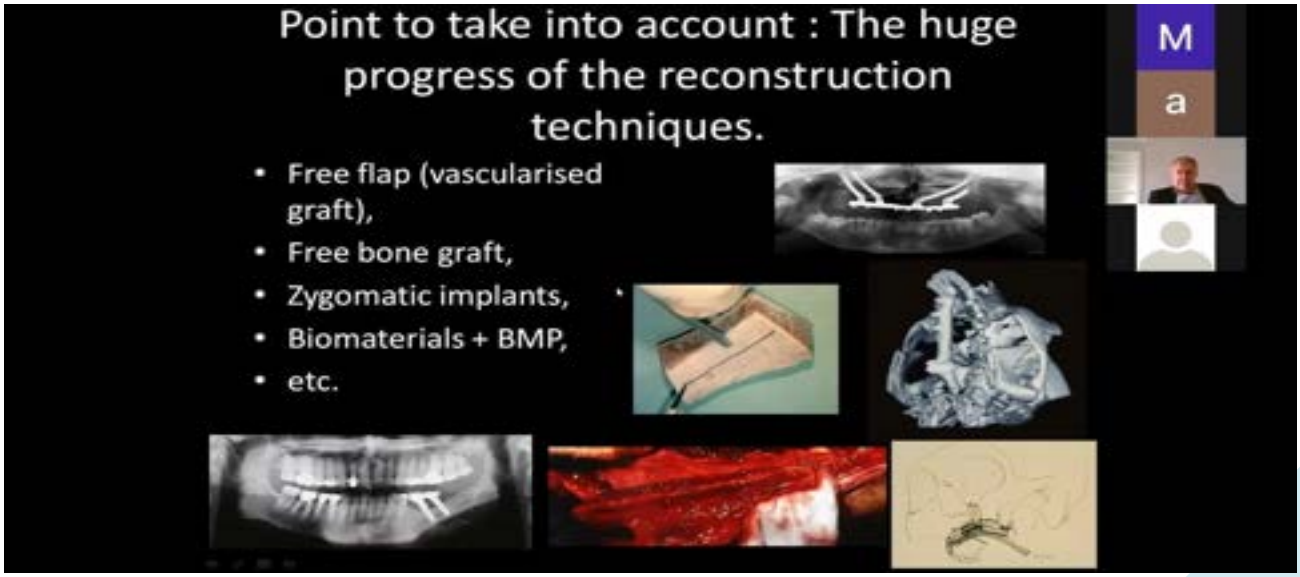
CONFERENCE PROCEEDINGS DAY 1

After the pleasantries exchanged, we begun with the keynote lectures. The pre-test forms for day 1 were distributed on the WhatsApp groups half an hour prior to the commencement of the event (***annexure 4:*** *pre-test day 1).* The keynote lectures of day 1 were moderated by Dr. Anuj Dadhich (Professor and PG guide at Rural dental college & hospital Loni)

DAY 1 5:00 PM Onwards (IST) 12:30 Onwards (Spain/ France/Germany Time)

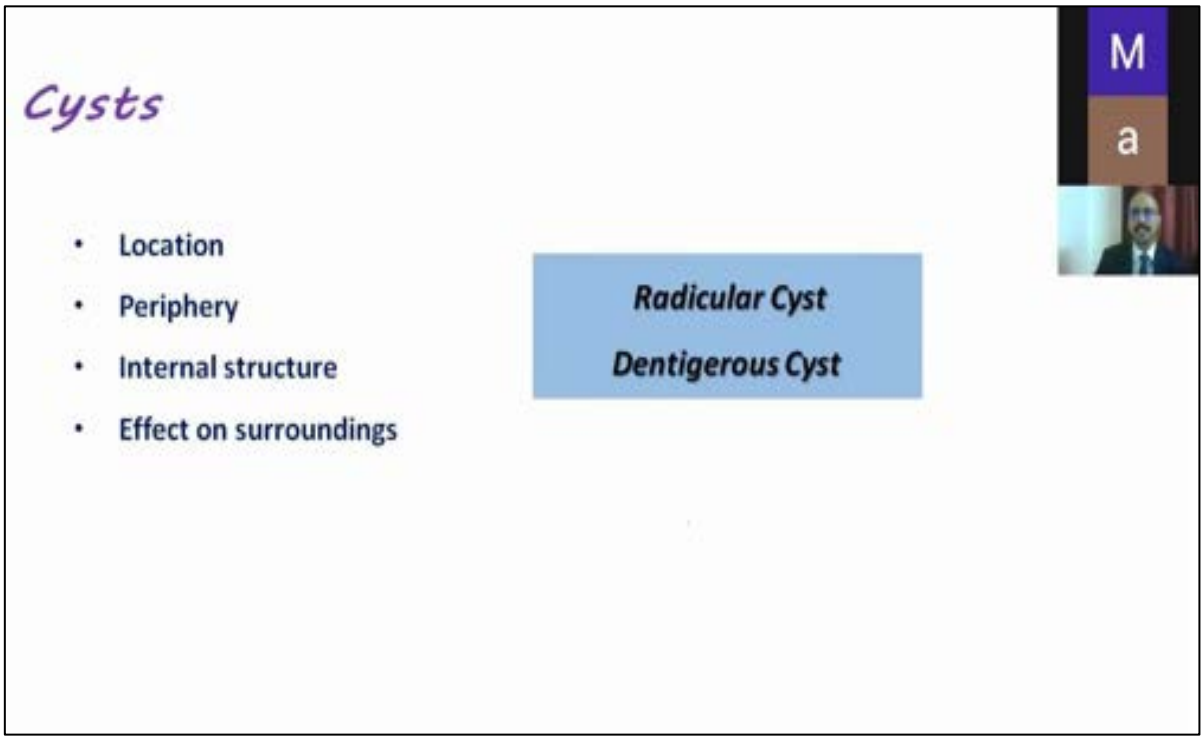
TIME	AGENDA ITEM	CONTRIBUTOR
5:00-5:15 PM	**Inauguration**	
5:15-6:00 PM	Ameloblastoma: Current understanding and contemporary considerations	Dr. Joel Ferri *(Chairman and Head of Oral and Maxillofacial Department, Lille, France)*
6:00-6:30 PM	Radiolucent Lesions of Jawbone: Differentiating for diagnosis	Dr. Ajay Nayak *(Chief Maxillofacial Radiologist at INsight CBCT, Mumbai)*
6:30-7:30 PM	Panel Discussion: Conservative to radical surgery for management of ameloblastoma	Dr. S. Kotra Shetty (Moderator) *(Prof. Dept. of OMFS, KLE Belgavi)* Dr. Joel Ferri Dr. Ajay Nayak

The 1st lectures of day one was delivered by **Dr. Joel Ferri (Chairman of Oral and Maxillofacial department, University hospital, Lille, France)**. Dr. Joel is an eminent personality in the field of maxillofacial surgery. He is the Former president and founding member of International bone research association since 2004. Dr. Ferri is also President of the National Professional Council of Oral and Maxillofacial surgery. He is French representative of the oral and maxillofacial surgeons at the UEMS and Member of many expert and advisory groups for national agency of health. The topic of his lecture was ***'Ameloblastoma: Current understanding and contemporary considerations'.*** The lecture was very informative putting light upon the basics of ameloblastoma.



Live lecture presented by Dr. Joel Ferri on Ameloblastoma

The next speaker for the day was one with a dynamic personality, **Dr. Ajay Nayak (Chief Maxillofacial Radiologist at INsight CBCT, Mumbai).** Dr. Nayak is the proud owner of India's first exclusive 3D Maxillofacial Imaging Centre, INsight CBCT. He has graduated from Bapuji Dental College, Karnataka and completed his post-graduation in the specialty of Oral Medicine & Radiology from Yenepoya Dental College, Mangalore. He has 14 years of Exclusive specialty practice in the field of Maxillofacial Imaging. He conducts basic as well as advanced courses on CBCT-related topics that are very well-appreciated and have completely registered modules months in advance. The topic of his lecture was **'Radiolucent lesions of jaw bone: Differentiating for diagnosis'**. Multiple pathologies present as radiolucent lesions. The lecture gave useful tips in identifying and differentiating them.



Live lecture presented by Dr. Ajay Nayak on Radiolucent lesions

Following the lectures by guest speakers, **Panel discussion** was conducted by **Dr. S.M. Kotrashetti** along with the panellists **Dr. Joel Ferri** and **Dr. Ajay Nayak**.

Dr. Kottrashetti is Professor, Dept. Of OMFS, KLE VK Institute of Dental Sciences. He has completed his MDS in the field of Oral and Maxillofacial Surgery in 1994. He is the Consultant at KLE SMILE TRAIN and Co-ordinator for the correction of Dentofacial Deformities in KLE University. His area of interests are Correction of facial deformities, Facial Trauma, Cleft lip and Palate surgery and Implant Dentistry. The title for panel was **'Management of ameloblastoma'**.

Panel discussion moderated by Dr. S.M. Kotrashetti with the panellists Dr. Joel Ferri and Dr. Ajay Nayak live on zoom app.

With this extensive knowledge on radiolucent pathologies and ameloblastoma, the event on day 1 was concluded and post-test form links were circulated in the groups.

CONFERENCE PROCEEDINGS DAY 2

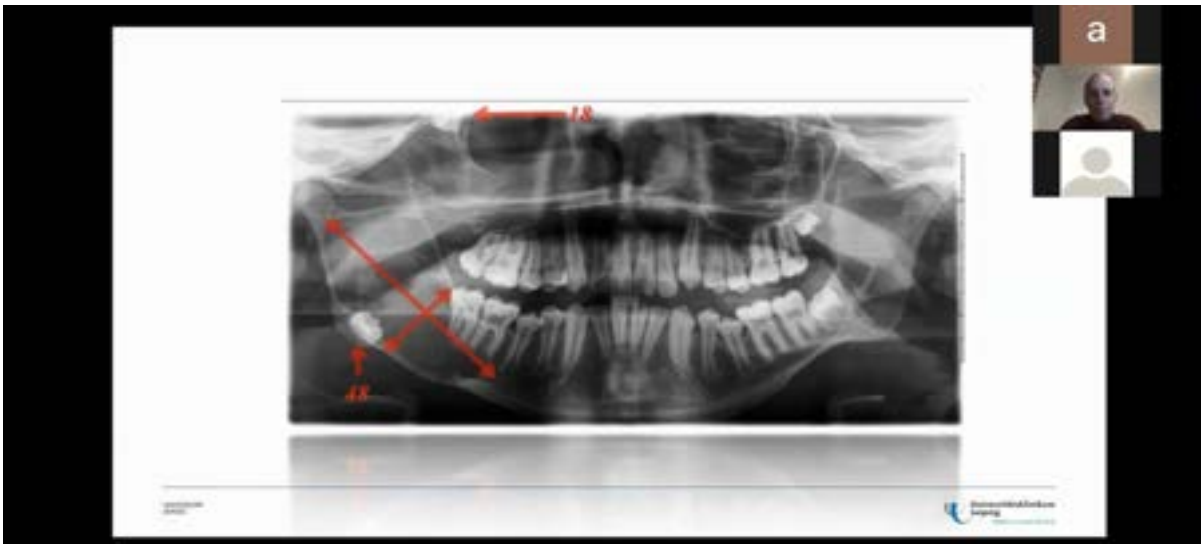
The pre-test forms for day 2 were distributed on the WhatsApp groups half an hour prior to the commencement of the event (***annexure 5****: pre-test day 2)*.

DAY 2 5:00 PM Onwards (IST) 12:30 Onwards (Spain/ France/Germany Time)

TIME	AGENDA ITEM	CONTRIBUTOR
5:00-5:30 pm	Odontogenic keratocyst: Revisited	Dr. Bernd Lethaus *(Director craniomaxillofacial surgery, University of Leipizg, Germany)*
5:30-6:00 pm	My long-term experience in management of OKC	Dr. PJW stoelinga *(Department of OMFS, Radboud University, Netherlands)*
6:00 – 6:15 pm	Q & A session on OKC	Dr. PJW stoelinga Dr. Bernd Lethaus
6:15-7:00 pm	Post graduate prize papers (3 papers to be shortlisted after offline screening of all papers by judges)	

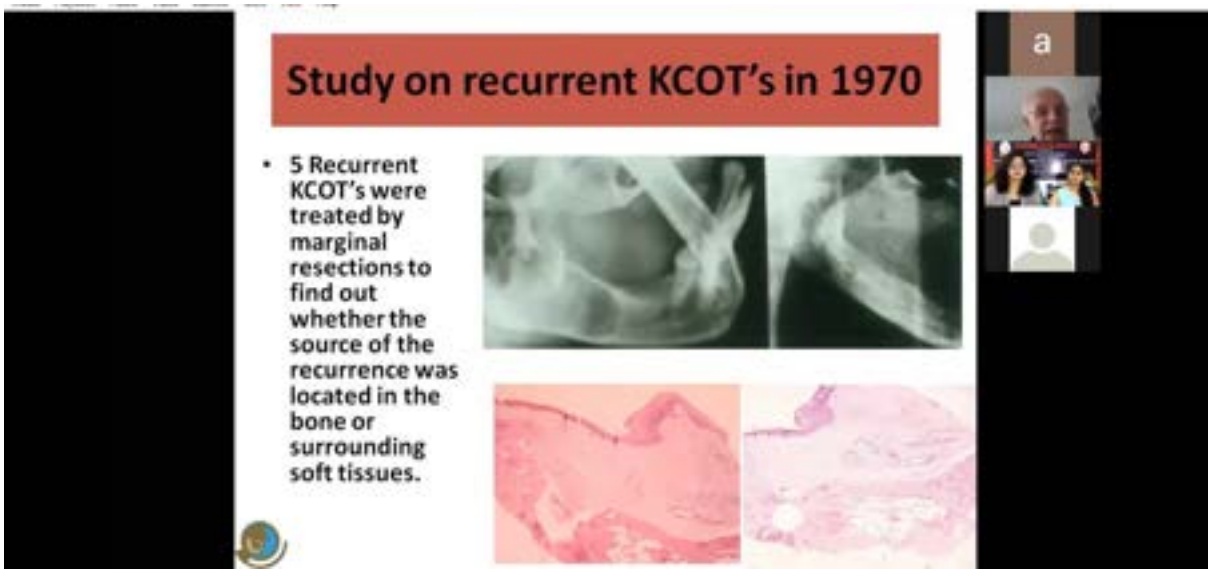
The 2nd day of conference began with the informative lectures on odontogenic keratocyst from the international speakers. The keynote lectures of 2nd day were moderated by Dr. Vijaykumar Girhe (Professor, Dept. of OMFS, HSRSM Dental college, Hingoli) Dr. Girhe is a versatile maxillofacial surgeon and a dedicated academician working as Professor at HSRSM Dental college, Hingoli. He is also Hon. Gen. Secretary of Maharashtra state chapter of Association of Oral and Maxillofacial Surgeons of India.

The 1st lectures of day 2 was delivered by **Dr. Bernd lethaus (Director, Craniomaxillofacial Surgery, University of Leipizg, Germany).** Dr. Lethaus is Professor and Head, Oral and Maxillofacial Surgery at University Clinics Leipzig, Germany. Dr. Bernd has a very vast academic career. He has qualifications in the field of medicine, dental and plastic surgery. The title of his lecture was Odontogenic keratocyst: revisited. It was a very informative lecture with deep insight on KCOT.



Dr. Lethaus delivering his lecture live on zoom.

The next keynote lecture of Day 2 was delivered by **Dr. PJW Stoelinga (Emiritus professor, Department of OMFS, University of Nijmegen, Netherlands)** Dr. Stoelinga is an Emeritus professor at the University of Nijmegen, The Netherlands. His PhD study “Epithelial cysts of the jaws” has become the basis for his ongoing interest in the origin and pathogenesis of odontogenic keratocysts (KCOT’s) and odontogenic tumors. He has also chaired as the President of the European Association of Craniofacial Surgery and International association of Oral and Maxillofacial Surgery. Other than OKC, Dr. Stoelinga is also interested in Reconstructive surgery, orthognathic surgery and tissue engineered reconstructions in the maxillofacial area. The topic of his lecture was: **‘**My long-term experience in management of OKC’. Sir’s eloquent life journey on OKC was very knowledgeable.



Dr. Stoelinga delivering his keynote lecture live on zoom.

After the keynote lectures, an interactive question answer session was moderated by Dr. Vijaykumar Girhe.

Dr. Vijaykumar Girhe moderating the question and answer session live on zoom.

PG PRIZE PAPER PRESENTATIONS

Out of 80 PG papers, three best papers were selected by external judges for prize category. The 3 prize papers were judged by: **Dr. Navin Shah,** Prof. & Head OMFS, Sumandeep Vidyapeeth University, Vadodara, **Dr. R.K. Shenoy**, Vice Dean, Prof. & Head OMFS, VSPM Dental College, Nagpur and **Dr. Madan Mishra,** Professor OMFS, SPPGI, Lucknow.
The 3 prize PG papers were presented by:

Dr. Harshini Bodduluri
Title: Aggressive osteoblastoma of the mandible: A rare case series

Dr. Alka Ajith
Title: A rare case of infiltrating angiomatosis of mandible and maxilla

Dr. Devyani Bahl
Title: Craniofacial ameloblastoma recurrence 34 Years after hemimandibulectomy – A case report.

With such huge depth of knowledge of OKC and discussion, the 2nd day of conference was successfully concluded. The post-test form link was shared on all the groups.

The local organizing team telecasting the International conference on digital platform

DAY 3 CONFERENCE PROCEEDINGS

The pre-test forms for day 3 were distributed on the WhatsApp groups half an hour prior to the commencement of the event (***annexure 6:*** pre-test day 3).

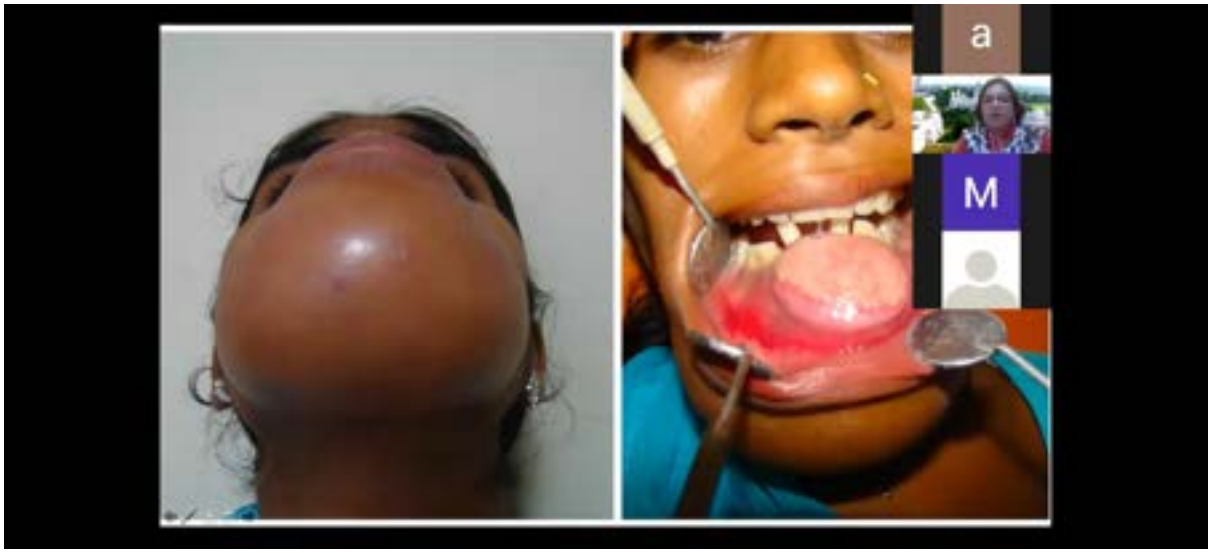
DAY 3: 5:00 Onwards (IST) 12:30 Onwards (Spain/ France/Germany Time)

TIME	AGENDA ITEM	CONTRIBUTOR
5:00-5:30 pm	Fibro-osseous lesions of Mandible	Dr. Divya Mehrotra *(Professor and Head,Dept of OMFS, King George's Medical University)*
5:30-6:00 pm	Fibro-osseous lesions of Maxilla in Paediatric patients	Dr. Josep Rubio *(Head of Pediatric Maxillofacial Surgery at Hospital Sant Joan de Déu (Barcelona Children's Hospital), Spain)*
6:00-6:30 pm	Evaluating Jaw radio-opacities: Differentiating for diagnosis	Dr. Surekha Puranik *(HOD, Dept of OMDR, PMNM dental college & hospital, Bagalkot)*
6:30-7:30 pm	Case / Panel discussion (fibro-osseous lesions)	Dr. Niltin Bhola (Moderator) *(HOD, Dept of OMFS, Dutta Meghe institute of medical sciences, Wardha)* Dr. Divya Mehrotra Dr. Josep Rubio Dr. Surekha Puranik
7:30 -7:45 pm	Valedictory function & PG Best paper result announcement	

The 3rd day of conference was begun with the lectures from the national and international speakers which focused upon the fibro-osseous lesions of the jaws. The lectures on day 3 were moderated by **Dr. Seemit Shah** (Prof. & Head, Dept. of OMFS, Rural dental college & hospital, Loni) Dr. Shah is a versatile maxillofacial surgeon and a dedicated academician working as Professor and Head at Rural Dental college, Loni. He is also director and consultant maxillofacial surgeon at Apex super-specialty hospital, Aurangabad.

The 1st lecture of day 3 were delivered by **Dr. Divya Mehrotra (Professor and Head, Dept of OMFS, King George's Medical University).** Divya Mehrotra, is the Vice Dean, Faculty of Dental Sciences, King George's Medical University, Lucknow. She is the Editor-in- chief for the Journal of Oral Biology and Craniofacial Research and was the Former President of Uttar Pradesh Association of Oral Maxillofacial Surgeons of India. She has to her credit 155 international Articles, has co-Authored in 11 books and is editor of 2 prestigious books in oral & maxillofacial surgery. She has delivered more than 75 key note address and presentations in various national and international forum.

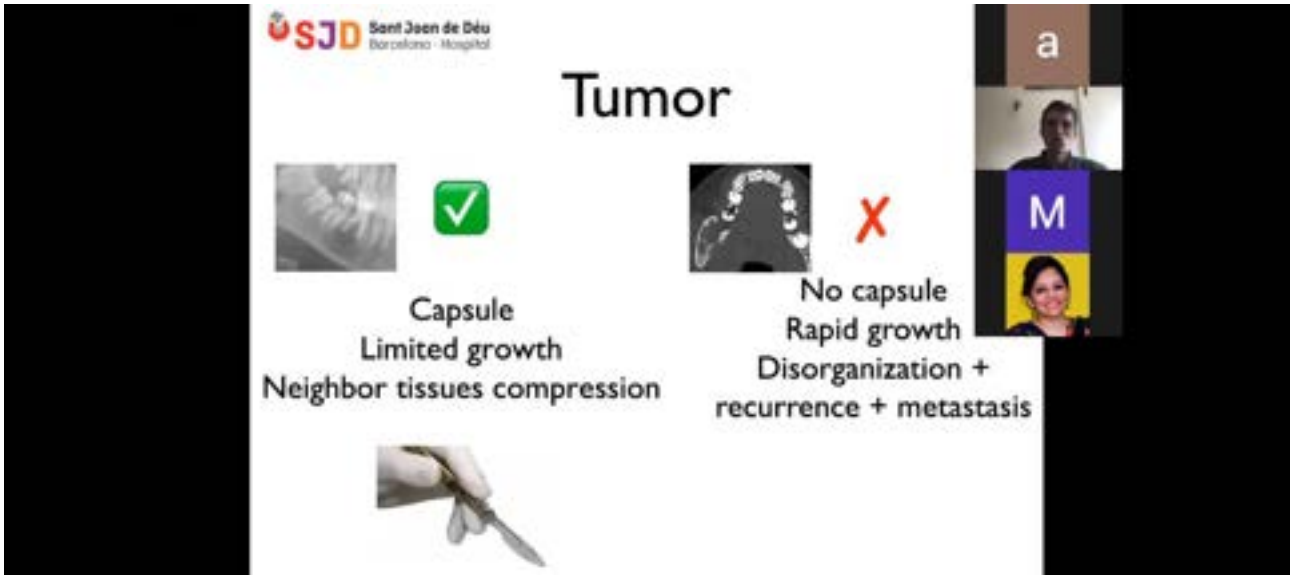
The title for her lecture was**: 'Fibro-osseous lesions of Mandible'.** It was a very enlightening lecture focused on distinguishing different radiolucent-radiopaque lesions of the jaws.



Dr. Divya Mehrotra delivering live lecture on zoom.

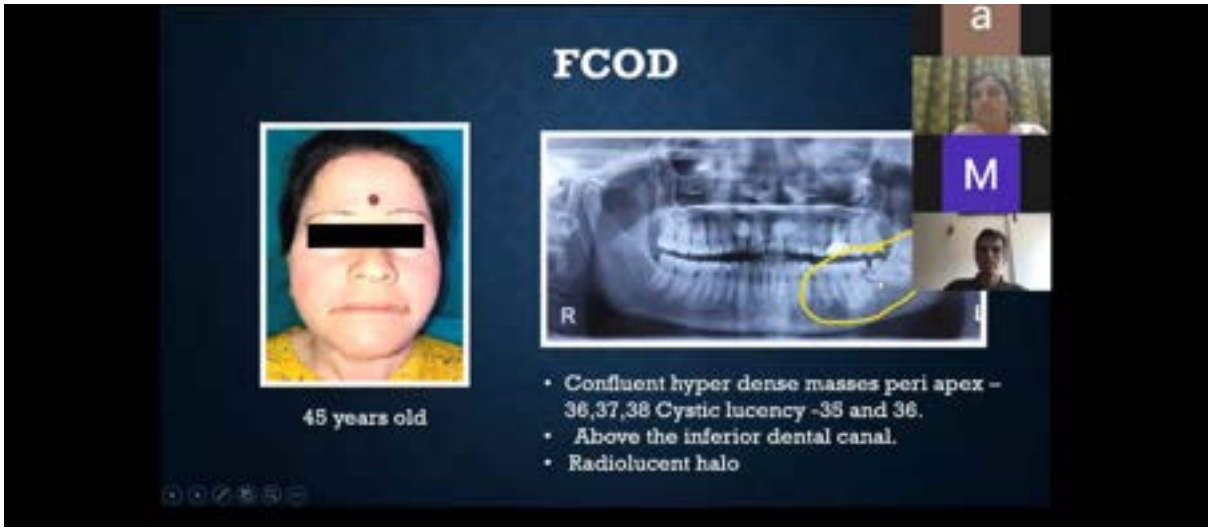
The next keynote speaker was **Dr. Josep Rubio (Head of Pediatric Maxillofacial Surgery at Barcelona Children's Hospital, Spain)** Dr.Rubio is Head of Pediatric Maxillofacial Surgery, Barcelona Children's Hospital, Spain. He is the Member of the European Association for Cranio-Maxillo-Facial Surgery and the AO Foundation.

The topic of his lecture was: **'Fibro-osseous lesions of Maxilla in Paediatric patients'.** It was a very informative lecture guiding on management on paediatric pathologies.



Dr. Josep delivering his lecture live.

The next keynote speaker was **Dr. Surekha Puranik. (HOD, Dept of OMDR, PMNM dental college & hospital, Bagalkot)**. Dr. Puranik is an expert in the field of oral medicine and radiology. Madam is Prof and Head, Dept of OMDR, PMNM Dental college and hospital, Bagalkot, Karnataka. She is BOS member for PG RGUHS, Bangalore. Madam is MDS and PhD examiner at NTR, MUHS and Datta Meghe University. She has several publications in national and international journals apart from reviewer for renowned periodicals.
The title of her lecture was**- 'Evaluating Jaw radio-opacities: Differentiating for diagnosis'** which was very enlightening.

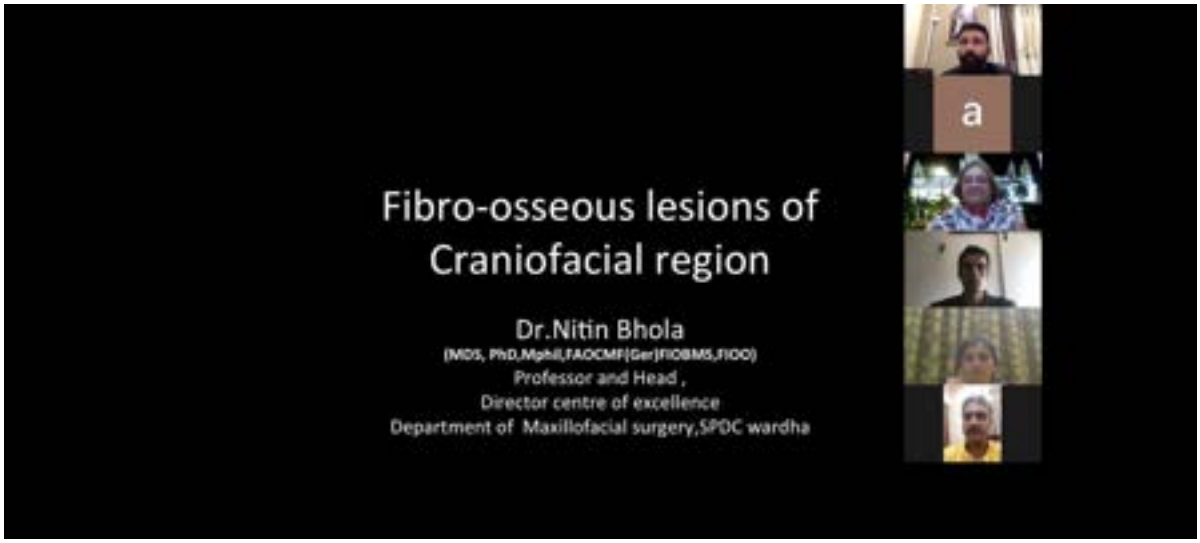


Dr. Surekha Puranik delivering live lecture on zoom.

PANEL DISCUSSION, QUESTION AND ANSWER SESSION

Subsequently panel discussion was Conducted by Dr. Nitin Bhola with the panelists Dr. Divya Mehrotra, Dr. Josep Rubio and Dr. Surekha Puranik.

Dr. Nitin Bhola (Head of Department, Datta meghe institute of medical sciences, Wardha) Dr. Bhola is a dynamic, versatile and a widely acclaimed maxillofacial surgeon with a blend of the finest surgical skills and very sound knowledge. He is Chairman board of studies (OMFS), Datta Meghe Institute of Medical Sciences Deemed University, Wardha. His unique distinction being the first PhD in head and neck cancer. His fortresses are Cancer and micro reconstruction, Corrective osteotomies, TMJ, and craniofacial surgery. He is a worthy recipient of L.W. Burkitt & H.M. Worth award.Dr. Bhola conducted along with his co-panelists an interactive discussion on **fibro-osseous lesions of craniofacial skeleton**.



Panel discussion moderated by Dr. Nitin Bhola along with the panelists live.

Question and answer session moderated by Dr. Seemit Shah live on zoom.

VALEDICTORY FUNCTION

Finally, this academic extravaganza was formally concluded with the valedictory function, with the messages from Dr. Pravin Shingare (honourable pro-chancellor, KIMSDU) and Dr. M. V. Ghorpade (registrar, KIMSDU) and vote of thanks from the organizing secretory Dr. Kumar Nilesh Mishra (Prof. and Head Department of OMFS, SDS, KIMSDU, Karad).

MESSAGE FROM HON'BLE PRO-CHANCELLOR, KIMSDU

"A very good evening to one and all. Firstly, I would like to thank all the delegates, eminent speakers and students for their participation and making INTERNATIONAL DIGITAL CONFERENCE on benign jaw pathologies a remarkable success. The organizers of the conference, Dr. Nilesh and his team, under the guidance of Dr. Shashikiran, deserve the most profound congratulations for excellent organization and maintaining the spirit of the event. Conducting conferences on such a grand scale requires scrupulous groundwork and structured implementation. I am sure an international digital conference like this has helped the maxillofacial surgeons, clinicians, academicians and trainees to come together, to share and learn new concepts and ideas. Pulling off the task of conducting the conference with over 1000 participants and over 100 PG paper presentations in a short span as this one is nothing less than an appreciable task. It takes huge determination and courage to initiate such a beneficial task for the welfare and betterment of the academic family. I hope this conference proved to be beneficial to all the delegates. As we are adapting to the new normal, we will continue to meet and learn on such virtual platforms. I take this opportunity to thank you all in making this event a memorable one!"

Dr. Pravin Shingare (Hon'ble Pro-chancellor, KIMSDU) addressing the digital conference

MESSAGE FROM REGISTRAR, KIMSDU

"Good evening everyone present here. I would like to congratulate all the delegates, organizing committee and my dear students for the grand success of International Digital Conference. The organizers of the conference DR Nilesh Mishra and team, under the guidance of Dr. Shashikiran, have put in remarkable efforts to bring this entire event together. Considering the present circumstances, it must have been a fastidious job to bring so many National and international delegates together via resorting to an innovative way for imparting and sharing knowledge from different corners of the globe. Dedication shown by the organizing committee is imperative for the growth of the KIMSDU family. KIMSDU has been ever so supportive in all academic endeavors that we have undertaken. We feel blessed to be a part of such a prestigious institution. The desire and willingness of the organizing team and the response of all the delegates and students fuel our mutual efforts guided us to the success of international global symposium. I take this opportunity to thank you all and wish SDS KIMSDU more luck and success for forthcoming events"

Dr. M.V Ghorpade (Registrar, KIMSDU, Karad) addressing the digital conference

VOTE OF THANKS FROM ORGANISING SECRETORY

Vote of Thanks was delivered by organizing secretory of the conference and Prof. and Head Department of OMFS, SDS, KIMSDU, Karad, Dr. Kumar Nilesh Mishra.

Dr. Kumar Nilesh Mishra delivering vote of thanks

“Hello and good evening everyone. It has been a very fascinating and engaging three days. And as we come to an end, I take the opportunity to put my gratitude into words. I thank all the eminent speakers, moderators and judges for sharing their valuable experiences and time. I thank all the delegates who joined us over the course of these 3 days for their patient listening and interactive participation.

It is a big day for us in the dept. of oral and maxillofacial surgery, KIMSDU, Karad for we have hosted the first digital International conference in collaboration with GSR institute Hyderabad. I vehemently express my gratitude to Gosla Reddy and Kotrashetty sir for being my guiding light in this journey. I would like to thank our beloved Dean, Dr. Shashikiran N.D. for his guidance to materialize these goals. Our university has always been supportive of academic endeavours that we have undertaken. On behalf of SDS I thank our honourable Pro-chancellor Dr. Pravin shringare sir, Vice Chancellor Prof Dr. Neelam Mishra ma’am and Registrar Dr MV Ghaorpade sir for their constant support. I humbly thank our honourable chairman Dr. Suresh Bhosale Sir for his encouragement and guidance.

I thank the IT and photography department, for their support. Talent wins games, but teamwork win championships, I am thankful to my team on ground zero, Dr. Mounesh, Prashant, Pankaj, Payal, Monica, Raveena, Hansraj, Shrenik, Ridhi and Priyanka. They gave this event the shape and executed it to the hilt. Thank you one and all”

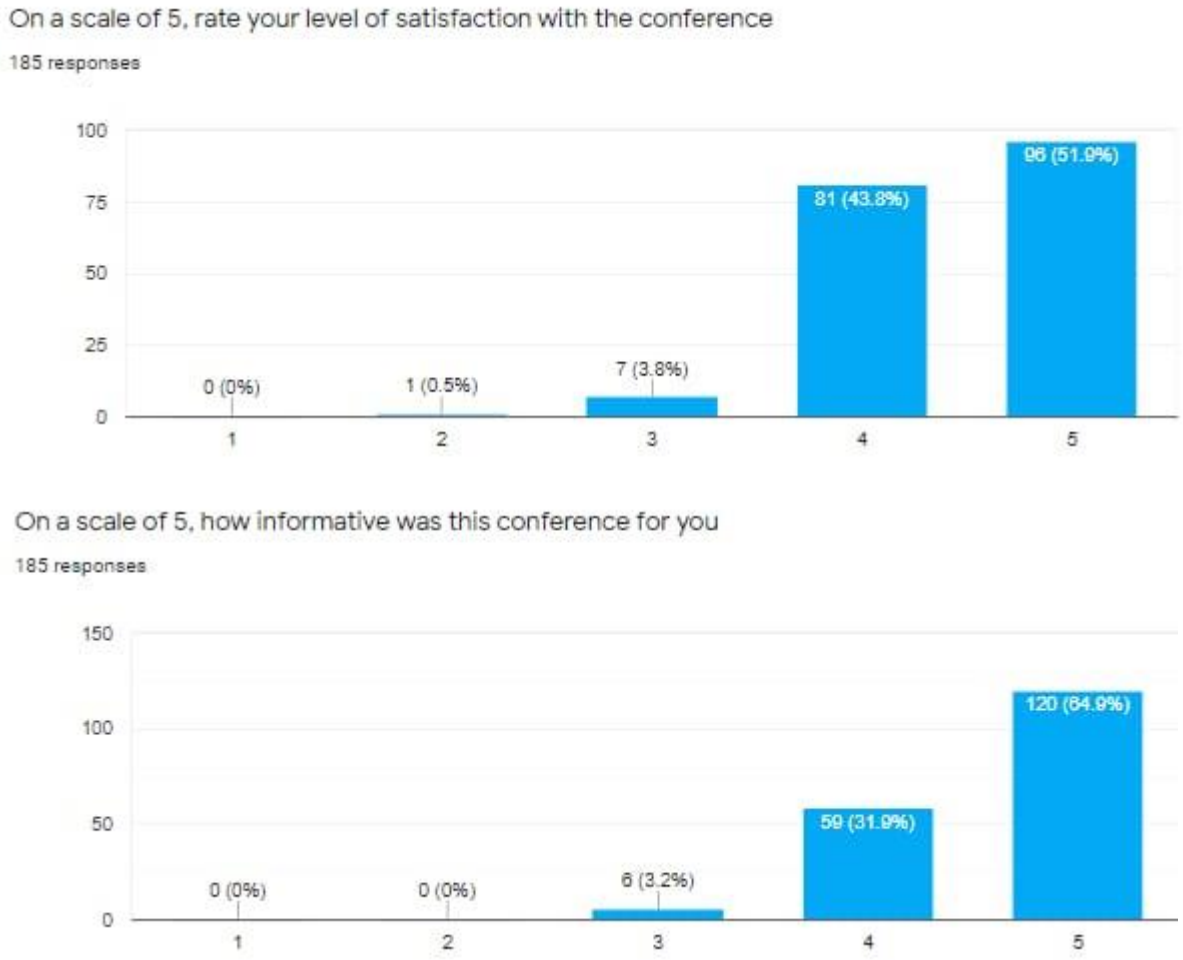
After the Vote of Thanks, the results for the prize PG paper category were announced. The 3rd rank was achieved by Dr. Harshini Bodduluri, the 2nd rank by Dr. Alka Ajith and the 1st rank by Dr. Devyani Bahl.

The three-day event was successfully concluded with guest lectures, panel discussions, interactive Q & A sessions along with postgraduate Paper presentation. The conference saw huge participations.

The organizing team of the conference

CONFERENCE FEEDBACK REPORT

At the end of the 3rd day of the digital conference, a feedback form was circulated to the participants on the conference WhatsApp groups (***Annexure 7***; feedback form). An encouraging response was received by the participants which shows that the conference was a grand success in providing useful knowledge and clearing doubts in the minds of many regarding the radiodiagnosis of various lesions of jaws.



Response of delegates of the digital conference

PRE-POST TEST ASSESMENT REPORT

Pre and post tests were administered on all the 3 days of the conference, before the commencement of the lectures and after the last panel discussion sessions. The test was delivered through the digital test-sheet links forwarded to the delegates on the conference WhatsApp groups. The result of the pre & post-test was evaluated to calculate the learning gain outcome and is tableted below.

Learner outcome was evaluated using pre and post test, with mean pre-test and post-test scores. The ***Advanced Learning Gain*** was calculated as per formula:

ALG = post test – pretest/Total score X 100.

Pre & Post-test result:

Day 1:

The mean pre-test score was 5% and the mean post test score was 8%. The advanced learning gain calculated was 20%.

Day 2:

The mean pre-test score was 4% and the mean post test score was 8%. The advanced learning gain calculated was 40%.

Day 3:

The mean pre-test score was 4% and the mean post test score was 9%. The advanced learning gain calculated was 62.5%.

Conference day	Pre-test knowledge (%)	Post-test knowledge (%)	Learning gain (%)
1	5	8	30
2	4	8	40
3	4	9	62.5

CONFERENCE OUTCOME REPORT

The conference was conducted to bring eminent surgeons in the field of maxillofacial and oral surgery, as well as head & neck imaging to discuss, debate and highlight their experience in field of benign jaw pathologies. The outcome from the digital meeting included:

- The global composition of the keynote speakers helped in **exchange of ideas and experiences of eminent surgeons** in management strategies of jaw pathologies **from around the world**.

- The interactive panel, case discussion, question and answer session allowed the **participants to benefit from the expertise of the well-known national & international surgeons**. The benefits derived from the interactive sessions was also highlighted in the feedback comments from the participants.

- This digital association has allowed the Dept. of Oral & Maxillofacial Surgery, SDS, KIMSDU, Karad to establish a formal connect with the heads of various reputed foreign varsities & hospitals. This opens-up **avenues for future multicentric studies, collaborations, joint academic organizations** etc.

- Possibility of a **multicentric study on Keratocystic jaw tumours, is already being discussed** between Dr. Kumar Nilesh Mishra (Prof & Head, Dept. of Oral & Maxilloafcial Surgery, KIMSDU, Karad) and Dr. PJW. Stoelinga (Emiritus professor, Department of OMFS, University of Nijmegen, Netherlands). This soon will be formalized after the protocol for the same id drafted.

- This event was a joint venture between Dept. of Oral & Maxillofacial surgery, SDS, KIMSDU, Karad and GSR institute of craniofacial & plastic surgery, Hyderabad. This event **strengthens the already existing MOU** between the two institutes and will help to further the goal of academic and patient care excellence.

- The event also helped to **highlight the objective and efforts of our university in supporting academic excellence** to various academic centres, hospitals, universities not just in India, but also around the globe. Beside India, the conference saw participations from various countries including, Netherlands, Spain, France, Germany, Ethiopia, Middle-east countries, Sri Lanka among others.

- The conference provided the digital **platform for postgraduate students** from across Indian and globally, to present their cases/reviews/research on jaw pathologies.

CONFERENCE ORGANIZING COMMITTEE

DR. GOSLA S. REDDY
Prof. GSR institute of craniofacial surgery, Hyderabad
Organizing chairman

DR. S. M. KOTRASHETTI
Prof. Department of OMFS, KLE, Belgavi
Organizing co-chairman

DR. K. NILESH MISHRA
Prof. &HOD Department of OMFS, SDS, KIMSDU, Karad
Organizing secretory

DR. MOUNESHKUMAR
Reader, Department of OMFS, SDS, KIMSDU, Karad
Scientific committee co-ordinator

DR. PRASHANT P.
Reader, Department of OMFS, SDS, KIMSDU, Karad
In-charge, PG paper presentations

DR. PANKAJ PATIL
Sr. Lecturer, Department of OMFS, SDS, KIMSDU, Karad
In-charge, audio visuals

DR. PAYAL MATE
Sr. Lecturer, Department of OMFS, SDS, KIMSDU, Karad
In-charge, registration

The organizing team; from right to left, Dr. Hansraj Patil, Dr. Adhishree Joshi, Dr. Aishwarya Ramgadiya, Dr. Priyanka Gupta, Dr. Riddhi Mahalle, Dr. Monica Patil, Mr. Razak Mulla, Dr. Shrenik Chouradiya (standing), Dr. Mounesh Kumar CD, Dr. K. Nilesh Mishra (Prof. & HOD), Dr. Shashikiran ND (Dean), Dr. Prashant Punde, Dr. Pankaj Patil, Dr. Payal Mate.

Date : 11th June 2020

Memorandum of Agreement
Collaborating for International Training & Internship
'Opportunities for R&D Ecosystem & Tech Driven Startups'

This Memorandum of Understanding (MoU) made and entered into on this 11th day of June, 2020 (**effective date**) by and among the following two entities collectively referred to as "Parties" and each referred to individually as "Party".

R2E Technologies Private Limited (Tech Counsellor ®), registered under the Company Act 2013, and a recognised STARTUP by DPIIT, Government of India and Uttarakhand Startup Council, Government of Uttarakhand having its registered address at Tech Counsellor, HN 403, A-Block, Umrawnagar, PO Padampur Motadhak, Kotdwar – 246149, website: **http://techcounsellor.com** through its authorized signatory **Ms. Renu Thapliyal,** Managing Director, Tech Counsellor (hereinafter referred to as **'First Party'**).and

Krishna Institute of Medical Sciences "Deemed To Be University", Karad, Maharashtra, a recognized Medical 'Deemed to be University', accredited by NAAC with A Grade, an ISO 9001:2015 certified University and is accredited by various reputed National and International bodies, having its office address at Malkapur, Karad (Dist. Satara) 415539 Maharashtra, India, website: **www.kimskarad.in** through its authorized signatory **Dr. M. V. Ghorpade,** Registrar, Krishna Institute of Medical Sciences "Deemed To Be University", Karad (hereinafter referred to as **'Second Party'**).

In response to the document ref. no, R2E/2020/D/10 dated 08th June 2020, on sponsorship opportunities for one of the mega event 'one month International Internship and Training Program' to be scheduled from 20th June to 15th July 2020; both the parties are ready to collaborate and support for the Program; and will support for the success of the event through best possibilities.

This Dedicated program developed for students, faculty, and startups to have an inside insight on R&D, R&I, Innovation, Sustainable and towards having a Tech-Driven economy in line with the Government vision; most of the experts will speak on domain including Greywater, Healthcare, Biomedical, IoT, Embedded, Data Science, Communication, which will be helpful in getting the broader picture for technology development and for contributing toward making India into an R&D hub; during 20th June 2020 to 15th July 2020, 13:00 Hr to 15:00 Hr.

In order the make the program successful, both the parties agreed mutually on the following points.

- **First Party** will make all the necessary efforts for successfully execution of this MoU terms and for the Program by making all necessary efforts including branding, designing, Social campaign, online tool for program etc.
- **First Party** will provide Digital Certificate to all participants and Faculties.
- **Second Party** is willing to support through **Financial Support of** 10,000 INR (TEN THOUSAND ONLY) to First Party
- **Second Party** will be involved as a **Co-Organizer** for the Program on all Certificates and Printing material from the effective date mentioned on the agreement.
- **Second Party** agreed to be the Signatory for the certificates, i.e. On all certificates there will be digital signature of organizer and co-organiser (Any one from Dean/Director/Registrar/VC).
- **Benefits to Participant of Second Party:** First 20 registration (Faculty/Students) will be eligible for 'Free Registration'. Rest, all will be eligible as per Annexure II of the document Ref no. R2E/2020/D/10, subject to meeting the terms of availability of the seats.
- **Second Party** will provide High Resolution of JPG and PNG file (without background) of University Logo and Signatory personal for Certificates and all other branding purpose.

This agreement is signed for the specific need based program 'International Online Internship Training Program'; and both parties may sign a detail MoU for collaborative R&D and R&I related work in future. Fresh terms will be constituted based on mutual understanding for all such collaborations.

The present agreement is signed in English, two (2) originals, all text being equally valid.

Signed by and on Behalf of
R2E Technologies Private Limited
(First Party)

Name: Renu Thapliyal
Designation: Managing Director
Signature / Stamp
M.N: (+91) 9412124929
Email ID: renu@techcounsellor.com
techcounsellors@gmail.com

Date:

Signed by and on behalf of
Krishna Institute of Medical Sciences "Deemed To Be University", Karad, Maharashtra,
(Second Party)

Name: Dr. M. V. Ghorpade
Designation: Registrar
Signature / Stamp:
M.N: 9422402128
Email ID: registrar@kimskarad.in

Date: 11/06/2020

MoU Activity

Krishna Institute of Medical Sciences "Deemed To Be University", Karad has undergone into the academic collaboration with R2E Technology Pvt. Ltd. At Tech Counsellor, HN 403, A-Block, Umrawnagar, PO Padampur Motadhak, Kotdwar- 246149 has signed a MoU to accelerate the start-up activities in our institution and also to felicitate the academic enrichment among the faculty and postgraduate students about their working with "Research and Development Cell" to create an echo system in the institute. The MoU was signed on 11th June 2020 and in continuation the KIMSDU in collaboration with R2E Technology Pvt. Ltd (Tech Counsellor) could arrange a "International Training and Internship Program" organized by Tulas & Tech Counsellor & KIMSDU as co-organizer which was supported by TEQIP-III Uttarakhand Technical University with some other Indian organization on the common platform.

The total 25 participants has participated from our institution in this virtual platform where all webinar session commenced from 20th June 2020 to 15th July 2020.

The outcome of the training program from among participated candidates has been assessed and every participants has been provided certificate of participation by Tech Counsellor and KIMSDU.

This is the 1st activity of about one month training program in which participants has been connected through an international dais in virtual mode through webinar.

Program Report

International Training and Internship Program on

'Opportunities for R&D and Tech-Driven Start-up'

(20th June 2020 to 15th July 2020)

The program was organised by **Tula's and Tech Counsellor**, co-organised by **Krishna Institute of Medical Sciences 'Deemed to be University' Maharashtra**; supported by **TEQIP - III and Uttarakhand Technical University** and partnered by Yuvayana Tech & Craft P.Ltd, Ramanujan Academy of Science and Technology, Kavirak Foundation, Boudhik Ventures P. Ltd and Swachh Neer.

The program offered one-month International Internship Program to students, faculties and industry professionals from science, engineering and technology domains. The entire program was exclusively focused on research, development and innovation in the domain of Biomedical, Agri Tech, AI, Environment, Intellectual Property Rights, Electronics, Computer Science, IoT, Embedded, Business, Water, Communication and Electrical Engineering etc. for which international experts from Biomedical, Water, IoT, Engineering, Embedded Systems, Communication, Environment etc. working as CEOs, R&D Head, Director, Professor, Researcher and Engineer has been invited for expert sessions and practical demo on virtual platform. These experts are from Biomedical, Water, IoT, Engineering, Embedded Systems, Communication, Environment etc and delivered sessions on core R&D and R&D scenarios on various domain post-COVID citation.

Tula's Institute and Tech Counsellor were designated with the responsibility of holding 'the prestigious International Training and Internship Program on 'Opportunities for R&D and Tech-Driven Startup' organised from 20th June 2020 to 15th July 2020. The program was co-organised by **Krishna Institute of Medical Sciences 'Deemed to be University' Karad, Maharashtra** and additionally designated with the responsibility of identifying the keynote speakers in biomedical domain and inviting participants from medical domain; sponsored by Uttarakhand Technical University & TEQIP - III. Additionally, the program received many organisational supports as Technical, Knowledge and CSR Partner, which includes Yuvayana

Tech & Craft P. Ltd, Ramanujan Academy of Science and Technology, Kaviraj Foundation, Swachh Neer, SEWA, Boudhik Ventures Private Limited.

The program started and conducted with the vision of contributing towards government of India vision and mission, 'making India a global R&D hub'. Under the umbrella of DISA & AVNI the program had 22 sessions which includes on multi-disciplinary domain and had 10+ practical sessions. The sessions included online hands on learning presentations and training by 18 leading Domain-specific experts from various countries, reputed organisation and scientific labs. The session experts were well-recognised experts from the Industry and Academic world.

Online sessions and trainings were conducted using various online platform including Google Meet, GoToMeeting, Stream Yard, Facebook and YouTube. The strong technical support since the inception, implementation and for successful completion of the program made it a huge success. The most highlighted success of event was as follows:

- More than 1200+ participants had shown the interest for the program
- 11 Institution collaborated for this one month extensive R&D and Startup focused program, which was of first of its kind towards boosting startup ecosystem.
- 15,000+ views on Facebook and 3,300+ Views on YouTube sessions for this program, till date (16 July 2020).
- Participants from almost all states of India, and from 6 Asian Countries attended the program.

Sessions included following 18 experts and their vast knowledge and expertise on the domain provided a new horizon of opportunities and ideas to work upon to all the participants. In the short span of one month, the experts covered most of the major topic of academic and industrial importance which have huge potential to turn ideas into innovations; and innovations into business. The detailed sessions, hand-on learning experience and the opportunity for audience to interact in live sessions created great learning space. The experts and their individual topics of discussion are listed below:

1. Dr Fabio Masi, R&D Manager at IRIDRA from Italy, interacted with participants during live sessions and discussed on the topic *Nature based Research & Innovation solutions for the next generation startups.*

2. Dr Rajkumar Halder, Founder & CEO Ruhvenile Biomedical, New Delhi, India interacted with participants during live sessions and discussed on the topic *R&D and R&I in Defence and Biomedical for next generation startup and entrepreneurs.*
3. Mr Madan Kanala, Founder & CEO SnowM Inc from Canada interacted with participants during live sessions and discussed on the topic *Digital enablement of workforce through IoT technologies.*
4. Mr Saurabh Trivedi, Founder and Director, Boudhik Ventures Pvt Ltd, India, interacted with participants during live sessions and discussed on the topic *IPR – Assets for the Startup and relevance of IPR in startup ecosystem.*
5. Er Ajit Kumar Yadav, Researcher NASA-ISRO, Founder Ramanujan Academy, Maharashtra, India, interacted with participants during live sessions and discussed on the topic *Understanding of Communication and its application for Space Satellite program*
6. Er Naveen Kumar, Research Engineer from France, interacted with participants during live sessions and discussed on the topic *Communication for smart home automation, and smart tech enabled devices.*
7. Er Abhishek Gupta, Research Engineer from Hungary, interacted with participants during live sessions and discussed on the topic *Terahertz (THz) antenna design, Non linear THz time-domain spectroscopy, and ultrafast carrier dynamics in semiconductor materials.*
8. Shiva Prasad Koyyada, Data Scientist from INSOFE Education, Hyderabad, India, interacted with participants during live sessions and discussed on the topic *Detour of Data science, Intro Supervised learning- linear Regression with hands-on and error metrics.*
9. Dr Raman Sharma, Senior Scientist from CSIR-NEERI, New Delhi, India, interacted with participants during live sessions and discussed on the topic *Opportunities for sustainable green tech startups'*
10. Dr (Prof) Manoj Panda, State Project Implementation Unit (SPIU) Uttarakhand, India, interacted with participants during live sessions and discussed on the topic *Sustainable future and scope of Solar for Startups.*
11. Er Vinay Chowdhary, Assistant Professor, University of Petroleum and Energy Studies, Uttarakhand, India, interacted with participants during live sessions and discussed on the topic *IoT and Embedded, in today's Startups and Tech Driven R&D ecosystem scenario, Practical Approach*

12. Dr Sunil Semwal, HOD & Professor, Tulas Institute Uttarakhand, India, interacted with participants during live sessions and discussed on the topic *Opportunities on Solar & Renewable for Green Tech and Sustainable Future and Government Initiatives*
13. Ms Sakshi Gupta, Assistant Professor, Graphic Era University, Uttarakhand, India interacted with participants during live sessions and discussed on the topic *Understanding Issues and Challenges In Rainwater Harvesting For A Better Sustainability Of Water Resources.*
14. Er Udayveer Mittal, R&D Embedded Engineer, R2E Technologies Pvt Ltd, Uttarakhand, India interacted with participants during live sessions and discussed on the topic *Hardware Implementation for R&D and Project Development.*
15. **Dr Jayant Pawar**, Research Associate, **Krishna institute of Medical Sciences "Deemed to be University", Karad**, India, interacted with participants during live sessions and discussed on the topic *Possibilities in NanoTechnology based R&D for Agri-Tech, Challenges and Opportunity for Startups.*
16. Mohan HR, Chair-ACM Chennai, Former Editor- IEEE IC, Newsletter, ICT Consultant, Chennai, India interacted with participants during live sessions and discussed on the topic *Role of Technical Associations in Nurturing Innovation and Promoting Entrepreneurship.*
17. Yasodhan Mandke, Senior Technical Research Advisor, Tech Counsellor & Independent Industry Consultant, Maharashtra, India interacted with participants during live sessions and discussed on the topic *Astrophotonics -Minitarized chips for vast Space, R&D, commercialization & application to astronomy for space exploration.*
18. Renu Thapliyal, Co-Founder & Director, Tech Counsellor, Founding Member, Kaviraj Foundation, Uttarakhand, India interacted with participants during live sessions and discussed on the topic *R&D and R&I ecosystem opportunities on technology development for next generation entrepreneurs.*

The organising committee screened and selected best inventions made by participants and allow them to present during live sessions in program. In this context, one of our participants **Mrs. Rajshree B. Karale**, Assistant Professor, **KINS, Krishna institute of Medical Sciences "Deemed to be University", Karad** got opportunity to present her invention, which was appreciated by committee and other attendees.

Success of the program is mostly derived from the fact that 'how many participants actively participated in the program'; despite such a hectic and long program, the International Internship program received 73% - 77% of attendance on an average in all session. Total of 190+ participants registered on this funded program and have participated on the online exam as well which was conducted on 15th of July 2020. Questions based on the whole one month program were asked from the participants for whom automated online result system was created.

Vote of thanks from Tulas team were presented by Dr. Sunil Semwal, Organising Secretary of the Program, he emphasis to have such more program in coming month for the benefits of the students and so they may start thinking on turning their ideas into successful business. He also, shared about the Tula's Business Incubator Centre.

From Tech Counsellor Team, Mr. Mukesh Kestwal, Research & Technical Advisor, concluded the session, with thanking remark to all the dignitaries, sponsors and organisers specially to Registrar from UTU and **Hon'ble Chancellor Dr. Suresh Bhosale, Dr. M. V. Ghorpade, Registrar and Dr. D. K. Agarwal, Additional Research Director from Krishna Institute of Medical Sciences 'Deemed to be University',** he extended his heartful thanks to the organisation for supporting the endeavour of Government of India and of Tech Counsellor to foster the start-up ecosystem in the country and towards creating tech driven start-ups.

This program was hosted by Tech Counsellor, under the initiative Digital Incubation Support for All (DISA) ® and A Virtual Network of Indians (AVNI) ®. Organising team includes, Dr. Sunil Semwal, Dr. Jayant Pawar, Mr. Diwaker Pant, Renu Thapliyal, Parag Verma, Praveen Kumar, Priyanka Gusain, Monika Thapliyal, Ritesh Kestwal, Mukesh Kestwal, Akhilesh Singh, Ravi Patel and team from Tula's, Krishna Institute and Tech Counsellor.

Report Prepared by:

Directorate of Research

Krishna Institute of Medical Sciences "Deemed to be University" Malkapur, Karad,

Documents Attached:

1. List of Participants
2. MoA
3. Certificate of Appreciation for Keynote Speaker
4. Certificate of Participation
5. Mail communications

MoU Activity

Krishna Institute of Medical Sciences "Deemed To Be University", Karad has undergone into the academic collaboration with R2E Technology Pvt. Ltd. At Tech Counsellor, HN 403, A-Block, Umrawnagar, PO Padampur Motadhak, Kotdwar- 246149 has signed a MoU to accelerate the start-up activities in our institution and also to felicitate the academic enrichment among the faculty and postgraduate students about their working with "Research and Development Cell" to create an echo system in the institute. The MoU was signed on 11th June 2020 and in continuation the KIMSDU in collaboration with R2E Technology Pvt. Ltd (Tech Counsellor) could arrange a "International Training and Internship Program" organized by Tulas & Tech Counsellor & KIMSDU as co-organizer which was supported by TEQIP-III Uttarakhand Technical University with some other Indian organization on the common platform.

The total 25 participants has participated from our institution in this virtual platform where all webinar session commenced from 20th June 2020 to 15th July 2020.

The outcome of the training program from among participated candidates has been assessed and every participants has been provided certificate of participation by Tech Counsellor and KIMSDU.

This is the 1st activity of about one month training program in which participants has been connected through an international dais in virtual mode through webinar.

List of participates for Training Programme Conducted by Research Department				
Sr. No.	Name	Designation	Mobile	Email.com
KIMSDU				
Dr. Dinesh Agrawal			9422140142	dkagarwal_1512@yahoo.co.in
Dr. Rohan Phatak			9860071083	phatak.rohan1983@gmail.com
Dr. Jayant Pawar			8600867813	jayantpawar26@gmail.com
KIP				
	Dr. Amol S. Shete	Asst. Prof.	9822916129	amol.shete@rediffmail.com
	Dr. Rohit R. Bhosale	Asst. Prof.	7057224707	Bhosalerohit707@gmail.com
	Mrs. Akshada A. Koparde	Asst. Prof.	8600009709	akshadakakade@yahoo.com
	Mr. Anup A. Patil	Asst. Prof.	9096801200	anuppatil.pharma@gmail.com
	Mrs. Jisha Annie G	Asst. Prof.	8848498879	jishaannie22@gmail.com
	Ms. Jotsna M. Gandhi	Asst. Prof.	9423826781	jotsna.gandhi@gmail.com
	Mrs. Swati B. Udugade	Asst. Prof.	9325205987	swatiudugade@gmail.com
	Mr. Vishal V. Shah	Asst. Prof.	9923272068	shahvishalv99@gmail.com

Faculty of Allied Sciences				
1.	Mrs. Shilpa S. Ruikar	Assistant Professor	9834825416	shilpa_ruikar@yahoo.co.in
2.	Mrs. Snehal A. Masurkar	Assistant Professor	9975521121	Snehalmasurkar2882@gmail.com
SDS				
1.	Dr. Sushma R.	Reader Dept. of Prosthodontics	8105328348	doc.sushma.r@gmail.com
2.	Dr. Pratap Mane	Sr. Lecturer Dept. of Orthodontics	9823133822	drpratapmane31@gmail.com
3.	Dr. Swapnil Taur	Sr. Lecturer Dept. of Pedodonics	9623940499	swapnil.taur@gmail.com
4.	Dr.KrunaPawashe	Sr. Lecturer Dept. of Prosthodontics	7709967994	abhijeet.kore@yahoo.com

5.	Dr. Ashwini Rani	Sr. Lecturer Dept. of OMDR	7798250369	drashwiniranisr@gmail.com
		KINS		
1.	Dr.Prabhuswami Hiremath	Assistant Professor	9665620425	prabhu252003@yahoo.co.in
2.	Mrs. Rajshree B. Karale	Assistant Professor	9423339889	mrs.rajashribhagwatkarale@gmail.com
3.	Mrs. Namrata C. Mohite	Assistant Professor	8793540010	namratamohite5@gmail.com
4.	Mr. Shivaji H. Pawar	Assistant Professor	9975798676	shivajipawar446@gmail.com
5.	Mrs. Anagha V. Katti	Assistant Professor	9527317201	anaghakatti19@gmail.com
		KIMS		
1.	Dr. S. B. Mane	Professor in Anatomy	9822831039	kantmane@gmail.com
2.	Dr. Avinash Mane	Assistant Professor, Pathology	9422383400	dr.avinash_mane2007@rediffmail.com

3.	Dr. Atul Hulwan	Assistant Professor, Pathology	9975713303	atul.hulwan@gmail.com
4.	Dr. D.B. Shirkhe	Assistant Professor, Ophthalmology	9823140928	drdnyaneshshirke928@gmail.com
5.	Dr. Asma A. Hussain	Assistant Professor Dermatology	8087937255	drasmaarif.5aug@gmail.com
KCP				
1.	Dr. Khushboo Chotai	Assistant Professor	9011015331	bathiakushboo@gmail.com
2.	Dr. Pragati Salunkhe	Assistant Professor	9730830011	drpragatisalunkhe94@gmail.com
3.	Dr. Radhika Chintamani	Assistant Professor	8762184039	radds2009@gmail.com
4.	Dr. Mayuri Burungale	Assistant Professor	9168899666	mayuriburungale7@gmail.com

Date : 11th June 2020

Memorandum of Agreement
Collaborating for International Training & Internship
'Opportunities for R&D Ecosystem & Tech Driven Startups'

This Memorandum of Understanding (MoU) made and entered into on this 11th day of June, 2020 (**effective date**) by and among the following two entities collectively referred to as "Parties" and each referred to individually as "Party".

R2E Technologies Private Limited (Tech Counsellor ®), registered under the Company Act 2013, and a recognised STARTUP by DPIIT, Government of India and Uttarakhand Startup Council, Government of Uttarakhand having its registered address at Tech Counsellor, HN 403, A-Block, Umrawnagar, PO Padampur Motadhak, Kotdwar – 246149, website: **http://techcounsellor.com** through its authorized signatory **Ms. Renu Thapliyal,** Managing Director, Tech Counsellor (hereinafter referred to as **'First Party'**).and

Krishna Institute of Medical Sciences "Deemed To Be University", Karad, Maharashtra, a recognized Medical 'Deemed to be University', accredited by NAAC with A Grade, an ISO 9001:2015 certified University and is accredited by various reputed National and International bodies, having its office address at Malkapur, Karad (Dist. Satara) 415539 Maharashtra, India, website: **www.kimskarad.in** through its authorized signatory **Dr. M. V. Ghorpade,** Registrar, Krishna Institute of Medical Sciences "Deemed To Be University", Karad (hereinafter referred to as **'Second Party'**).

In response to the document ref. no, R2E/2020/D/10 dated 08th June 2020, on sponsorship opportunities for one of the mega event 'one month International Internship and Training Program' to be scheduled from 20th June to 15th July 2020; both the parties are ready to collaborate and support for the Program; and will support for the success of the event through best possibilities.

This Dedicated program developed for students, faculty, and startups to have an inside insight on R&D, R&I, Innovation, Sustainable and towards having a Tech-Driven economy in line with the Government vision; most of the experts will speak on domain including Greywater, Healthcare, Biomedical, IoT, Embedded, Data Science, Communication, which will be helpful in getting the broader picture for technology development and for contributing toward making India into an R&D hub; during 20th June 2020 to 15th July 2020, 13:00 Hr to 15:00 Hr.

In order the make the program successful, both the parties agreed mutually on the following points.

R2E TECHNOLOGIES TECH COUNSELLOR

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

- **First Party** will make all the necessary efforts for successfully execution of this MoU terms and for the Program by making all necessary efforts including branding, designing, Social campaign, online tool for program etc.
- **First Party** will provide Digital Certificate to all participants and Faculties.
- **Second Party** is willing to support through **Financial Support of** 10,000 INR (TEN THOUSAND ONLY) to First Party
- **Second Party** will be involved as a **Co-Organizer** for the Program on all Certificates and Printing material from the effective date mentioned on the agreement.
- **Second Party** agreed to be the Signatory for the certificates, i.e. On all certificates there will be digital signature of organizer and co-organiser (Any one from Dean/Director/Registrar/VC).
- **Benefits to Participant of Second Party:** First 20 registration (Faculty/Students) will be eligible for 'Free Registration'. Rest, all will be eligible as per Annexure II of the document Ref no. R2E/2020/D/10, subject to meeting the terms of availability of the seats.
- **Second Party** will provide High Resolution of JPG and PNG file (without background) of University Logo and Signatory personal for Certificates and all other branding purpose.

This agreement is signed for the specific need based program 'International Online Internship Training Program'; and both parties may sign a detail MoU for collaborative R&D and R&I related work in future. Fresh terms will be constituted based on mutual understanding for all such collaborations.

The present agreement is signed in English, two (2) originals, all text being equally valid.

Signed by and on Behalf of
R2E Technologies Private Limited
(First Party)

R2E TECHNOLOGIES TECH COUNSELLOR

Name: Renu Thapliyal
Designation: Managing Director
Signature / Stamp
M.N: (+91) 9412124929
Email ID: renu@techcounsellor.com
techcounsellors@gmail.com

Date: 11/06/2020

Signed by and on behalf of
Krishna Institute of Medical Sciences "Deemed To Be University", Karad, Maharashtra,
(Second Party)

Krishna Institute of Medical Sciences 'Deemed To Be University', Karad

Name: Dr. M. V. Ghorpade
Designation: Registrar
Signature / Stamp:
M.N: 9422402128
Email ID: registrar@kimskarad.in

Date: 11/06/2020

ICICI Bank Advice Receipt

7/8/20 4:21 PM

Transaction Details

Account Number:	**159405500368**
Transaction Date:	**08-07-2020 00:00:00**
Transaction Amount:	**INR 10,000.00**
Debit/Credit:	**Credit**
Transaction Description :	**NEFT-200201900111886-KRISHNA INSTITUTE O**

Note: This is an electronically generated receipt and does not need any signature.

Ref. No: R2E/2020/D/10

Date: 08 June 2020

Dear **Dr. Jayant Pawar**
KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD
Maharashtra

Subject: Regarding Sponsorship for the International Online One Month Internship Training Program, scheduled tentatively from 20th June to 15th July 2020

Dear Sir,

We are happy to have your kind response in regards to our email dated June 04th 2020, for one of the mega event 'one month International Internship and Training Program' to be scheduled from 20th June to 15th July 2020.

Event will have 10+ senior level experts from Industry & Academia including CEOs, Director, Professor and Scientist who will speak on various domain. Timing for the event tentatively will be from 13:00 to 15:00 on all days (except Thursday and Friday).

Since, it is a dedicated program developed for students, faculty, and startups to have an inside insight on R&D, R&I, Innovation, Sustainable and towards having a Tech-Driven economy in line with the Government vision; most of the experts will speak on domain including Greywater, Healthcare, Biomedical, IoT, Embedded, Data Science, Communication, which will be helpful in getting the broader picture for technology development and for contributing toward making India into an R&D hub.

For the sponsorship: KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD

Financial Support: 10,000 INR (TEN THOUSAND ONLY) on account mentioned at **Annexure – I.**

Mode of Involvement: KIMS University will be involved as a **Co-Organizer** for the Program on all Certificates and Printing material from the date of receiving consent.

Certificate Signatory: On all certificates there will be digital signature of organizer and co-organiser. (Dean/Director level authority). In this case, signatory will be from Tech Counsellor, KIMS University (if accepted the sponsorship), TEQIP – III, Tula's Institute and from Uttarakhand Technical University.

Benefits to Student: As discussed with the other Organiser (Tula's Institute & Tech Counsellor); first 20 registration (Faculty/Students) from the KIMS University will be eligible for 'Free Registration'. Rest, all will be eligible as per **Annexure II.**

Please note that since we want to make it a highly interactive event for high learning, total of maximum 200 participants will only be allowed to register from all source, hence discounts, registration will be applicable till availability of the seats. Therefore, We request your student and faculty to register on or before availability of the seats. Program date may shift by one week depending upon expert schedule.

We look forward to hearing for your kind and affirmative response.

With Best Regards

Renu Thapliyal
Managing Director | Tech Counsellor

Enclosure:

- Annexure – I (Account Detail)
- Annexure – II (Terms for Registration Fee Discount)
- Annexure – III (Brochure with Experts details)

Ref. No: R2E/2020/D/10

Annexure – I

Account Details / GSTIN / PAN	
Name	R2E Technologies Private Limited
Account Number	159405500368
IFSC	ICIC0001594
Branch	Dehradun Rajpur Road
GSTIN	**05AAJCR2929R1ZP**
PAN	AANFT0053B

Annexure – II

Annexure – III

Ref. No: R2E/2020/D/10

MEMORANDUM OF UNDERSTANDING
(MOU)

BETWEEN

Global Indian Nursing Association (GINA) which is the branch of Global Indian Association

AND

Krishna Institute of Medical Sciences "Deemed to Be University's",

Krishna Institute of Nursing Sciences, Karad, Maharashtra, India

I. INTRODUCTION

This memorandum of understanding dated *31.12.2020* between Global Indian Nursing Association (GINA) which is the branch of Global Indian Association and Krishna Institute of Medical Sciences "Deemed to Be University's", Krishna Institute of Nursing Sciences, Karad, Maharashtra, India

Represented by (Principal's name): DR.(Mrs.) Vaishali R. Mohite
Dean, Krishna Institute of Nursing Sciences, Karad

Collectively referred to as **"the Partner".**

II. PREAMBLES:

Global Indian Nursing Association is a non-profitable voluntary digital platform operated from Europe to enhance nursing education and to promote evidence-based nursing practice in India. Whereas Partner is a Nursing education institute which shares the vision and philosophy of respective universities in India has agreed to collaborate in the areas of nursing education, practice development and state and national level community health projects in India.

III. GOAL

A. Education:

1. To identify current and future needs of nursing students/Nursing educators and to implement necessary measures to address the same.
2. To enhance learning experience based on best available evidence and information technology.
3. To address contemporary issues affecting nursing education in India.
4. To establish an achievable model of mechanism for effective communication and collaboration between teaching institutes and hospital management.
5. To encourage nursing students to initiate/participate in QI initiatives through micro-system.
6. To encourage nursing students to be a part of social development projects as a part of a community health nursing curriculum.

B Practice development and Research:

1. To promote evidence-based nursing practice for better patient care and to accelerate clinical prognosis.
2. To address contemporary issues in nursing practice.
3. To share knowledge based on internationally approved up-to-date PPGs and Protocols.
4. To explore mutual clinical and teaching placement opportunities for nursing students, registered nurses, and nursing educators.

IV. AREAS OF COLLABORATION

1. Nursing education
2. Practice development in clinical areas
3. Clinical mentorship
4. Academic/clinical quality improvement initiatives
5. Clinical research
6. Clinical audit
7. Community health projects at district/State/National level projects

V. RESPONSIBILITIES OF GINA

1. Online educational sessions in by various nursing specialists in accordance with Indian nursing universities syllabus.
2. Assistance with implementing evidence-based nursing practice and education.
3. Supporting QI projects as appropriate
4. Assistance to evaluate quality improvement models and strategies and their application to QI at individual and organisational levels.
5. Assistance with implementing SOP, PPGs, and protocols.
6. Assistance with clinical audit and metrics.
7. Building clinical leadership qualities in all students and to equip necessary skills for managing change.
8. Supporting nursing lecturers/tutors to implement clinical mentor and preceptorship programs
9. Assistance with literature review and dissertation

VI. RESPONSIBILITIES OF PARTNER

1. Collaboration with all activities of GINA to meet its objectives as highlighted above.
2. Working as a team and collective efforts to achieve desired goals
3. Effective communication between College/School of Nursing Principals with mutual respect and dignity in delivering online education programs and projects
4. No College/School of Nursing should be charging any fees from any student(s) in any form to avail services offered by GINA
5. It is the responsibility of a participating nursing institute to contribute financial expenses incurred towards digital platforms for delivery of educational programs through webinars, GINA's website/app development and maintenance.
6. Providing human resources for planning, implementation, and evaluation of community health projects at district/state/national level project(s)
7. Coordination and providing necessary assistance to international nursing institutes/organisations / associations in the areas of collaboration as mentioned above.
8. Any other business mutually agreed to meet educational objective(s).

VII. PRINCIPAL CONTACTS

A. Principal contacts of GINA

Name	Country of residency	Contact details
Rajeev Metri	United Kingdom	Phone: +44 7766815383 Email: globalindianassociation2020@gmail.com
Rajendra Irani	Ireland	Phone: 0353 873233793 Email: globalindianassociation2020@gmail.com
Shishir Kore	United Kingdom	Phone: +44 7960023787 Email: globalindianassociation2020@gmail.com
Shivanad Savalgi	United Kingdom	Phone: +44 7948380635 Email: globalindianassociation2020@gmail.com
Surresh Ramaih	United Kingdom	Phone: +44 7929743692 Email: globalindianassociation2020@gmail.com
Thippeswamy Billahalli	United Kingdom	Phone: +44 7720893657 Email: globalindianassociation2020@gmail.com

B. Principal contacts of college/School of Nursing

Name with Title: DR.(Mrs.) Vaishali R. Mohite
Dean, Krishna Institute of Nursing Sciences, Karad

Address; Dean, Krishna Institute of Nursing Sciences, Karad

Contact number : +91-7720919003

Email: kinsprincipal@rediffmail.com

(Note: Principal Contacts may be changed in writing from time to time by their respective Partners)

VIII. USE OF INTELLECTUAL PROPERTY

The above mentioned both parties agree that any intellectual property, which is ***jointly*** developed through activities covered under this MOU, can be used by either party for non-profit, non-commercial purposes without obtaining consent from the other and without any need to account to the other. All other intellectual property used in the implementation of the MOU will remain the property of the party that provided it. This property can be used by either party for purposes covered by the MOU, but consent will be obtained from the owner of the property before using it for purposes not covered by the MOU.

IX. EFFECTIVE DATES

This MOU shall take effect upon signing by both Parties and shall remain in effect for a period of two (2) years from that date unless earlier terminated. Neither party may assign or transfer all or any portion of this MOU without the prior written consent of the other party. The MOU may be renewed at the end of this period by mutual written agreement by both Parties.

X. AMENDMENTS.

The provisions of this MOU may only be amended or waived by mutual written agreement by both Parties. Any Party may terminate this MOU and any related at any time and for any reason by giving thirty (30) days prior written notice to the other Party. No amendment will be effective unless agreed and signed by both Partners. Such signatures by both Partners may be made by email/fax.

X. NO JOINT VENTURE

Notwithstanding the terms "Partners" and "Partnership", the Partners agree that they are not entering into a Legal Partnership, joint legal venture or other such business arrangement, nor is the purpose of the Partners to enter into a commercial undertaking for monetary gain. Neither Partner will refer to or treat the arrangements under this Agreement as a Legal Partnership or take any action inconsistent with such intention.

XI. DISPUTE RESOLUTION

The Partners hereby agree that, in the event of any dispute between the Partners relating to this Agreement, the Partners shall first seek to resolve the dispute through informal discussions. In the event any dispute cannot be resolved informally within thirty (30) calendar and consecutive days, the Partners agree that the dispute will be negotiated between the Partners through mediation through representative(s) from another Nursing institute who are affiliated with GINA. Neither Partner waives its legal rights to adjudicate this Agreement in a legal forum.

XI. Declaration:

We understand all the clauses in this MOU and hereby agree to the same with effect from the late signed below by both representatives from GINA and Partner.

1	2
Name of association: Global Indian Nursing Association (Branch of Global Indian Association)	***Name of College/School of Nursing:*** **Krishna Institute of Medical Sciences "Deemed to Be University's", Krishna Institute of Nursing Sciences, Karad, Maharashtra, India**
Name of representative from GINA: MR. RAJEEV. K. METRI.	***Name of Principal /Representative:*** **DR.(Mrs.) Vaishali R. Mohite** **Dean,** **Krishna Institute of Nursing Sciences, Karad, Maharashtra, India**
Signature MR. Rajeev. K. Metri GINA	***Signature with official stamp*** DR.(Mrs.) V. R. Mohite M.Sc.(N) Ph.D. D.Litt. Dean / Principal Krishna Institute of Nursing Sciences Krishna Institute of Medical Sciences "Deemed To Be University", Karad.
Date: 17 / 10 / 2020	Date: 31/12/2020

Report on collaboration with

Global Indian Nursing Association (GINA)

Branch of Global Indian association (GIA)

17th October 2020

DR. Vaishali R Mohite, Dean and Principal has taken keen initiative in celebration with ***Global Indian Nursing Association (GINA),*** *Branch of Global Indian association (GIA) which is* a non-profitable voluntary digital platform to enhance nursing education and to promote evidence-based nursing practice in India. With the following objective the initial presentation was carried put to orient the GINAs future plans. Principal, DR. Vaishali R Mohite instructed 3 faculties from Krishna Institute of Medical Sciences "Deemed to Be University's", Krishna Institute of Nursing Sciences, Karad to take participate in the presentation and carry out further communication for effective collaboration and implementation of educational, Research and clinical knowledge to students of KINS. The communication with was started and with convenient time from both the group webinars on various topics will be starting soon.

Objectives:

A. Education

1. To identify current and future needs of nursing students/Nursing educators and to implement necessary measures to address the same.
2. To enhance learning experience based on best available evidence and information technology.
3. To address contemporary issues affecting nursing education in India.
4. To establish an achievable model of mechanism for effective communication and collaboration between teaching institutes and hospital management.
5. To encourage nursing students to initiate/participate in QI initiatives through micro-system.
6. To encourage nursing students to a part of social development projects as a part of a community health nursing curriculum.

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

B. Practice development & Research

1. To promote evidence-based nursing practice for better patient care and to accelerate clinical prognosis.
2. To address contemporary issues in nursing practice.
3. To share knowledge based on internationally approved up-to-date PPGs and Protocols.
4. To explore mutual clinical and teaching placement opportunities for nursing students, Nurses and nursing educators.

What can we get from GINA?

1. Online educational sessions in by various nursing specialists in accordance with Indian nursing universities.
2. Assistance with implementing evidence-based nursing practice and education.
3. Supporting QI projects as appropriate
4. Assistance to evaluate quality improvement models and strategies and their application to QI at individual and organisational levels.
5. Assistance with implementing SOP, PPGs and protocols.
6. Assistance with clinical audit and metrics.
7. Building clinical leadership qualities in all students and to equip necessary skills for managing change.
8. Supporting nursing lecturers/tutors to implement clinical mentor and preceptorship programs
9. Assistance in literature review and dissertation

Mode of delivery:

1. Online presentations, demonstrations by the experts such as advanced nurse practitioner, Clinical nurse specialists, Nurse managers and specialist medical team.
2. Online timed tests
3. Inter-college group projects
4. Debate and quizzes
5. Individual learning contract

(Note: All educational topics will be based on university curriculum)

-Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

What GINA can expect from US?

1. Long term commitment and collaboration from individual teaching institute and its management towards GIA.
2. Signing MOUs with GIA on agreed plans
3. Nominate three teaching staff from each nursing institute to co-ordinate with a plan of action under the supervision of respective college/school Principal.
4. To enrol and co-ordinate with GIA in delivering community health programmes.
5. Promotion of GIA and GINA through their regional, state and national network
6. College/School managements collectively share the expenses incurred towards digital platform such Zoom/MS team business account etc.

Code of conduct:

1. Mutual respect
2. Avoiding conflict of interest and to work towards the common goal
3. Everybody in the group is a leader but not a boss

Resources

1. Time and commitment
2. Sharing the financial burden of the digital platform

Members:

1. **DR. Prabhuswami**
2. **Mrs. Swati Patil**
3. **Mr. Sameer Chowdhari**

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Krishna Institute of Medical Sciences "Deemed to Be University", Karad.

Accredited by NAAC with 'A' Grade (CGPA:3.20 on 4 Point Scale)
An ISO 9001:2015 Certified Institution
NIRF Rankings 2020 - University Ranking 90 , Medical College Ranking 37 .
http://www.kimskarad.in/

Krishna Institute of Nursing Sciences, Karad, (Maharashtra.) India
in collaboration with
Global Indian Nursing Association (GINA), Branch of Global Indian Association (GIA)

International webinar on

JOURNEY OF CARDIAC PATIENT & ADVANCED HEART FAILURE AND MANAGEMENT STRATERGIES

Date: 09/01/2021 at 11.30 am

Chief Patrons

Hon'ble Dr. Suresh J. Bhosale,
Chancellor, KIMSDU, Karad.

Patrons

Hon'ble Dr. Vedprakash Mishra
Chief Advisor to chancellor, KIMSDU, Karad.

Hon'ble Dr. Neelam Mishra
Vice-chancellor, KIMSDU, Karad.

Speaker

Mr Rajeev Krishna Metri
Senior Nurse CCU & Primary PCI Co-Ordinator, NHS Trust, United Kingdom

Chairperson

DR.(Mrs.) Vaishali R. Mohite
Dean, KINS, Karad.

Speaker

Mr. Shishir Kore
Lead Ventricular Assist Devices Coordinator
Manchester University Hospitals:

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Krishna Institute of Nursing Sciences, Karad, (Maharashtra.) India
in collaboration with
Global Indian Nursing Association (GINA), Branch of Global Indian Association (GIA)
International webinar on
JOURNEY OF CARDIAC PATIENT &
ADVANCED HEART FAILURE AND MANAGEMENT STRATERGIES
Date: 09/01/2021 at 11.30 am

Krishna Institute of Nursing Sciences, Karad, (Maharashtra.) India, CONDUCTED International webinar in collaboration with, Global Indian Nursing Association (GINA), Branch of Global Indian Association (GIA) on JOURNEY OF CARDIAC PATIENT & ADVANCED HEART FAILURE AND MANAGEMENT STRATERGIES ON 09/01/2021 at 11.30 am. Speakers were Mr. Rajeev Metri, Senior Nurse CCU, Primary PCI coordinator NHS trust, United Kingdom and Mr. Shishir Kore Specialist nurse for organ retrieval, heart and lung transplant department, Manchester University hospital United Kingdom.

Introductory speech was given by DR. (Mrs.) Vaishali R. Mohite Dean, KINS, Karad in her speech she explained the development of nursing institute right from the beginning and how nurse can contribute to overall development of human in general.

Journey of Cardiac Patient Role of Nurse was well explained by **Mr. Rajeev Krishna Metri**, Senior Nurse CCU & Primary PCI Co-Ordinator, NHS Trust, United Kingdom "The initial goal for all patients is to achieve decongestion, primarily through the use of intravenous (IV) diuretics, with patients monitored daily to assess their trajectory. When nearing successful decongestion, the focus of treatment shifts toward re-construction of the chronic regimen to maintain freedom from re-congestion and improve long-term outcomes. The hospitalisation provides a pivot point from which to set the patient on the best path with the triad of renin-angiotensin inhibition (for some patients paired with neprilysin inhibition), for many patients including separate therapy with mineralocorticoid receptor antagonists, and titration of beta blockers. It is crucial to recognise that optimal titration of these agents is a stepwise process that will take place over weeks but that can be re-constructed and mapped during hospitalisation. Cardiac nurses play a critical role in the prevention, diagnosis and treatment of heart disease and other cardiovascular conditions. As a Cardiac nurse, I support and treat patients who have or experience various conditions of the cardiovascular system, such as heart attack, angina, and heart failure. A cardiac nurse certification can lead you deeper into the cardiovascular specialty. Cardiac nurse practitioners assess patients, educate patients and families about chronic cardiovascular diseases and their treatment plans and analyze lab work or radiology results to create a plan of care. As a cardiac nurse practitioner, you could even work in a private practice cardiology clinic, seeing your own patients.

- Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Advanced Heart Failure and Management Strategies highlighted by **Mr. Shishir Kore,** Lead Ventricular Assist Devices Coordinator, Manchester University Hospitals: NHS Foundation Trust. UK. He said Heart failure is a common clinical syndrome and a global health priority. The burden of heart failure is increasing at an alarming rate worldwide as well as in India. Heart failure not only increases the risk of mortality, morbidity and worsens the patient's quality of life, but also puts a huge burden on the overall healthcare system. The management of heart failure has evolved over the years with the advent of new drugs and devices. This document has been developed with an objective to provide standard management guidance and simple heart failure algorithms to aid Indian clinicians in their daily practice. It would also inform the clinicians on the latest evidence in heart failure and provide guidance to recognize and diagnose chronic heart failure early and optimize management. Medical care for heart failure includes a number of nonpharmacologic, pharmacologic, and invasive strategies to limit and reverse its manifestations. Depending on the severity of the illness, nonpharmacologic therapies include dietary sodium and fluid restriction; physical activity as appropriate; and attention to weight gain. Pharmacologic therapies include the use of diuretics, vasodilators, inotropic agents, anticoagulants, beta-blockers, and digoxin. Invasive therapies for heart failure include electrophysiologic intervention such as cardiac resynchronization therapy (CRT), pacemakers, and implantable cardioverter-defibrillators (ICDs); revascularization procedures such as coronary artery bypass grafting (CABG) and percutaneous coronary intervention (PCI); valve replacement or repair; and ventricular restoration. The most important first step for the management of these patients is to thoroughly evaluate and ascertain that the diagnosis of advanced HF is correct. It should be confirmed that there are no treatable etiologies or alternative explanations (including non-adherence to medications, sodium restriction, and/or daily weight monitoring) for the advanced symptoms. Key clinical events or findings that can help in the identification of patients with advanced HF Early diagnosis of HF is important to initiate appropriate treatment to reduce mortality, hospitalizations and healthcare costs. However, the diagnosis can be challenging at times as not all HF patients exhibit typical symptoms and neither do all patients who have seemingly typical symptoms have HF.

Mr. Mahesh Chendake dept. of Medical Surgical Nursing, KIMSDU,KINS ,Karad. India coordinated the session.

KRISHNA INSTITUTE OF NURSING SCIENCES ★ KIMSDU KARAD

DR. (Mrs.) Vaishali R. Mohite
Dean
Krishna Institute of Nursing
School of Nursing

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

महाराष्ट्र MAHARASHTRA ◑ 2019 ◑ VH 254808

जोडपत्र १ व २ /Annexure-I & II

दाक विक्री कारण-
Reason of sale stamps and Amount

Stamp Purchasers Name

Serial No and Date
मुद्रांक विक्री नोंदवही क्रमांक

Stamp Purchasers Sign.
मुद्रांक विक्रेता-श्री. कृष्णराव दिनकर गायत्र

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

दिनांक 9/10/2019

Memorandum of Understanding for Academic Collaboration between Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and College of Engineering, Pune (COEP)

Preamble

Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and College of Engineering, Pune (COEP) appreciate each other contribution in the field of academic and are of opinion that academic collaboration between the two shall be of mutual benefit to both the institutes and to the students of medical stream and engineering

Objectives:-

The collaboration shall aim to facilitate creation and advancement of knowledge with frequent nitration to included but not limited to the following points.

1. Explore creation of interdisciplinary knowledge with integration of medical sciences and engineering technology
2. Exchange the faculty for bilateral interdisciplinary learning.
3. Promote collaborative interdisciplinary research and development.
4. Merit based permission for use of each other for researcher and PhD students.
5. Exchange student visit to enable medical student to acquire engineering knowledge that can be applied to add value to engineering profession.
6. Organizing CME, seminars, conference, and workshops of mutual interest.
7. Invite each other's faculty.
8. Conduct research training programs.

Detailed terms & conditions for each activity shall be decided on mutual consent prior to planning & exchanging of the activity.

Co-Ordination

Each institute shall appoint one member of faculty to coordinate programs on its behalf. A coordination committee consisting of two seiner officers, one teaching faculty and one is administrative staff from each institute shall periodically review & indenting ways to strengthen coordination between two institutions.

Tenure

This Memorandum of Understanding takes effect from the date of it signed by representatives of the two institutions and will be remain valid for five years period However the earlier Memorandum of Understanding was expired on 25/03/2019 but the collaborative activity was very much in force during the transitory period therefore as this memorandum of understanding is signed on this date i.e.18/11/2019 but will be considered to effective for further five years from the date of expiry of this memorandum of understanding. Either institutions may be terminated the Memorandum of Understanding by giving written notice to other institutions three months in advance.

Arbitration Clause

Each activity will be planned and executed on mutually agreeable terms & conditions and therefore there is no likely hood of any dispute. However any dispute arise, the Vice Chancellor Krishna Institute of Medical Sciences "Deemed to be University", Karad **(KIMSDU)** & Hon'ble Director, College of Engineering Pune **(COEP)** will jointly resolve in spirit of independence, mutual respect & shared responsibility.

PARTIES

The Registrar

Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

For and on behalf of
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad.

WITNESS

1. Dr. D. K. Agarwal

2._____

Date:-

The Principal

Director
College of Engineering, Pune.
College of Engineering
Pune-411005.

For and on behalf of
Board of Management
College of Engineering, Pune

WITNESS

1. Prof. M. J. Rathod

2._____

Date:-

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University
Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist :Satara (Maharashtra State) Pin : 415539Tel : 02164-241555-8 Fax: 02164-243273/242195
Website: E-mail:

KIMSDU/DR/917/2020 Date: - 16/11/2020

To
The Director College of Engineering (COEP),
Pune.

Subject: Technology transfer as a joint collaborative project

Dear Sir,

With reference to above cited subject in regard to Sterilizer which has come out as a joint Innovative projects, with its own novelty.

I have already shared a document with a technical report in the format as prescribed by Pune University except few entries which are to be filled after the mutual discussion, as I have already discussed with our Honorable Chairman sir, rest of the things can be finalized with your good self to proceed further.

As I am leaving for Nagpur on 18th November, it shall be highly appreciated if we could meet in your office at about 10:30 am.

Kindly let us know about your availability to finalize the schedule.

Wishing you a Happy Diwali.

Agarwal
Dr. D. K. Agrawal
Additional Research Director

Cc: Dr. JayantPawar
Dr. D. L. Sonawane

Gmail

Trupti Patil <truptivp2010@gmail.com>

Fw: Collaborative research and development of UV SEVAK 360°

3 messages

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Trupti Patil <truptivp2010@gmail.com>

Sun, Feb 28, 2021 at 2:51 PM

----- Forwarded message -----
From: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Prof. B. B. Ahuja <director@coep.ac.in>
Sent: Saturday, 24 October, 2020, 12:09:40 pm IST
Subject: Re: Collaborative research and development of UV SEVAK 360°

Dear Dr. Pawar

Thank you for the documents. I will prepare Electronics Design report and testing report in a week time. I will appreciate if you could share MOU draft for reference. Looking forward to having more such research collaborations in coming time for the benefit to the society.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor and HOD
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coepembeddedlab.com

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Saturday, October 24, 2020 10:46 AM
To: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Prof.B.B.Ahuja <director@coep.ac.in>
Subject: Collaborative research and development of UV SEVAK 360°

Dear Sir,
With reference to our yesterday's meeting at your office regarding testing and technical authentication of our product "UV-SEVAK 360°" developed for quick surface sterilization of hospital utensils. We would be very glad to be associated with your esteemed organization for collaborative research, development and launching of this device. As per the suggestions of Hon'ble Dr. B. B. Ahuja Sir, Director COEP and yourself, we have modified the device for better results. In this regard, we have coated inside of the device with photocatalytic nanomaterials which would enhance the antimicrobial efficacy on exposure of UV light. The device has been authenticated at the microbiology laboratory of KIMSDU and found to have greater antibacterial and antifungal activity in less than two minutes.
As we discuss that the certifications can be obtained for our device from NABL, we shall proceed for the same after the confirmation from higher authorities of KIMSDU and COEP.
I herewith attached the technology report and microbiology lab testing reports of developed product for your perusal. Please go through the same and give your inputs on the electronic features of the device. Please feel free to modify the attached file if required. The MoU and other formalities will be completed through management of KIMSDU and COEP. As soon as we receive reports and certifications we shall immediately go for technology transfer to NBE Tech, Pune.

Kindly do the needful to enable us to proceed further.

Gmail

Trupti Patil <truptivp2010@gmail.com>

Fw: Final draft of ToT_UV SEVAK

1 message

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Trupti Patil <truptivp2010@gmail.com>

Sun, Feb 28, 2021 at 2:50 PM

---------- Forwarded message ---------
From: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
To: Jayant Pawar <jayantpawar26@gmail.com>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; info@nbetch.in <info@nbetch.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>
Sent: Sunday, 29 November, 2020, 08:07:18 am IST
Subject: Re: Final draft of ToT_UV SEVAK

Dear Dr. Pawar

It looks OK for me, please go ahead for final daft and print.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coep.org.in/coepembeddedlab

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Saturday, November 28, 2020 4:25 PM
To: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; dns.instru@coep.ac.in <dns.instru@coep.ac.in>; info@nbetch.in <info@nbetch.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>
Subject: Final draft of ToT_UV SEVAK

Dear Sir,
PFA final draft of ToT made as per the points received from all the parties. Please go through the same and let me know if any corrections are required before printing it on stamp paper.
Thank you,

Regards,
Dr. Jayant Pawar

Thank you

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Sun, Feb 28, 2021 at 2:51 PM
To: Trupti Patil <truptivp2010@gmail.com>

----- Forwarded message -----
From: Jayant Pawar <jayantpawar26@gmail.com>
To: "dns.instru@coep.ac.in" <dns.instru@coep.ac.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; "director@coep.ac.in" <director@coep.ac.in>
Sent: Saturday, 24 October, 2020, 10:46:30 am IST
Subject: Collaborative research and development of UV SEVAK 360°

Dear Sir,
With reference to our yesterday's meeting at your office regarding testing and technical authentication of our product "UV-SEVAK 360°" developed for quick surface sterilization of hospital utensils. We would be very glad to be associated with your esteemed organization for collaborative research, development and launching of this device. As per the suggestions of Hon'ble Dr. B. B. Ahuja Sir, Director COEP and yourself, we have modified the device for better results. In this regard, we have coated inside of the device with photocatalytic nanomaterials which would enhance the antimicrobial efficacy on exposure of UV light. The device has been authenticated at the microbiology laboratory of KIMSDU and found to have greater antibacterial and antifungal activity in less than two minutes.
As we discuss that the certifications can be obtained for our device from NABL, we shall proceed for the same after the confirmation from higher authorities of KIMSDU and COEP.
I herewith attached the technology report and microbiology lab testing reports of developed product for your perusal. Please go through the same and give your inputs on the electronic features of the device. Please feel free to modify the attached file if required. The MoU and other formalities will be completed through management of KIMSDU and COEP. As soon as we receive reports and certifications we shall immediately go for technology transfer to NBE Tech, Pune.

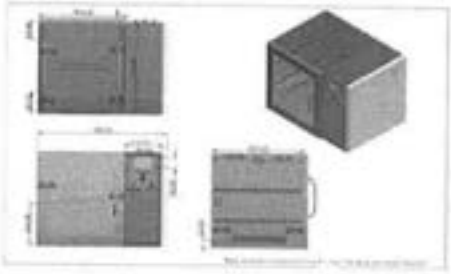
Kindly do the needful to enable us to proceed further.

Thank you

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813

---

4 attachments



UV SEVAK.png
120K

UV Sterilizer_Technology report for COEP.docx
699K

Annexure II (1).docx
531K

Annexure I (1).docx
537K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Sun, Feb 28, 2021 at 2:51 PM
To: Trupti Patil <truptivp2010@gmail.com>

----- Forwarded message -----
From: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
Cc: PA To Suresh Baba Anirudha/Asmita Madam <shreepad3777@gmail.com>; Karad Registrar KIMSDU <registrar@kimsuniversity.in>; Jayant Pawar <jayantpawar26@gmail.com>; "director@coep.ac.in" <director@coep.ac.in>
Sent: Saturday, 24 October, 2020, 08:10:57 pm IST
Subject: Re: Collaborative research and development of UV SEVAK 360°

Dear sir,
We have already signed mou with COEP pune, which also covered collaborative research, Start up , technology transfer and other Academic activities, in fact we can create an Agreement on a particular project covering related issues after approval from both authorities, draft agreement can be prepared as product is approved from your institution and then others like ISO, CEL, NABL as applicable. It will be kind enough if you can get it approved from respected Ahuja sir and other related authorities, looking forward your response.
Dr pawar is already in consultation with you.
With Warm regards.

cc PA to honourable Chairman

. Registrar KIMSDU.

Dear Dr. Pawar

Thank you for the documents. I will prepare Electronics Design report and testing report in a week time. I will appreciate if you could share MOU draft for reference. Looking forward to having more such research collaborations in coming time for the benefit to the society.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor and HOD
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coepembeddedlab.com

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Saturday, October 24, 2020 10:46 AM
To: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Prof.B.B.Ahuja <director@coep.ac.in>
Subject: Collaborative research and development of UV SEVAK 360°

Dear Sir,
With reference to our yesterday's meeting at your office regarding testing and technical authentication of our product "UV-SEVAK 360°" developed for quick surface sterilization of hospital utensils. We would be very glad to be associated with your esteemed organization for collaborative research, development and launching of this device. As per the suggestions of Hon'ble Dr. B. B. Ahuja Sir, Director COEP and yourself, we have modified the device for better results. In this regard, we have coated inside of the device with photocatalytic nanomaterials which would enhance the antimicrobial efficacy on exposure of UV light. The device has been authenticated at the microbiology laboratory of KIMSDU and found to have greater antibacterial and antifungal activity in less than two minutes.

As we discuss that the certifications can be obtained for our device from NABL, we shall proceed for the same after the confirmation from higher authorities of KIMSDU and COEP.
I herewith attached the technology report and microbiology lab testing reports of developed product for your perusal. Please go through the same and give your inputs on the electronic features of the device. Please feel free to modify the attached file if required. The MoU and other formalities will be completed through management of KIMSDU and COEP. As soon as we receive reports and certifications we shall immediately go for technology transfer to NBE Tech, Pune.

Kindly do the needful to enable us to proceed further.

Thank you

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813

Gmail

Trupti Patil <truptivp2010@gmail.com>

Fw: COEP Logo

1 message

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Trupti Patil <truptivp2010@gmail.com>

Sun, Feb 28, 2021 at 2:52 PM

---------- Forwarded message ---------
From: Jayant Pawar <jayantpawar26@gmail.com>
To: research@kimsuniversity.in <research@kimsuniversity.in>
Cc: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Sent: Tuesday, 3 November, 2020, 11:39:44 am IST
Subject: Fwd: COEP Logo

Dear Sir,
Following is the email received from COEP for UV SEVAK 360. They have sent me the logo of COEP to be added on to the product and info video.

---------- Forwarded message ---------
From: **dns.instru@coep.ac.in** <dns.instru@coep.ac.in>
Date: Mon, 2 Nov 2020 at 11:20 PM
Subject: COEP Logo
To: Jayant Pawar <jayantpawar26@gmail.com>

Dear Sir

Video Looks good, I will be happy if you could add more on COEP contribution and Collaborative efforts from COEP side. Please find attached high quality COEP Logo. I have started work and I hope it will be completed by weekend.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coep.org.in/coepembeddedlab

--
Regards,
Dr. Jayant Pawar

COEP New Logo.jpg
161K

Gmail

Trupti Patil <truptivp2010@gmail.com>

Fw: Academic Collaboration

1 message

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Trupti Patil <truptivp2010@gmail.com>

Sun, Feb 28, 2021 at 2:53 PM

---------- Forwarded message ---------
From: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>
To: Dinesh Agrawal <dkagarwal_1512@yahoo.co.in>
Sent: Friday, 8 November, 2019, 02:46:27 pm IST
Subject: Fwd: Academic Collaboration

---------- Forwarded message ---------
From: **Research Krishna Institute of Medical Sciences University** <research@kimsuniversity.in>
Date: Tue, Oct 22, 2019 at 4:49 PM
Subject: Academic Collaboration
To: Bhavna Ahuja <ahujabhavna93.ba@gmail.com>

To,
The Director,
COEP, Pune

Subject: Academic Collaboration

Dear Sir,

We have signed a MoU for academic collaboration between our institution and your esteemed institution on 26.03.2012 for a period of 5 years under the signature of then Director of COEP Dr. A. D. Sahastrabudhhe and was signed by you in the capacity of then Dy. Director. As the MoU was for 5 years which expired on 25.03.2017.

Sir, our students and faculty members are benefited time to time while exercising their academic and research activities and by conducting many more activities during the said period.

Our institution is interested in extending the MoU in the form of academic collaboration for further 5 years prospectively from the date of signing. I am hopeful for a positive reply for the benefit of academic society as a whole. An early action in the form of your reply shall be highly appreciable.

With regards,

Attached: MoU for academic progression between KIMSDU, Karad and COEP, Pune for your ready reference.

Dr. D. K. Agrawal
Add. Director of Research
KIMSDU, Karad

attachments (1).zip
813K

UV-SEVAK360° for Quick Surface Sterilization

1. Technology Description

UV sterilization technology is available for more than 40 years and mainly used for water treatment at household and industrial levels, however, limited attention was given for its use in sterilization in medical field. Nevertheless, its significance in hospital set-ups got highlighted in recent Covid-19 pandemic for effective inactivation of virus particles from hospital areas, utensils and portable medical equipment as quickly as possible. International Ultraviolet Association proposed that a dose of 40 $mJ \cdot cm^{-2}$ of 254 nm light can kill 99.99% of any pathogenic microorganism on surface of object within few minutes.

2. Features of UV-SEVAK360°

a) Germicidal features

- Use of 254 nm germicidal radiation which is close to peak ultraviolet light absorption of nucleic acids i.e. 265 nm.
- Use of 4 UV-C lamps (11 W each) having specific UV-C wattage of 2.6 W each and placed in precise orientation to ensure total UV radiation of 254 nm wavelength of about 10.4 W from all sides on the object to be treated.
- The dose of > 200 $mJ \cdot cm^{-2}$ of 254 nm light given, which is far enough for complete killing of pathogens when compared to recommended dose of light.
- Effective calculated time to kills pathogen for present device is 0.8 min from the distance of 0.4 meter, however, we advice minimum of 1 minute and maximum of

5 minute of exposure to the object for effective inactivation of germs (reported to kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m).

- Use of highly reflecting aluminum tape on inner surfaces of container for effective reflection of radiation in the chamber avoiding 'hiding effect'.
- Coating of racks by mixture of photocatalytic TiO_2 NPs and Ag NPs for further effective microbial inactivation of objects placed on racks.

b) Safety features

- Use of thick metallic box designed for rugged use and to avoid leakage and direct exposure of harmful UVC radiation.
- Safety switch to automatically switch off UVC lamps if the chamber box is accidently opened during operation.

c) Other features

- User friendly interface with quick buttons for time settings and display.
- Simple design for easy servicing and maintenance whenever necessary.
- Spacious volume of more than 40 liters for treating bigger medical equipment and tools.
- This sterilization box can also be used for household sterilization purposes (for items such as wallets, belts, mobiles, laptops, tablet phones, toys, packaged grocery items, may fruits and vegetables, etc), at jewelry shops, at take-away restaurants, at toy shops, etc.

Sr. No.	Objects	Approximate treatment time (min)
1.	Wallet, Belt, Mobile, Goggle, watches	1 min
2.	Laptop, Tablet phone, laptop bag, purse	2 min
3.	Jewelry items	2 min
4.	Children utensils and Toys	2 min
5.	Kitchen utensils	3-5 min
6.	Packaged grocery items, fruits and vegetables	3 min
7.	Medical equipments (Thermometer, IR thermometer, pulse-oxymeter, BP apparatus, etc)	2-3 min
8.	Surgical and dentistry tools	3 min

3. Specification Sheet of UV-SEVAK 360°

Sr. No.	Parameters	Specifications
1	UVC Tube light	Philips (Made in Poland) TI Mini UVC Germicidal Lamp
2	Chokes	Philips EBS chokes
3	Holder	BJB (Made in Germany) UV stabilized
4	UVC wavelength	254 nm
5	Number of tubes	Four (11 W each)
6	UV-C emission	Total 10.4 Watts (from 4 tubes)
7	Dose of UV-C	~ 200 $mJ \cdot cm^{-2}$ (average expected dose for killing 99.99% microorganisms is 40 $mJ \cdot cm^{-2}$)
8	Efficiency testing and Certification	Antibacterial and antifungal testing: Microbiology Laboratory at KIMSDU, Karad. Electrical and structural testing: Department of Instrumentation and Control, CoEP, Shivajinagar, Pune.
	Sterilization time	< 1 minute for virus inactivation (as per published literature)*, 2 minutes for bacterial contaminants and 3 minutes for fungal contaminants (tested and approved by the KIMSDU, Karad)
9	Lamp usage life	approx. 9000 hrs
10	Operating voltage	AC 220-240V/ 50Hz
11	Utility space	~ 60 liters
12	Safety	Safety door switch
13	Operating type	Continuous/timer
14	Material used	Rust free Stainless Steel body with powder coating from outside and highly reflecting surface from inside.
15	Approx. Weight	~ 22 Kg
16	Box Dimensions	620 mm x 400 mm x 400 mm
17	Warranty	1 Year. Warranty is for faulty parts/components and not for physical damage during use, transport, accident, etc.

USER Manual

Part1: Ste-by-step guide to use UV Sevak 360° sanitizer box

Step 1: Switch ON the power supply. All the indicator lamps will glow. Display will show last set time or 1:00 as default time setting which is the minimum time that can be set.

Step 2: Press UP arrow key to increase the setting time. Press DOWN arrow key to decrease the setting time. Each pressing of UP and DOWN arrow key can increase or decrease the time setting by one minute.

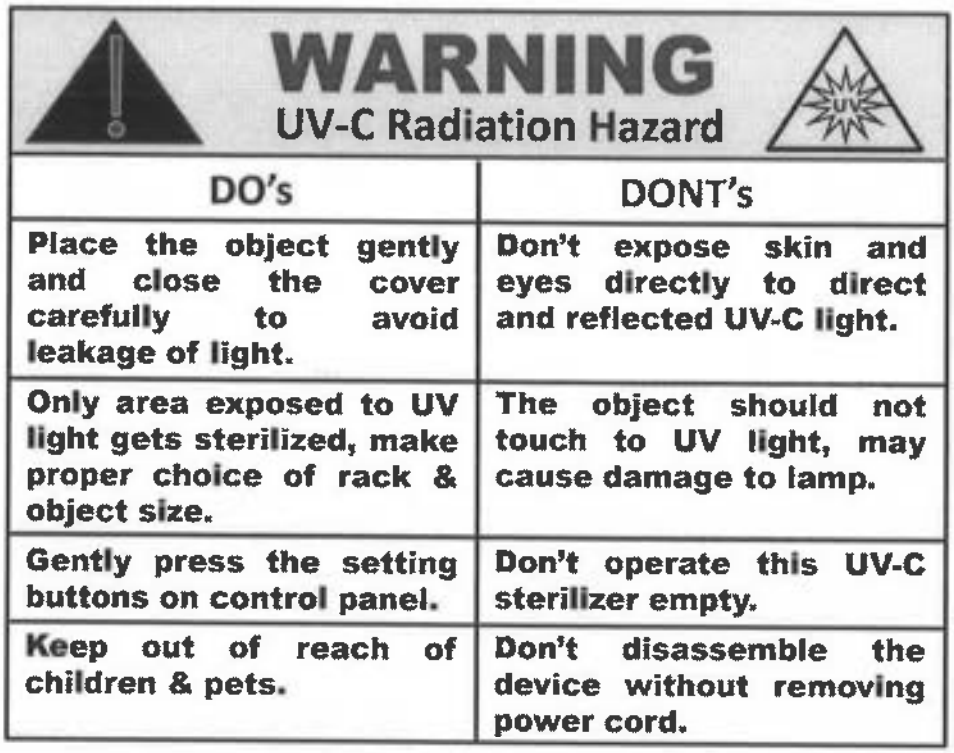
Step 3: After setting the desired time, press ON/OFF arrow key once to switch ON the Power to the lights. You will see glowing of the indicator lamp below ON/OFF arrow key. (Note: You can also observe small light glow in a small gap between the door and the cabinet near the handle to ensure that UV lights are glowing inside the cabinet.)

Step 4: 10 seconds prior to the end of Set timing, warning buzzer will start to beep. At the end of the process, buzzer sound will stop and indicator lamp below ON/OFF arrow key will stop to glow. After this, it is safe to open the box.

Important Notes:

1. You can change (increase and decrease) the timer setting during the operation just by pressing the UP and DOWN arrow keys respectively.
2. If the door is opened during the operation, UV lights will automatically OFF and process will stop unless the door is closed again. The process will again start from the time where it was interrupted by opening the door. The process can be reset by pressing the ON/OFF arrow key once.

Part 2: Safety Instructions



WARNING UV-C Radiation Hazard	
DO's	DONT's
Place the object gently and close the cover carefully to avoid leakage of light.	Don't expose skin and eyes directly to direct and reflected UV-C light.
Only area exposed to UV light gets sterilized, make proper choice of rack & object size.	The object should not touch to UV light, may cause damage to lamp.
Gently press the setting buttons on control panel.	Don't operate this UV-C sterilizer empty.
Keep out of reach of children & pets.	Don't disassemble the device without removing power cord.

Research and Developed by

1. Krishna Institute of Medical Sciences "Deemed to be University" (KIMSDU), Malkapur, Karad, Maharashtra 415539.
2. Department of Instrumentation and Control, College of Engineering Pune (CoEP), Shivajinagar, Pune.

Produced and Marketed by

1. **NBE TECH**

   Head Office: NBE TECH, W. No. 5, H, No. 2417, Shegaon Road, Near Petrol Pump, Telhara, Dist Akola - 444108.

   Pune Office: Pashan Sutarwadi road, Pashan, Pune -411021, India.

   Ph: 7756065497, Website: www.nbetech.in, Email: info@nbetech.in

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University
Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist : Satara (Maharashtra State) Pin : 415539 Tel : 02164-241555-8 Fax: 02164-243273/242195
Website : www.kimskarad.in E-mail: research@kimskarad.in

KIMSDU/DR/932/2020 Date: 7/12/2020

To,

Mr. Swapnil Awachar,

Proprietor, NBE TECH,

Pashan-Sutarwadi Road, Pune-411021

Subject: Sanction of Incubation Support to your Startup

This is in reference to your application for the incubation program at our campus of Krishna Institute of Medical Sciences "Deemed To Be University", Karad.

The Incubation Centre has necessary expertise to offer advisory services to your startup to help commercialize your innovation. The Incubator can provide a variety of services like business planning, mentoring and assistance in fund raising and facilitate the startup to build a commercially viable enterprise.

We are happy to confirm your selection for above and provide incubation support for taking your idea/venture to the next level.

Thanking You,

With Best Regards

received

Dr. D. K. Agarwal
Additional Director of Research,
KIMSDU, Karad

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA © 2019 © WN 268010

जोडपत्र १ व २ /Annexure-I & II

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

मुद्रांक विक्री कारण- Reason of sale stamps and Amount: करारपत्र

मुद्रांक विकत घेणाऱ्याचे नाव व पत्ता- Stamp Purchasers Name: डॉ. [illegible]

हस्ते असल्यास त्याचे नाव व पत्ता Stamp Purchasers Name

मुद्रांक विक्री नोंदवही नंबर Serial No and Date: 7041 दिनांक 24/9/2020

मुद्रांक विकत घेणाऱ्याची सही Stamp Purchasers Sign.

मुद्रांक विक्रेता-श्री. [illegible]
परवाना क्र. [illegible]
[illegible]

मुद्रांक विक्रेत्याची सही

[illegible]

SUB TREASURY OFFICER KARAD
09 SEP 2020

Transfer of Technology Agreement

This Technology Transfer ("ToT") Agreement made and entered into on this 10th day of December, 2020.

BETWEEN

Krishna Institute of Medical Sciences "Deemed to be University", Karad-415539, (hereinafter referred to as 'KIMS'), through its Registrar, referred as "First Party"

AND

College of Engineering Pune, Shivajinagar, Pune-411005, an Autonomous Institute of Govt. of Maharashtra (hereinafter referred to as 'COEP'), through the Director, referred as "Second Party".

AND

M/S. NBE Tech, Pashan-Sutarwadi Road, Pune-411021, through their Proprietor referred as "Third Party".

AND

WHEREAS the COEP is an institution of national importance providing education and research in various areas of Science, Engineering and Technology.

AND

WHEREAS the KIMS is an institution imparting education in various field of medical health sciences including allied sciences.

AND

WHEREAS NBE Tech Pvt. Limited company and in the business of design, manufacture, marketing and sales and suppliers of scientific products to the Indian and the customers abroad;

AND

WHEREAS the COEP has been doing research, development and consulting assignments in various frontline areas including, Embedded Systems, Electronic Design, Medical Equipment Design, 3-D Printing, Mechanical Designs, Civil and Structural Designs, Data Analytics, Machine Learning, Industrial Automation, etc..

AND

WHEREAS KIMS has been in research, and development in the field of medical and health sciences including microbiology and biotechnology with medical assistance and research expertise

AND

WHEREAS M/S. NBE-TECH has been working on Design, Development, Manufacturing and Sales of scientific products.

AND

WHEREAS all the three parties COEP, KIMS and NBE-TECH desire to spell out the terms and conditions in respect of this collaboration and to enter into a Technology Transfer (ToT) Agreement for that purpose.

NOW IT IS AGREED BY AND BETWEEN THE PARTIES AS UNDER

1. BACKGROUND

The hospital-acquired infections, also known as nosocomial infections can be acquired within a hospital environment. The contact surfaces mainly equipment and furniture of hospitals are the main culprits in transmission of nosocomial pathogens such as multidrug-resistant pathogens including methicillin-resistant Staphylococcus aureus (MRSA), extended-spectrum beta-lactamase-producing bacteria (ESBL) e.g., Enterobacteriaceae such as Klebsiella, Escherichia coli, vancomycin-resistant enterococci (VRE) e.g., E. faecalis, E. faecium, etc[Drees et al., 2014]. The spread of these pathogens usually occurs through hand tools of healthcare practitioners, high-touch sites inside patient rooms, hospital utensils contaminated by droplets from infected patients and interventional procedures. The most common sites of infections are the surgical wounds, bloodstream and urinary tract. Air-borne transmission from infected patients (influenza, H1N1 and SARS COV-2, etc) is also a source of infection of such utensils and equipment.

At present such pathogens are neutralized by conventional sterilization (e.g. autoclaving, dry heat sterilization etc.) and chemical sanitization methods (e.g., ethanol, phenolic compounds, chlorites etc.). However, these methods are time consuming practices and may not be feasible for electronic equipment like IR

thermometer, pulse oximeter, stethoscope, ECG electrodes and other hand tools used in OPDs, masks, stationary and dental equipment during surgery etc. Moreover, chemical treatment is not environmental friendly, may damage electronic equipment and develop resistance in pathogens. Several recent studies have demonstrated that an automated ultraviolet-C (UV-C) device may be effective as an adjunctive method for disinfection of healthcare associated pathogens [Nerandzic et al., 2012]. However, the use of germicidal UVC lamps for disinfection at the surgical site as well as sterilizing medical equipment in open environment is not preferred owing to UV radiation being both carcinogenic [Granstein et al., 2004] and cataractogenic [Wegener, 1995]. Therefore, there is a need to carefully develop the UVC light based sterilization chamber which is safe to humans while killing healthcare associated pathogens from surfaces of hospital utensils and portable medical equipment. Herein, we propose to design and develop a metallic double walled UV-C chamber for quick surface sterilization of hospital utensils and portable medical equipment for inactivation of SARS-CoV-2 and other nosocomial pathogens, so that utensils can be reuse again in few minutes. However, CDC and NSF International reported that the effectiveness of UV light for surface sterilization is dependent on factors like intensity, distance and exposure time [Dustin Grove, September 14, 2020]. For instance, Xenex's disinfecting robot, called LightStrike, can kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m. According to the International Ultraviolet Association, it is generally accepted that a dose of 40 mJ·cm−2 of 254 nm light will kill at least 99.99% of "any pathogenic microorganism [Mackenzie, D., 2020].

2. SCOPE/TERMS OF COLLABORATION

2.1 The ToT agreement entitled to provide all the technical details about product on as is where is basis in order to achieve smooth manufacturing practices (details given in technology report).

2.2 The charges for authentication and certifications of the product from competent authority shall be paid by "First party".

2.3 The third party shall not alter or dilute the quality of product as per the specifications made under the document of ToT which has been authenticated and approved by competent authorities.

2.4 The first and second party shall not enter into the manufacturing or marketing of the product directly or indirectly.

2.5 The third party has willfully agreed to pay Rs. 4, 00,000/- to first and second party against the initial payment towards the transfer of technology. Out of total amount M/S. NBE-Tech shall be payable for Rs. 2, 50,000/- to the first party and Rs. 1, 50,000/- to second party.

2.6 Third Party, M/S. NBE-Tech shall have to pay 5% of total annual turnover of the product (2.5% to each party, First Party and Second Party) as a royalty at the end of each financial year from the date of signing of this ToT agreement.

2.7 The first and second party shall grant the design details of ToT agreement to the third party after the signing of this ToT agreement.

2.8 Any kind of breach in the conditions which has been mentioned in this document shall amount to withdrawal of this agreement by First and Second party.

3. INTELLECTUAL PROPERTY RIGHTS AND PUBLICATIONS (IF ANY)

3.1 Notwithstanding anything contained to the contrary, the entire rights, title and interest in any intellectual property including but not limited to patent and publications emerging out of the collaborative research to be carried out under this ToT ("IP") agreement, will be jointly owned by COEP, KIMS and NBE-TECH, if it is during the research and Development work.

3.2 The exclusive right of business and product development out of the patent, development will remain with COEP, KIMS and NBE-TECH and shall not license it to any other third party.

3.3 The fees towards filing and grant of Patents will be borne by COEP KIMS and NBE-TECH equally, if the original inventors are from both the parties. Royalty earned through such patents, if any, will be jointly shared by COEP, KIMS and NBE-TECH.

4. CONFIDENTIALITY

4.1 The term "Confidential Information" shall mean any information disclosed by one party ("Discloser") to the other ("Receiver"), pursuant to this ToT agreement or otherwise, which is in written, graphic, machine readable or other tangible form and is marked as 'Confidential' or 'Proprietary' or in some other manner to indicate its confidential nature. Confidential information may also include oral information disclosed by one party to the other, pursuant to this ToT agreement, provided that such information is designated as Confidential at the time of disclosure and reduce to a written summary by the disclosing party, within 30 days after its oral disclosure, which is marked in a manner to indicate its confidential nature and delivered to the receiving party.

4.2 For the term of this ToT agreement, each party, shall treat as confidential all confidential information of the other party, shall not use such confidential information except as expressly set forth herein or otherwise authorized in writing, shall implement reasonable procedures to prohibit the disclosure, unauthorized duplication, misuse or removal of the other parties confidential information and shall not disclose such confidential information to any third party except as may be necessary and required in connection with the rights and obligations of such party under this ToT agreement. Without limiting the foregoing, each of the parties shall use at least the same procedures and degree of care which it uses to prevent the disclosure of its own confidential information of like importance to prevent the disclosure of confidential information disclosed to it by the other party under this ToT agreement.

4.3 **Confidential information shall not include the information which,**

i) was generally known and available at the time it was disclosed or becomes generally known and available through no fault of the receiver, was known to the recipient of such information, without restriction, at the time of disclosure as shown by the files of the recipient in existence at the time of disclosure,

ii) is disclosed with the prior written approval of the disclosure,

iii) was independently developed by the receiver without any use of the confidential information, and by employees and other agents of the receiver who have not been exposed to the confidential information, provided that the receiver can demonstrate such independent development by documented evidence prepared contemporaneously with such independent development.

iv) becomes known to the receiver, without restriction, from a source other than the discloser without breach of this ToT agreement by the receiver and otherwise, not in violation of the discloser's rights.

v) In addition, each party shall be entitled to disclose the other parties confidential information to the extent such disclosure is requested by the order or requirement of a Court, administrative agency, or other governmental body, provided that the party required to make the disclosure shall provide prompt and advance notice thereof, to enable the other party to seek a protective order or otherwise prevent such disclosure.

4.4 The parties shall, upon expiration of this ToT agreement, promptly deliver to each other, all material in its or its employees' possession or control containing such confidential information.

4.5 The provisions of this Clause shall survive the expiration or termination of this ToT agreement for a period of FIVE (5) years (Dec. 2020 to Dec. 2025).

5. RELATIONSHIP OF THE PARTIES

Nothing in this ToT agreement is intended to create a partnership, joint venture or other form of relationship between the Parties. Neither party makes any representations or warranties, whether express or implied. Neither party shall be liable to other for any indirect, consequential or any damages, whatsoever.

6. EFFECTIVE DATE AND DURATION OF THE TOT AGREEMENT

This ToT agreement shall be effective from the date it is signed by the parties hereto. The duration of the ToT agreement will be initially for a period of FIVE years from the Dec. 2020, unless or otherwise terminated earlier, as per

Clause 7. This duration can be extended further with mutual consent of all the parties. Early termination or expiry of this ToT agreement shall not affect any sponsorship already committed during the term of this ToT agreement.

7. AMENDMENT TO TOT AGREEMNENT

No amendment to this ToT agreement shall be valid unless the same is made in writing jointly by the parties hereto or their authorized representatives and specifically stating the same to be an amendment to this ToT agreement.

8. TERMINATION OF TOT AGREEMENT

8.1 The ToT agreement shall not be terminated by COEP, KIMS and NBE-TECH during ongoing financial years.

8.2 This ToT agreement can be terminated by any party giving the other party, a prior written notice of not less than 60 days of its intention to do so but without dishonoring any commitment entered into prior to the date of termination notice.

8.3 Despite termination, the parties shall abide by the usual professional ethics and normal code of conduct to maintain the confidentiality of the information and any IPRs.

9. SETTLEMENT OF DISPUTES

Any dispute arising in relation to or in connection with this ToT agreement between the parties shall be resolved by mutual negotiations. In case of any unresolved dispute, the parties shall refer the said dispute for arbitration, to the sole arbitrator appointed by all the Parties and the decision of the arbitrator shall be final and binding on all the three parties. The provisions of Arbitration and Conciliation Act, 1996 shall apply to such arbitration. Such arbitration proceeding shall be held at Pune Jurisdiction.

IN WITNESS WHEREOF both the parties hereto have set their hands, the date and year hereinabove mentioned.

For and behalf of:

College of Engineering Pune:	Signature: **Dr. B. B. Ahuja** **Director**
Krishna Institute of Medical Sciences "Deemed To Be University", Karad:	Signature: **Dr. M. V. Ghorpade** **Registrar**
NBE-TECH, Pune:	Signature: **Mr. Swapnil Awachar** **Proprietor**

Witness:

Signature: Date: 1. Dr. D. N. Sonawane Head of Department, Department of Instrumentation, College of Engineering, Pune, Pune-411005	Signature: Date: 2. Dr. D. K. Agarwal Additional Director Research, Krishna Institute of Medical Sciences "Deemed to be University", Karad-415539
Signature: Date: 3. Dr. Jayant Pawar, Research Associate, Directorate of Research, Krishna Institute of Medical Sciences "Deemed to be University", Karad-415539	Signature: Date: 4. Mr. Shubham Gaikwad, NBE Tech, Pashan-Sutarwadi Road, Pune-411021

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

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महाराष्ट्र MAHARASHTRA

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TREASURY OFFICE KARAD

27 JAN 2020

SUB TREASURY OFFICER KARAD

सत्यमेव जयते

Where there is Rural Wellbeing there is Universal Prosperity

Memorandum of Understanding

Between

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

And

Mahatma Gandhi National Council of Rural Education

1. Krishna Institute of Medical Sciences "Deemed To Be University" Malkapur, Karad, Dist. Satara, 415539, Maharashtra, India, an university declared U/s 3 of UGC Act, 1956 vide notification No.F-9-15/2001-U,3 Of the Ministry Of Human Resource Development-Govt. of India, Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 point scale), An ISO 9001:2015 certified university, hereinafter referred to as "KIMSDU" represented by the Registrar, KIMSDU (which expression shall unless the meaning or context otherwise requires shall mean and include its successors and assigns)of the First Part ; (Hereinafter referred to as KIMSDU) (As First Party)

AND

2. Mahatma Gandhi National Council of Rural Education, Department of Higher Education, Ministry of Human Resource Development, Government of India and having its registered office at Shakkar Bhavan, Fateh Maidan Road, Basheerbagh, Hyderabad (Hereinafter referred to as MGNCRE) (As Second Party) which expression shall, unless repugnant to the context or meaning thereof, mean and include its successors.

3. Whereas KIMSDU and MGNCRE are interested in entering into an MoU with a view of sharing a Common desire to explore extend and strengthen the mutual relationship with well-established academic and Research & Development set up in order to share the facilities and expertise available with each of them, herewith sign this MoU on the Understanding stated in the subsequent paragraphs.

4. Whereas MGNCRE has come forward to sign an MoU with KIMSDU to offer the courses at the UG level in the areas of Rural Management.

5. Responsibilities of MGNCRE

(a) Providing the course curriculum developed by the institute.

(b) Providing the online course content to the students and faculties of KIMSDU.

(c) Allow KIMSDU students to participate in workshops and faculty members to participate in Faculty Development Programs organized by them.

(d) Providing the opportunities of industry-academic meet to the students and faculty members of KIMSDU.

(e) Helping the students for arranging Summer internships and Placement.

(f) Displaying the MoU and Logo in their website.

6. Responsibilities of KIMSDU

(a) Introduce the Rural Management course at the Bachelors level in the university.

(b) Promote the course.

(c) Utilize the course content, curriculum developed by the MGNCRE.

(d) Participate in workshops and Faculty Development Programs organized by the MGNCRE at free of cost.

7. Both the Parties seek to enhance relations and recognize the benefits to be derived from increased collaboration, cooperation and interaction for further promotion.

8. On behalf of First Party **Dr. M. V. Ghorpade, Registrar** will be the point of contact for further correspondence.

9. On behalf of Second Party **Mr. Chethan Babu Chittalkar, Director, Rural Management Program** will be the point of contact for further correspondence.

10. This Memorandum of Understanding shall enter into force on the basis of goodwill and shall not be legally bound.

11. The MoU is valid for a period of five years from the date of signature by both the parties and may be renewed for any other period as shall be agreed on in between the parties. If either Party does not wish to continue this MoU, then such Party provide the other Party of its intention to terminate this MoU, by giving 3 (three) months' notice in writing.

1st Party

Signature :

Dr. M. V. Ghorpade,

Designation: Registrar, KIMSDU

Address: Krishna Institute of Medical Sciences "Deemed To Be University", Karad - 415 539.

Date : 25.02.2020

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

2nd Party

Signature :

Chethan Babu Chittalkar

Designation: Director, Rural Management Program

Address: Shakkar Bhavan, Fateh Maidan Road, Basheerbagh, Hyderabad - 500 004.

Date : 25.02.2020

महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद
MAHATMA GANDHI NATIONAL COUNCIL OF RURAL EDUCATION
(Formerly National Council of Rural Institutes)
Department of Higher Education, Ministry of Human Resource Development, GoI
#5-10-174, Shakar Bhavan, Ground Floor, Fateh Maidan Road, Basheerbagh
Hyderabad – 500 004. India, Ph: 040 – 2321 2120, 2342 2105, Fax: 040 – 2321 2114
सत्यमेव जयते
Where there is Rural Wellbeing there is Universal Prosperity

Lr No. 049/MGNCRE/DHE/MHRD/GOI/SAP/KIMS/WS/19-08-2019

Prof. Neelima A.Malik
Vice Chancellor
Krishna Institute of Medical Sciences
"Deemed To Be University"
Karad, MH, India

Sub: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.

Dear Prof. Neelima A.Malik ji,

Greetings from the Ministry of Human Resource Development!

At the outset, Congratulations for being a Swachh Campus! We share your enthusiasm and sense of achievement for being recognized by the MHRD, GoI. As the Ministry has now selected your esteemed institution Under Swachhta Action Plan 2019 for promoting swachhta in the community, we take pride in announcing our association with you for the fulfillment of the agenda. The task on hand is 100% Achievement in the Practices of Comprehensive Sanitation Management (including ODF) in the 2 adopted villages with which your institution is engaged with. Under Swachhta Action Plan 2019, the following activities are slated for Swachhta Awards this year -

1. Adoption of 2 villages for Comprehensive Sanitation Management and achievement of 100% sanitation
2. Documentation of the efforts and success in these 2 adopted villages in the form of caselet or case study.
3. Video Recording of these 2 adopted villages and stories thereof that will be used as part of academic courses.

These activities will also allow experiential learning for students of Higher Educational Institutions which are going to initiate MBA (Waste Management and Social Entrepreneurship), the curriculum for which has been developed by MGNCRE. The deliverables will allow active involvement in the implementation of the program to ensure achievement of targets set for the villages adopted by you.. *In this regard, we are conducting workshops across the country to finalize the activity plan for the year. We request you to kindly identify a Nodal Officer from your institution who can join us in the one day Consultative workshop planned on* ***30th August 2019 at MGNCRE office (5-10-174, Shakkar Bhavan, Fateh Maidan Lane, Basheer Bagh, Hyderabad)*** *to finalize the activity plan for the year. The details of the workshop will be communicated to you accordingly.*

Our officer Dr Ravi Prakash Singh, Senior Faculty, MGNCRE (Ph. 09873507524) will assist you in this regard.

Thanking you,

Yours sincerely,

Dr. W G Prasanna Kumar
Chairman MGNCRE

CC: SAP Team MGNCRE

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Fwd: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.

2 messages

VC Kimsdu <kimsduvc@gmail.com>
To: Neelima Malik <malik_neelima@yahoo.com>, registrar@kimskarad.in, research@kimsuniversity.in
Tue, Oct 8, 2019 at 2:47 AM

---------- Forwarded message ---------
From: **NARESH Gajam** <gajamnaresh@gmail.com>
Date: Mon, Oct 7, 2019 at 1:10 AM
Subject: Fwd: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.
To: <kimsduvc@gmail.com>

Dear Madam

It is in response to the telephonic conversation we had just now. I am forwarding the mail regarding Swatchata Action Plan (SAP). Please find the trailing mail below for the details

Regards
G Naresh Kumar
Mobile : 7799303499
---------- Forwarded message ---------
From: **Chairman MGNCRE-SAP** <chairmanmgncre.sap@gmail.com>
Date: Mon, Oct 7, 2019 at 1:04 PM
Subject: Fwd: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.
To: <gajamnaresh@gmail.com>

---------- Forwarded message ---------
From: **Chairman MGNCRE-SAP** <chairmanmgncre.sap@gmail.com>
Date: Tue, 20 Aug 2019 at 16:52
Subject: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.
To: <vc@kimskarad.in>

महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद
MAHATMA GANDHI NATIONAL COUNCIL OF RURAL EDUCATION
(Formerly National Council of Rural Institutes)
Department of Higher Education, Ministry of Human Resource Development, GoI
#5-10-174, Shakar Bhavan, Ground Floor, Fateh Maidan Road, Basheerbagh
Hyderabad – 500 004. India, Ph: 040 – 2321 2320, 2342 2305, Fax: 040 – 2321 2114

Lr No. 049/MGNCRE/DHE/MHRD/GOI/SAP/KIMS/WS/19-08-2019

Prof. Neelima A.Malik
Vice Chancellor
Krishna Institute of Medical Sciences
"Deemed To Be University"
Karad, MH, India

Sub: MGNCRE-DHE-MHRD-GOI-Swachhta Action Plan –Workshop- Reg.

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Our officer Dr Ravi Prakash Singh, Senior Faculty, MGNCRE (Ph. 09873507524) will assist you in this regard.

Thanking you,
Yours sincerely,
Dr. W G Prasanna Kumar
Chairman MGNCRE

Attached: Letter to VC

--
Regards
Naresh Gajam

--
Thanking you,

Dr. Mrs. Neelima A. Malik,
Vice Chancellor,
Krishna Institute of Medical Sciences "Deemed to be University", Karad.
Near Dhebewadi Road, Malkapur,
Tal. Karad, Dist. Satara.
Pin Code: 415539
Phone No.: 02164 - 241555/6/7/8.

MGNCRE_Krishna Institute of Medical Sciences.pdf
184K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Mon, Sep 14, 2020 at 6:11 PM
To: Dinesh Agrawal <dkagarwal_1512@yahoo.co.in>

महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद
Mahatma Gandhi National Council of Rural Education
(Formerly National Council of Rural Institutes)
Department of Higher Education, Ministry of Human Resource Development, Government of India

Lr No. 023/MGNCRE/DHE/MOE/GOI/BBA RM/14-10-2020

DR. M.V. GHORPADE
Registrar
Krishna Institute of Medical Sciences
Maharashtra

Sub: MGNCRE-DHE-MOE-GOI/BBA RM Course-wise Workshop/Invitation - Reg.

Dear DR. M.V. GHORPADE,

Greetings from Mahatma Gandhi National Council of Rural Education (MGNCRE), Department of Higher Education, Ministry of Education, Government of India!

We are happy to note that your Institution has incorporated/incorporating BBA in the Rural Management program, which is progressive and motivating. We appreciate your key role in this endeavour.

We are conducting online workshops for orienting the 'Faculty members' in Rural Management courses/subjects to transact them effectively and efficiently. In this regard, please schedule workshops for the faculty members of your institution and the newly admitted students of BBA Rural Management in your esteemed Institution **before 24th October 2020**.

The online workshops focus on the following courses of BBA, 1st Semester, **Foundations of Management and Entrepreneurship, Management Decision Making Tools, Business Analytics, Rural Society and Polity, Ecology and Environment, and also importance of communication in Local Language.**

We appreciate if you please schedule the workshops and let us know. The course materials and all the required information are available on our website www.mgncre.in

Please pass a circular among the faculty members and the students to attend the online workshops and mark us a copy of the same. This will also help us to connect you with Farmer Producer Organizations for the internship of your students and extend professional support to them.

The faculty members will be getting a certificate for successfully completing the workshop from MGNCRE, MOE, GOI.

Our Director Prof. Chethan Chittalkar (Ph:9052907212) email; chethanmgncre@gmail.comwill be conducting these workshops with the help of Resource persons. He might be contacted for further details in this regard.

Once again, we request you to schedule a date from Oct 14 to Oct 24, 2020 for this online workshop and let us know at the earliest.

Please find the enclosed draft schedule of the workshop for your perusal.

Thanking you.

Yours sincerely,

Dr. W G Prasanna Kumar
Chairman MGNCRE

5-10-174, Shakkar Bhavan, Ground Floor, Fateh Maidan Road, Hyderabad - 500 004.
Tel: 040-23212120, 23422105, Fax: 040-23212114, Email: wgp.kumar@gov.in, www.mgncre.in

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Fwd: MGNCRE-DHE-MOE-GOI/BBA RMCourse-wise Workshop/Invitation - Reg

2 messages

KIMSDU, Karad <registrar@kimskarad.in>
To: Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Oct 14, 2020 at 12:46 PM

Thanking You.
Yours Sincerely,

Dr. M. V. Ghorpade
Registrar,
KIMSDU, Karad.

---------- Forwarded message ---------
From: **G Naresh Kumar MGNCRE** <mgncrefdp1@gmail.com>
Date: Wed, Oct 14, 2020 at 10:35 AM
Subject: MGNCRE-DHE-MOE-GOI/BBA RMCourse-wise Workshop/Invitation - Reg
To: <registrar@kimskarad.in>
Cc: <chethanmgncre@gmail.com>

DR. M.V. GHORPADE
Registrar
Krishna Institute of Medical Sciences
Maharashtra

Sub: MGNCRE-DHE-MOE-GOI/BBA RM Course-wise Workshop/Invitation - Reg.

Dear DR. M.V. GHORPADE,

Greetings from Mahatma Gandhi National Council of Rural Education (MGNCRE), Department of Higher Education, Ministry of Education, Government of India!

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Please find the enclosed draft schedule of the workshop for your perusal.

Thanking you.

--
Yours sincerely
Dr WG Prasanna Kumar
Chairman,MGNCRE

---

2 attachments

Workshop Schedule.pdf
256K

Krishna Institute of Medical Sciences.pdf
341K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in> Tue, Nov 3, 2020 at 3:56 PM

Attn: Alate

[Quoted text hidden]

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2 attachments

Workshop Schedule.pdf
256K

Krishna Institute of Medical Sciences.pdf
341K

सत्यमेव जयते

Department of Higher Education
Ministry of Education
Government of India

Where there is Rural Wellbeing
there is Universal Prosperity

Mahatma Gandhi National
Council of Rural Education

Faculty Development Centre

(Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching)

Mahatma Gandhi National Council of Rural Education

Department of Higher Education, Ministry of Education, Govt. of India, Hyderabad

Organises

Online Faculty Development Programme

for Management Faculty of
Universities, Colleges and Higher Educational Institutions On

"Case Discussion Methodology on Rural Marketing and Rural Entrepreneurship"

Under

Pandit Madan Mohan Malaviya National Mission on Teachers & Teaching (PMMMNMTT)

Ministry of Education, New Delhi, Government of India

(All Programmes under PMMMNMTT are valid for promotion under CAS as per the UGC Notification dated 18th July, 2018)

- *Academic upgradation of teachers working in Universities and colleges*
- *Innovation and development in different areas of education.*
- *Focus on the role of Faculty of Higher Education, their areas of responsibility, methods of experiential learning and rural engagement.*

26th-30th November 2020

Registration: https://forms.gle/rDe15Fb1xpL3zKLj6 Email: fdprm.mgncre@gmail.com

About MGNCRE

Mahatma Gandhi National Council of Rural Education under the Ministry of Education in Government of India strives to promote resilient rural India through Higher Education interventions. MGNCRE designs, develops and promotes curriculum inputs for higher education programmes offered by Universities and Autonomous Institutions in India. The higher educational streams of focus for MGNCRE include: Rural Studies, Rural Development, Rural Management, Social Work and Education. The curriculum inputs are both theoretical and practical field-related relevant to rural India.

Vision: To involve higher education curriculum in India in the process of building resilient rural India i.e., "Uthkrisht Gram for Unnat Bharat"

Mission: Formulate and recognise curricular inputs and accredit courses and higher educational institutions, which enable development of sustainable, climate and disaster resilient rural livelihoods.

The Council seeks to strengthen the rural higher education curriculum and the faculty members transacting it. Empowerment of the functionaries will be a well designed corollary. Capacity building and professionalization of Rural Institutes, skill development, entrepreneurship, livelihoods, community initiatives, creativity of local groups and proactive development action constitute the core content of MGNCRE research and interventions. The curriculum development programmes of MGNCRE mainly include Faculty Development Programmes, Workshops and Round table discussions. As part of its proactive and continuing Research and Training endeavour, the MGNCRE has to date initiated Research Projects in different parts of the country.

MGNCRE has established a Faculty Development Centre (FDC) under Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching in its campus in Hyderabad to cater to the Faculty Development needs of all the Central and State Universities on the issues related to Gandhian philosophy and Rural Engagement.

PMMMNMTT- MGNCRE FDC focuses:

- To enable faculty to engage in Case Discussion Methodology for Management (Rural Management) Curriculum transaction
- To ensure that Faculty Members of Teacher Education in various Universities adopt Experiential Learning – Gandhiji's Nai Talim
- To enable faculty to conduct Action Research Project based Curriculum Transaction

Case Discussion for BBA Rural Marketing and Rural Entrepreneurship

Case discussion methodology is essential experiential learning methodology for training in problem solving. Case discussion methodology for promoting management education especially rural management is proposed here. The rural economy has a vast potential for development through micro, social and innovative enterprises. Higher education Institutions need to participate in contributing to Rural Enterprise and Rural Entrepreneurship. It needs capacity building and human resources development in the critical areas of market linkages, rural entrepreneurship, rural technology development, microfinance, livelihoods and skill development, natural resources management, management of agriculture and technical assistance in the areas of health, education, management of village sanitation and infrastructure development.

Thus, a three-year rural management program developed with a multi-disciplinary approach equips the students to tap the emerging and growing opportunities in the public and private domains of rural sector. This program will dwell into specially identified rural oriented courses that cover general principles of management and the core subjects provide students with basic analytical, decision making and inter personal skills.

The context and the focus are rural. This program stands out for its rural engagement component- in-depth rural field exposure, duration and frequency. It has three components of field engagement and learning opportunities for students, covering a Government Organization, an NGO and a commercial rural enterprise like a co-operative or social business enterprise. Vast online repositories through university libraries and other digital media provide a unique ability for Higher Education Institutions to share success and failure case studies and experiences in ways that were unimaginable earlier.

About the FDP

Objectives:

1. To demonstrate various methods of teaching specially Case Teaching Methodology
2. To familiarize with the course structure and curriculum in Rural Marketing and Rural Entrepreneurship
3. To familiarize with the First Semester Subjects in BBA RM
4. To introduce various aspects of Rural Management
5. To explore the opportunities of internship and placement in Rural Management
6. To expose them to employment and entrepreneurship opportunities available in rural management sector

Learning Outcomes:

The participant will be able to:

- ✓ Recognise the need for the course, internalize and take ownership of it
- ✓ Become familiarize with the structure of each course book
- ✓ Transact the course effectively using case methods
- ✓ Appreciate the various aspects of rural management
- ✓ Foresee and gain an understanding of the internship for the BBA RM Students
- ✓ Gain an understanding of employment opportunities available in rural management sector

Instructions for the Participants for the Online FDP:

1. Filling the registration form is mandatory.
2. Attendance and Assignment Submissions are mandatory for all sessions for the certificate to be issued.
3. All sessions will be conducted on online platform.(The platform will be informed soon)
4. ID and password will be provided a day in advance.
5. E- certificate will be issued to all the participants. Limited seats available on first come first basis subject to satisfactory attendance and successful completion of assignments.
6. Participants need to have functioning Laptop/Desktop with webcam, microphone and headphones, a functioning email account and uninterrupted internet connectivity
7. Only those participants who are having the "Link" can get connected with FDP
8. The FDP will commence at 11.00 am on all 5 days and close by 4.00 pm. Lunch break is from 1.00 to 2.00 pm.

Organizing Committee:

CoreCommittee: Dr. WG Prasanna Kumar (Chairman), Prof. Chethan Chittalkar (Director), Dr KN Rekha
Members: Mr. Naresh Gajam, Ms. Samatha, Ms. Ankita Roy, Mr. Arman Kumar Mohaptra, Mr. Kumar Abhishek

Programme Schedule

Date	Time	Topic	Resource
26th November, Thursday	11.00 am to 4.00 pm	Inaugural Employment Opportunities: BBA Rural Management Introduction and interaction with participants Overview of BBA RM Curriculum Case Discussion in Rural Society and Polity (Using Case Study / Caselets methodology, Video film analysis) Consolidation of take-aways	Chairman Prof. Chethan Chittalkar Mr. Naresh Gajam, Ms. Samatha Ms. Ankita Roy Mr. Kumar Abhishek
27th November, Friday	11.00 am to 4.00 pm	Case Discussion in Foundations of Management and Entrepreneurship (Using Case Study / Caselets methodology, Video film analysis) Consolidation of take-aways	
28th November, Saturday	11.00 am to 4.00 pm	Case Discussion in Business Analytics (Using Case Study / Caselets methodology, Video film analysis) Consolidation of take-aways	
29th November, Sunday	11.00 am to 4.00 pm	Case Discussion in Ecology and Environment and Rural Marketing (Using Case Study / Caselets methodology, Video film analysis) Consolidation of take-aways	
30th November, Monday	11.00 am to 4.00 pm	Case Discussion in Management Decision Making Tools (Using Case Study / Caselets methodology, Video film analysis) Consolidation of take-aways Debriefing and Valedictory Session	

Registration Link: https://forms.gle/rDe15Fb1xpL3zKLj6

For Further Queries, please contact:
Prof. Chethan Chittalkar
Phone: 9052907212
Email: chethanmgncre@gmail.com, fdprm.mgncre@gmail.com

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Fwd: MGNCRE-DHE-MHRD-GoI/ RM/Online FDP-Case Discussion Methodology in Higher Education Institutions –Reg.

7 messages

KIMSDU, Karad <registrar@kimskarad.in>
To: Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Nov 25, 2020 at 4:25 PM

Thanking You.
Yours Sincerely,

Dr. M. V. Ghorpade
Registrar,
KIMSDU, Karad.

---------- Forwarded message ---------
From: **KIMSDU, Karad** <registrar@kimskarad.in>
Date: Wed, Nov 25, 2020 at 12:26 PM
Subject: Fwd: MGNCRE-DHE-MHRD-GoI/ RM/Online FDP-Case Discussion Methodology in Higher Education Institutions –Reg.
To: Dinesh Agrawal <dkagarwal_1512@yahoo.co.in>

Thanking You.
Yours Sincerely,

Dr. M. V. Ghorpade
Registrar,
KIMSDU, Karad.

---------- Forwarded message ---------
From: **MoE MGNCRE** <fdprm.mgncre@gmail.com>
Date: Tue, Nov 24, 2020 at 11:47 PM
Subject: MGNCRE-DHE-MHRD-GoI/ RM/Online FDP-Case Discussion Methodology in Higher Education Institutions – Reg.
To: <registrar@kimskarad.in>, <prochancellor@kimskarad.in>

Respected Administration,

Greetings from Mahatma Gandhi National Council of Rural Education (MGNCRE), Department of Higher Education, under the Ministry of Education (MoE), Government of India!

On behalf of the Ministry of Education, we congratulate you for showing keen interest in introducing BBA in Rural Management from the upcoming academic year. You are one of the important stakeholders in promoting professionalism in rural management and thereby national development. As you would agree there is a dire need for a professional approach to rural management in the country.

We are happy to let you know that we have published Five Rural Management Text Books (which cover first semester courses) and "Learning Rural Management – Cases and Caselets" (Link: http://ruralmanagement.mgncre.in/learning-caselets.html). Please find the soft copies of all the Rural Managements books in the link. http://ruralmanagement.mgncre.in/text-books.html. Further textbooks for all the courses will be made available periodically.

In our endeavour to promote Rural Management, we are delighted to share with you that 80 Universities/Institutions across the country have signed MOU with us to start BBA Rural Management program in the upcoming academic year. In this context, to facilitate the easy transaction of the course, we request you to:

1. Facilitate in organizing a Five Day Faculty Development Programme on Case Discussion Methodology to introduce the curriculum in detail with a focus on Rural Marketing and Rural Entrepreneurship and for orienting the faculty on the methodologies for transacting the curriculum along with the course wise contents. Please find the program brochure attached for your reference.

2. Please nominate faculty members of the Management Department to attend the online FDP "Case Discussion Methodology on Rural Marketing and Rural Entrepreneurship. We are providing you the registration link to register for the FDP.

Registration Links for FDP: **https://forms.gle/rDe15Fb1xpL3zKLj6**

Our FDP Coordinators Ankita Roy (Mobile: 7278126215) and Kumar Abhishek (Mobile:8789852388) can be reached for all clarifications. A copy of the FDP Brochure has been enclosed.

We look forward to a fruitful association with you.

Thanking you.
Yours sincerely,
Dr. W.G. Prasanna Kumar
Chairman, MGNCRE

Enclosure: FDP Brochure

Sender notified by Mailtrack

26th November MGNCRE FDP Brochure.pdf
654K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Nov 25, 2020 at 4:39 PM
To: Vaishali Mohite <kinsprincipal@rediffmail.com>

[Quoted text hidden]

26th November MGNCRE FDP Brochure.pdf
654K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Nov 25, 2020 at 4:42 PM
To: deankins@kimskarad.in, krishna college <krishnanursing9999@gmail.com>

[Quoted text hidden]

26th November MGNCRE FDP Brochure.pdf
654K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Nov 25, 2020 at 4:45 PM
To: deankins@kimskarad.in, krishna college <krishnanursing9999@gmail.com>

[Quoted text hidden]

26th November MGNCRE FDP Brochure.pdf
654K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Thu, Nov 26, 2020 at 10:23 AM
To: Dr Supriya Patil <patil.drsupriya@gmail.com>, sujata patil <sujapatil99@gmail.com>

Dear Respected Madam,

Kindly register in the link given in the attached file.
It will start at 11 am.

Thanking you,
Mrs Trupti

---------- Forwarded message ---------
From: **KIMSDU, Karad** <registrar@kimskarad.in>
Date: Wed, Nov 25, 2020 at 4:25 PM
Subject: Fwd: MGNCRE-DHE-MHRD-GoI/ RM/Online FDP-Case Discussion Methodology in Higher Education Institutions –Reg.
To: Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

[Quoted text hidden]

26th November MGNCRE FDP Brochure.pdf
654K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Thu, Nov 26, 2020 at 10:25 AM
To: "KIMSDU, Karad" <registrar@kimskarad.in>

Respected Sir,

Following are the names for FDP programme.

1. Dr. Supriya Patil,
Asso. Professor,
Dept. of Preventive & Social Medicine

1. Dr. Sujata Patil,
Asso. Professor,
Dept. of Preventive & Social Medicine

Thanking you.
[Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Thu, Nov 26, 2020 at 4:28 PM
To: "KIMSDU, Karad" <registrar@kimskarad.in>

Respected Sir,

Following are the names for FDP programme from the Nursing faculty.

1. Mrs Manda Mulik,
Asst. Professor,

2.Mrs Sushma Shete,
Asst. Professor,

Thanking you.
[Quoted text hidden]

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◐ 2019 ◐ WN 146341

SUB. TREASURY OFFICE KARAD

18 JUN

Memorandum of Understanding (MOU) for development of academic cooperation in nursing education at Krishna Institute of Medical Sciences "Deemed To Be" University's , Krishna Institute of Nursing Sciences, Karad by Maharashtra Education Society (MES), College of Nursing, Lote Parsuram

This Memorandum of Understanding (MOU) made between the Principal, Maharashtra Education Society (MES), College of Nursing. Herein After Referred To As Maharashtra Education Society (MES), College of Nursing (Which expression shall, unless excluded by or repugnant to the context, be deemed to include his successor in office

KRISHNA INSTITUTE OF NURSING SCIENCES KARAD KIMS. U KARAD

II. Scope

The general objective of this MOU is to stimulate and facilitate the mutual interest in the field of nursing education, research, training and development and dissemination of knowledge. Alongside, recognizing the importance of institutions role in promoting national and international collaboration and increased contribution to social development

III. General Areas of Cooperation

1. The two educational institutions will:

a) Cooperate in the exchange of information relating to their activities in teaching and research in fields of mutual interests [maternal child health care areas, public health nursing areas: and critical care areas, transplant units]

b) Promote appropriate joint research projects and joint courses of study in the field of mutual interest.

c) Endeavour to encourage students and staff to spend periods of time in the host Institute/University for the advanced clinical nursing experience.

d) Conduct study tours, a mutually agreed in writing between the parties prior to commencement of this activity.

e). Conduct joint faculty development programmes like conferences, workshops and symposia on matters of mutual interest

2. Facilitate the exchange of students

a). Such exchanges may take place for a period normally of one academic year. The academic standing of such students shall be determined by the host Institute/University. Exchange of students will be accorded the rights and privileges of students in the host country in accordance with the regulations of the host Institute/University relating to students and will be admitted under the terms and conditions relevant to the host Institute/University.

KRISHNA INSTITUTE OF NURSING SCIENCES KARAD
KIMS. U
KARAD

The aim of the Memorandum of Understanding (MOU) shall be to achieve a broad balance in the respective contributions and benefits of the collaboration. and this shall be subject to periodic review by both institutes.

The undersigned agree to this MOU on behalf of their respective institutes.

For and on behalf of

Krishna Institute of Medical Sciences "Deemed To Be" University's.
Krishna Institute of Nursing Sciences, Karad
NH4, Pune - Bangalore Highway,
Agashivnagar, Malkapur, Tal: Karad, Dist. Satara,
Maharashtra 415539

Dr. Prof. V. R. Mohite
M.Sc. (N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
Deemed University, Karad

Date 25/06/2020

SEAL

For and on behalf of

Maharashtra Education Society (MES),
College Of Nursing,
Ghane Khunth, Lote Parsuram, Tal:
Khed Dist: Ratnagiri

25/06/2020 (Signature)

PRINCIPAL
M.E.S. COLLEGE OF NURSING
Ghanekhunt - Lote, Ta. Khed
Dist. Ratnagiri - 415 722.

(Designation)

SEAL

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY"

KRISHNA INSTITUTE OF NURSING SCIENCES, Karad.

REPORT

National E Workshop on Research Methodology for Nurses

Organized by: Krishna Institute of Nursing Sciences, Karad.

Date: 4th, 5th & 6th November 2020 Time: 9AM – 1:00PM

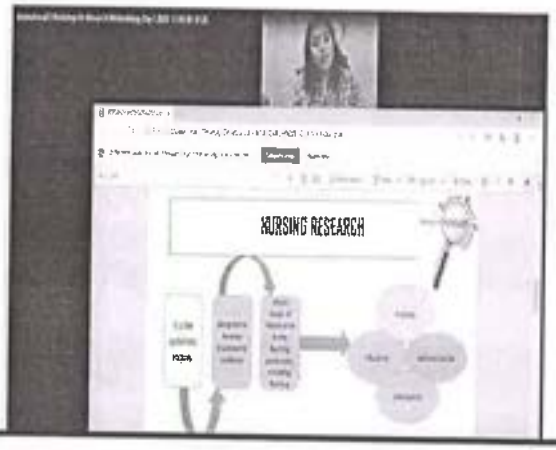
Day-1, 4th November 2020

National E Workshop on Research Methodology for Nurses organized by Krishna Institute of Nursing Sciences, Karad. Workshop was organized under the guidance of DR. Vaishali R. Mohite (Workshop-chairperson) and DR. Mahadeo Shinde (Workshop-Coordinator).

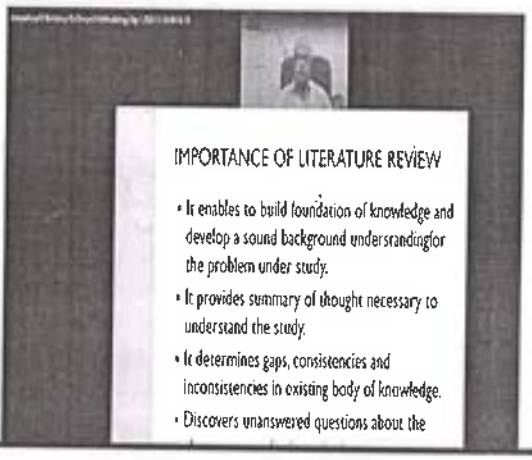
Workshop was designed to enable Participants to develop an understanding of basic concepts of research, research process and statistics. It is further, structured to conduct/ participate in need-based research studies in various settings and utilize the research findings to provide quality nursing care.

Total 810 Participants have registered for the National E Workshop on Research Methodology for Nurses and Pretest link was given to all the registered participants.

At 9:00am Inauguration programme has started, Inaugural address was given by Dr. D.K. Agarwal, Add. Director of Research, KIMSDU, Karad. After the Inaugural address, the first session was taken by Ms Rachal George, I/C. Registrar, Maharashtra Nursing Council (Mumbai) on Introduction: Scope and Significance in Nursing Research. The next Session on Research Process was delivered by DR. Shabana Anjum, Principal, Jabalpur Institute of Health Science, Jabalpur, Madhyapradesh. At 10:45-11:30am DR. Reeta Lakhani, Principal, College of Nursing, D.Y. Patil University, Nerul, Navi Mumbai has delivered the session the topic was Research Problem/Question. The next session taken by Prof. Milind Kale Principal M.E.S. College of Nursing Lote, Parshuram on Review of Literature. The last session of the first day was taken by Dr. Supriya Patil, Dean Academics, Faculty of Medical Sciences KIMSDU, Karad. Research Approaches and Designs: Quantitative Research.



Rachal George, I/C. Registrar, Maharashtra Nursing Council (Mumbai) delivered the Session on Introduction: Scope and Significance

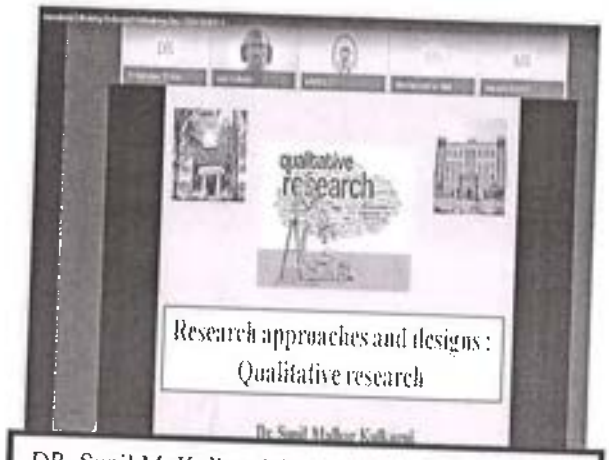


Prof. Milind Kale Principal M.E.S. College of Nursing delivered the session on Review of Literature.

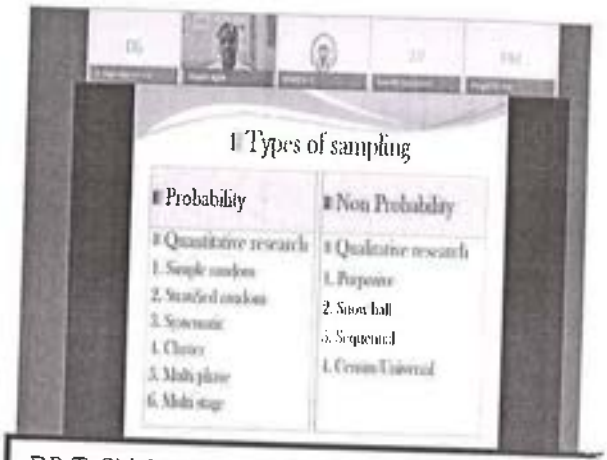
Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Day-2, 5th November 2020

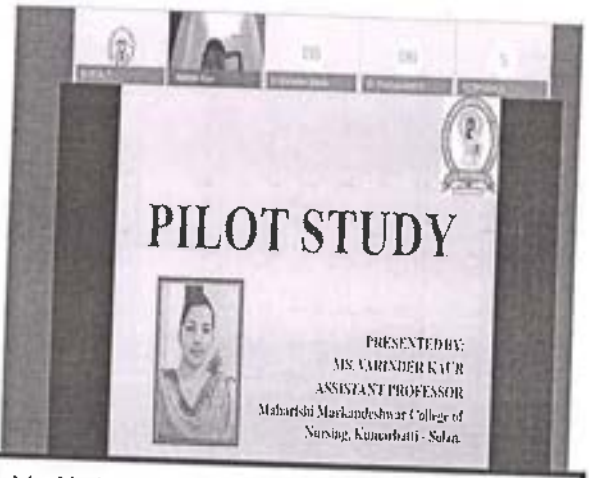
Second day of National E Workshop on Research Methodology for Nurses was started at 9:00am the first session was delivered by DR. Sunil.M. Kulkarni, Prof. College of Nursing. Bharati Vidyapeeth University, Pune on Research Approaches and Designs: Qualitative Research. The second session was taken by DR.T. Shivbalan, Principal, College of Nursing Pravara Institute of Medical Sciences University, Loni on the topic Sampling and Sampling techniques. Next session on Introduction to statistics was delivered by Ms. Trupti Bhosale, Statistician, KIMSDU, Karad and the last session of the day on Pilot study was taken by Ms. Varinder Kaur, Ass. Prof. MMCONMM University, Solan.



DR. Sunil.M. Kulkarni, Prof. College of Nursing. Bharati Vidyapeeth University, delivered the Session on Qualitative Research



DR.T. Shivbalan, Principal, College of Nursing Pravara Institute of Medical Sciences University, Loni on the topic Sampling and Sampling



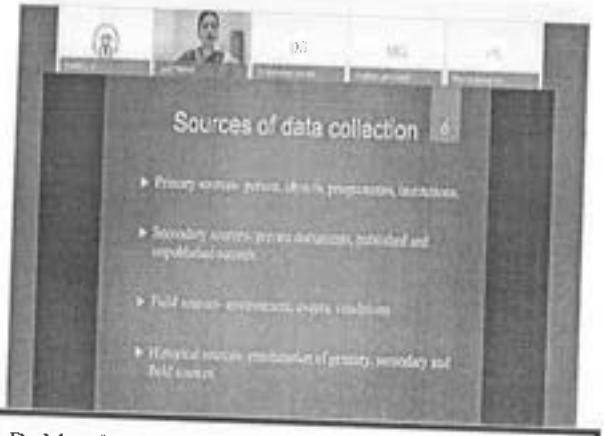
Ms. Varinder Kaur, Ass. Prof. MMCONMM University, Solan. delivered the Session on Pilot study.

Mrs. Manish C. Gholap Asso. Professor, KINS, Karad While moderating the Workshop.

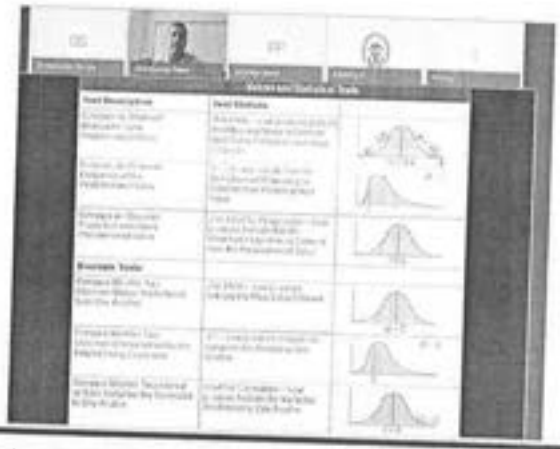
Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Day-3, 6th November 2020

Second day of National E Workshop on Research Methodology for Nurses was started at 9:00am the first session was delivered by Dr Mrs. Jyoti R Thakur, Principal, Gokhale Education Society's Sir Dr. M. S. Gosavi Institute of Nursing Education, Training and Research, Nashik. Dr Mrs. Jyoti R Thakur has taken the topic Methods of data collection. Next session on Analysis of data was taken by Mr. Dhiraj Mane, Statistician, KIMSDU, Karad. The next session was taken by DR. Sneha Pitre Ass. Prof. RAKMHSU College of Nursing, RAS KHAIMAH, UAE. On Communication and utilization of Research. The Next session on Good Academic Research Practices delivered by DR. Vaishali R. Mohite, Dean, Krishna Institute of Nursing Sciences, Karad and the last session of the day on Statistical Packages and its application was delivered by Mr. Mahendra Alate Statistician, KIMSDU, Karad.



Dr Mrs. Jyoti R Thakur delivered the Session on Methods of data collection



Mr. Dhiraj Mane, Statistician, KIMSDU, Karad delivered the Session on Analysis of data

DR. Sneha Pitre, DR. Vaishali R. Mohite and DR. Mahadeo Shinde while Discussion during the Workshop

DR. Vaishali R. Mohite, Dean, Krishna Institute of Nursing Sciences, Karad delivered the Session on Good Academic Research Practices.

Delegates have given the feedback about Research Methodology workshop, they were happy as they got excellence guidance from experts and then workshop ended with vote of thanks given by Mrs. Swati Ingale, Clinical Instructor, KINS, Karad.

The posttest and feedback link was given to the all the registered participants and after the completion of posttest and feedback E Certificates was awarded to the participants.

The total 64 Participants has given the pretest and posttest, the pretest mean was 23.01 and posttest mean was 30.04 the total average learning gain is 14.06.

KRISHNA INSTITUTE OF NURSING SCIENCES
KIMSDU KARAD

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Memorandum of Understanding
For
Academic Collaboration
Between
Krishna Institute of Medical Sciences Deemed University, Karad
And
College of Engineering, Pune

Preamble

Krishna Institute of Medical Sciences Deemed University, (KIMSDU) Karad And College of Engineering, Pune, (COEP) appreciate each others contribution in the field of academics and are of opinion that Academic Collaboration between the two, shall be of mutual benefit to both the Institutions & to the students, of Medical stream and Engineering stream.

Objectives

The Collaboration shall aim to facilitate creation and advancement of knowledge with frequent interactions to include but not limited to the following points.

(a) Explore creation of Interdisciplinary Knowledge with integration of Medical Science & Engineering Technology

(b) Exchange faculty for bilateral Interdisciplinary learning.

(c) Promote Collaborative Interdisciplinary Research & Development.

(d) Merit based permission for use of each others facilities for researchers (Ph. D. students)

(e) Exchange student visits to enable Medical Students to acquire Engineering knowledge that can be applied to add value to Medical Profession and Engineering Students to acquire Medical science knowledge to add value to Engineering Profession.

(f) Organizing CME Seminars, Conference, workshops of mutual interest.

(g) Invite each other's faculty.

(h) Conduct Research Training Programs.

Detailed terms & conditions for each activity shall be decided on mutual consent prior to the Planning & execution of the activity.

Co-ordination

Each Institute shall appoint one member of faculty to co-ordinate programs on its behalf.

A co-ordination Committee consisting of two Senior Officials, one teaching faculty & one administrative staff from each Institute shall periodically review & identify ways to strengthen co-operation between the two Institutions.

Tenure

This Memorandum of Understanding takes effect from the date it is signed by representatives of the two Institutions, and will remain valid for five year period.

Either Institution may terminate the Memorandum of Understanding by giving written notice to other Institute three months notice in advance.

Arbitration Clause

Each activity will be Planned & executed on mutually agreeable terms & conditions and therefore there is no likely hood of any dispute. Should, however, any dispute arise, the Hon'ble Vice Chancellor Krishna Institute of Medical Sciences Deemed University & Hon'ble Director, College of Engineering, Pune will jointly resolve in a spirit of independence, mutual respect & shared responsibility.

Signed by

Dr. A.V. Nadkarni.
Vice-Chancellor,
KIMSDU, KARAD.

Signed by

26/3/12

Dr. A. D. Sahasrabudhe.
Director & Professor,
COE, PUNE.

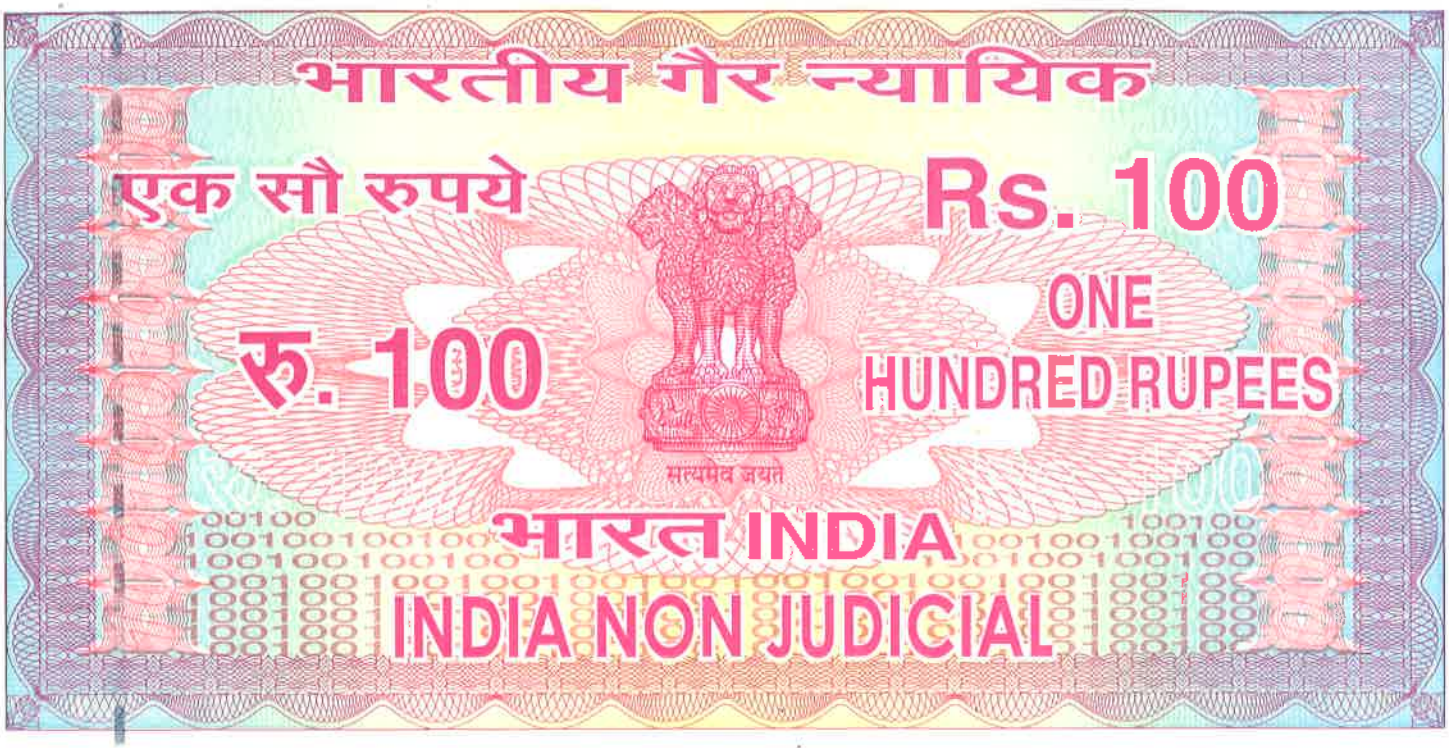
Director
College of Engineering
Pune-411005.

Dr. M.V. Ghorpade.
Registrar,
KIMSDU,Karad

26/3/12

Dr. B. B. Ahuja
Deputy Director,
COE, Pune.

COLLEGE OF ENGINEERING, PUNE



महाराष्ट्र MAHARASHTRA ◑ 2019 ◑ VH 254808

जोडपत्र १ व २ /Annexure-I & II

मुद्रांक विक्री कारण -
Reason of sale stamps and Amount
मुद्रांक विकत घेणाऱ्याचे नांव व पत्ता
Stamp Purchasers Name
मुद्रांक विक्री नोंदवही क्रमांक
Serial No and Date
मुद्रांक विकत घेणाऱ्याची सही
Stamp Purchasers Sign.
मुद्रांक विक्रेता-श्री. कृष्णात दिनकर यादव
परवाना क्रं २३०३०१/२००६ मु.वि.तिकाण-दु.नि.कार्या क्र.१
महसिल कार्या. आवार कराड
ज्या कारणासाठी ज्याचे मुद्रांक खरेदी केला ... मुद्रांक विक्रेत्यापासून ६ महिन्यात वापरणे बंधनकारक आहे.

900

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

16 OCT 2019

दिनांक

मुद्रांक विक्रेत्याची सही

Memorandum of Understanding for Academic Collaboration between Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and College of Engineering, Pune (COEP)

Preamble

Krishna Institute of Medical Sciences "Deemed to be University", Karad (**KIMSDU**) and College of Engineering, Pune (**COEP**) appreciate each other contribution in the field of academic and are of opinion that academic collaboration between the two shall be of mutual benefit to both the institutes and to the students of medical stream and engineering stream.

College of Engineering Pune (An Autonomous Institute of Govt. of Maharashtra) सत्यमेव जयते

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

Objectives:-

The collaboration shall aim to facilitate creation and advancement of knowledge with frequent nitration to included but not limited to the following points.

1. Explore creation of interdisciplinary knowledge with integration of medical sciences and engineering technology
2. Exchange the faculty for bilateral interdisciplinary learning.
3. Promote collaborative interdisciplinary research and development.
4. Merit based permission for use of each other for researcher and PhD students.
5. Exchange student visit to enable medical student to acquire engineering knowledge that can be applied to add value to engineering profession.
6. Organizing CME, seminars, conference, and workshops of mutual interest.
7. Invite each other's faculty.
8. Conduct research training programs.

Detailed terms & conditions for each activity shall be decided on mutual consent prior to planning & exchanging of the activity.

Co-Ordination

Each institute shall appoint one member of faculty to coordinate programs on its behalf. A coordination committee consisting of two seiner officers, one teaching faculty and one is administrative staff from each institute shall periodically review & indenting ways to strengthen coordination between two institutions.

Tenure

This Memorandum of Understanding takes effect from the date of it signed by representatives of the two institutions and will be remain valid for five years period However the earlier Memorandum of Understanding was expired on 25/03/2019 but the collaborative activity was very much in force during the transitory period therefore as this memorandum of understanding is signed on this date i.e.18/11/2019 but will be considered to effective for further five years from the date of expiry of this memorandum of understanding. Either institutions may be terminated the Memorandum of Understanding by giving written notice to other institutions three months in advance.

Arbitration Clause

Each activity will be planned and executed on mutually agreeable terms & conditions and therefore there is no likely hood of any dispute. However any dispute arise, the Vice Chancellor Krishna Institute of Medical Sciences "Deemed to be University", Karad **(KIMSDU)** & Hon'ble Director, College of Engineering Pune **(COEP)** will jointly resolve in spirit of independence, mutual respect & shared responsibility.

College of Engineering Pune (An Autonomous Institute of Govt. of Maharashtra) सत्यमेव जयते

Krishna Institute of Medical Sciences "Deemed To Be University" Karad

PARTIES

The Registrar

Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

For and on behalf of
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad.

WITNESS

1. Dr. D. K. Agarwal

2._____

Date:-

The Principal

College of Engineering, Pune.

Director
College of Engineering
Pune-411005.

For and on behalf of
Board of Management
College of Engineering, Pune

WITNESS

1. Prof. M. J. Rathod

2._____

Date:-

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University

Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist.:Satara (Maharashtra State) Pin: 415539 Tel : 02164-241555-8 Fax: 02164-243273/242170
Website: www.kimskarad.inE-mail: registrar@kimskarad.in

KIMS/ MICRO/ F – 1/ 2020 Date:- 23/09/2020

To,

Dr. D. K. Agarwal
Additional Director of Research,
KIMSDU, Karad.

Subject: Sterility check of UV Sterilizer unit

Respected Sir,

As per the discussion held along with the Registrar sir, regarding the testing of effectiveness of the UV-C sterilizer unit, sending herewith the report of the UV-C sterilizer.

Thanking You.

Yours sincerely,

Dr. (Mrs.) G. S. Karande

CC To : The Registrar, KIMS DU,

Report

Evaluation of the effectiveness of UV-C light for surface sterilization.

Specification of the instrument : UV-C sterilization unit with four UV-C lamps (254 nm germicidal lamps) with sterilization time from 30 seconds to 5 minutes.

Hospital-acquired infections, also known as nosocomial infections can be acquired within a hospital environment. The contact surfaces mainly equipment and furniture of hospitals are the main culprits in transmission of nosocomial pathogens such as multidrug-resistant pathogens including methicillin-resistant *Staphylococcus aureus* (MRSA), extended-spectrum beta-lactamase-producing bacteria (ESBL) e.g., Enterobacteriaceae such as *Klebsiella, Escherichia coli* as well as *Pseudomonas aeruginosa.*

The effectiveness of sterilization of the UV-C sterilization unit was tested using three organisms namely :
Staphylococcus aureus – gram positive cocci,
Escherichia coli – gram negative lactose fermenting bacilli,
Pseudomonas aeruginosa - gram negative nonlactose fermenting bacilli.

Each organism was cultured on the culture medium and exposed to UV-C rays for the given sterilization time (i.e. 30 seconds, 1 minute, 2 minutes, 3 minutes, 4minutes , 5 minutes) respectively, followed by overnight incubation at 37^0 c

Observation of results: Growth of the organism was seen in the culture plates exposed to UV-C for 30 seconds and 1 minute (colony count was compared to uv unexposed control plate), but the culture plates exposed to the other 4 sterilization time (i.e. 2,3,4,5 minutes respectively) were sterile, showing no growth. Control plate was unexposed to UV-C .This indicates that the minimum sterilization time required for surface sterilization is 2 minutes and above.

Three other methods suggested by Dr. Jayant Pawar were also carried out to test the effectiveness, which gave similar interpretation of results i.e. a minimum time of 2 minutes is required for surface sterilization.

Impression: Using the UV-C sterilizer unit, surface sterilization is effective with a sterilization time of 2 minutes or more.

The effectiveness of the sterilizer unit is tested for bacteria only. (*Staphylococcus aureus*, *Escherichia coli* , *Pseudomonas aeruginosa*)

Testing of the effectiveness of UV-C light on Fungi has been done and the results will be available within 7 days and be reported.

Dr. (Mrs.) G. S. Karande

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

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Karad, Dist.:Satara (Maharashtra State) Pin: 415539 Tel : 02164-241555-8 Fax: 02164-243273/242170
Website: www.kimskarad.inE-mail: registrar@kimskarad.in

KIMS/ MICRO/ F – 1/ 2020 Date:- 23/09/2020

Testing Report of UV-SEVAK 360° Device

Evaluation of the effectiveness of UV-SEVAK 360° Device for surface sterilization.

Testing of the effectiveness of UV-SEVAK 360° Device on Bacterial cultures

The effectiveness of sterilization of the UV-C sterilization unit was tested using three organisms namely :
Staphylococcus aureus – gram positive cocci,
Escherichia coli – gram negative lactose fermenting bacilli,
Pseudomonas aeruginosa - gram negative non-lactose fermenting bacilli.

Each organism was cultured on the culture medium and exposed to UV-C rays for the given sterilization time (i.e. 30 seconds, 1 minute, 2 minutes, 3 minutes, 4minutes , 5 minutes) respectively, followed by overnight incubation at 37° C

Observation of results: Growth of the organism was seen in the culture plates exposed to UV-C for 30 seconds and 1 minute (colony count was compared to uv unexposed control plate), but the culture plates exposed to the other 4 sterilization time (i.e. 2,3,4,5 minutes respectively) were sterile, showing no growth. Control plate was unexposed to UV-C .This indicates that the minimum sterilization time required for surface sterilization is 2 minutes and above.

Impression: Using the UV-C sterilizer unit, surface sterilization is effective with a sterilization time of 2 minutes or more against bacteria cultures (*Staphylococcus aureus, Escherichia coli , Pseudomonas aeruginosa*) .

Dr. (Mrs.) G. S. Karande
HOD, Dept. of Microbiology, KIMS

KRISHNA INSTITUTE OF MEDICAL SCIENCES

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Website: www.kimskarad.inE-mail: registrar@kimskarad.in

KIMS/ MICRO/ F – 1/2020 Date:- 05/10/2020

To,

Dr. D. K. Agarwal
Additional Director of Research,
KIMSDU, Karad.

Subject: Sterility check of UV Sterilizer unit

Respected Sir,

Sending herewith the continued report of the effectiveness of UV-C sterilizer for fungi

Thanking You.

Yours sincerely,

Dr. (Mrs.) G. S. Karande

CC To : The Registrar, KIMSDU,

Report

Evaluation of the effectiveness of UV-C light for surface sterilization.

Testing of the effectiveness of UV-C light on Fungi

The effectiveness of sterilization of the UV-C sterilization unit was tested on two fungi(yeast), namely Candida and Cryptococcus.

Each fungus was cultured on the culture medium and exposed to UV-C rays for the given sterilization time (i.e. 30 seconds, 1 minute, 2 minutes, 3 minutes, 4minutes , 5 minutes) respectively, followed by incubation at 37^0 c and at room temperature.

Observation of results : Growth of the Fungi was seen in the culture plates exposed to UV-C for 30 seconds, 1 minute and 2minutes but the culture plates exposed to the other 3 sterilization time (i.e. 3,4,5 minutes respectively) were sterile, showing no growth. Control plate was unexposed to UV-C .This indicates that the minimum sterilization time required for surface sterilization is 3minutes and above.

Impression: Using the UV-C sterilizer unit, surface sterilization is effective with a sterilization time of 3 minutes or more for Fungi (yeast).

KRISHNA INSTITUTE OF MEDICAL SCIENCES

"DEEMED TO BE UNIVERSITY", KARAD

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KIMS/ MICRO/ F – 1/2020 Date:- 05/10/2020

Testing Report of UV-SEVAK 360° Device

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Testing of the effectiveness of UV-SEVAK 360° Device on Fungi

The effectiveness of sterilization of the UV-C sterilization unit was tested on two fungi(yeast), namely Candida and Cryptococcus.

Each fungus was cultured on the culture medium and exposed to UV-C rays for the given sterilization time (i.e. 30 seconds, 1 minute, 2 minutes, 3 minutes, 4minutes , 5 minutes) respectively, followed by incubation at 37^0 c and at room temperature.

Observation of results : Growth of the Fungi was seen in the culture plates exposed to UV-C for 30 seconds, 1 minute and 2minutes but the culture plates exposed to the other 3 sterilization time (i.e. 3,4,5 minutes respectively) were sterile, showing no growth. Control plate was unexposed to UV-C .This indicates that the minimum sterilization time required for surface sterilization is 3minutes and above.

Impression: Using the UV-C sterilizer unit, surface sterilization is effective with a sterilization time of 3 minutes or more for Fungi (yeast).

Dr. (Mrs.) G. S. Karande
HOD, Dept. of Microbiology, KIMS

प्रेस नोट

युव्ही सेवक 360°

सध्या जगभर पसरलेल्या कोविड – १९ साथीच्या रोगामुळे आरोग्य सेवा पुरविणाऱ्या डॉक्टर्स, नर्सिंग स्टाफ, कर्मचाऱ्यांवर हा संसर्ग रोखण्यासाठी प्रचंड दबाव वाढला आहे. किंबहुना ही आरोग्यसेवा देताना ते स्वत: संसर्गित होण्याची जास्त शक्यता आहे. खरंतर हे विषाणू अनेक ठिकाणी आढळतात. अगदी जिथे कोविड-१९ चे उपचार सुरू आहेत, अशा हॉस्पिटलमध्ये कार्यरत असलेल्या डॉक्टर्सच्या वैद्यकीय साधनांवर; तसेच वॉर्ड, ओपीडी, ऑपरेशन थिएटर येथील अन्य वैद्यकीय साहित्य, औषधी भांड्यांवरही हे विषाणू आढळून येतात. वास्तविक रूग्णालयातील ही साधने केवळ सार्स-को व्ही २ ने बाधित असतात, असे नाही. तर ही दूषित साधने मोठ्या प्रमाणावर लोकसंख्येला तसेच आरोग्य सेवा पुरविणाऱ्या डॉक्टर्स, नर्सिंग स्टाफ, कर्मचाऱ्यांनाही संसर्ग बाधा पोहचवू शकतात, याकडे जागतिक संशोधकांनी लक्ष वेधले आहे.

पारंपारिक निर्जंतुकीकरणाच्या पद्धती या नेहमीच व्यवहार्य नसतात, कारण त्या वेळखाऊ असतात. तसेच आयआर थर्मामीटर, पल्स ऑक्सिमीटर, स्टेथोस्कोप, ईसीजी इलेक्ट्रोड्स, दंत साधने इत्यादी उपकरणांसाठी योग्य नसतात. रूग्णालयातील विविध भांडी, पोर्टेबल वैद्यकीय उपकरणांमधून विषाणू आणि इतर जंतूंच्या प्रभावी आणि जलद नायनाटासाठी रूग्णालयाच्या सेटअपमध्ये युव्ही (अल्ट्राव्हायलेट) निर्जंतुकीकरणाचे महत्व अलीकडील कोविड-१९ साथीच्या रोगात स्पष्ट झाले आहे. याशिवाय हे सुरक्षा तंत्रज्ञान घर, हॉटेल, सलून आणि पार्लरमध्येही वापरले जाऊ शकते.

म्हणूनच, कराड येथील कृष्णा वैद्यकीय विज्ञान अभिमत विद्यापीठाचे संशोधन संचालनालय आणि कॉलेज ऑफ इंजिनिअरिंग पुणे च्या इन्स्ट्रुमेंटेशन ॲन्ड कंट्रोल विभागाच्या संयुक्त संशोधनातून अभिनव असे युव्ही निर्जंतुकीकरण यंत्र साकारण्यात आले आहे. या नाविण्यपूर्ण उपकरणात अल्ट्राव्हायोलेट लाईट आणि नॅनोमेटेरियल लेप यांच्या एकत्रीकरणातून समाजात विविध स्तरावर वापरण्यात आलेली औषधी भांडी, तसेच वैद्यकीय उपकरणांचे संपूर्ण निर्जंतुकीकरण करण्यात येते. विशिष्ट प्रकारच्या विविध वस्तूंच्या निर्जंतुकीकरणासाठी ३० सेकंद ते ५ मिनिटांपर्यंतचा ऑप्टिमाइज्ड एक्सपोजर अवधी या उपकरणासाठी प्रमाणित करण्यात आला असून, विविध प्रयोगशाळांतून याचे प्रमाणीकरणही करण्यात आले आहे.

एनबीई टेक, पुणे द्वारा युव्ही सेवक 360° या ब्रँड नावाने हे उपकरण बाजारात उपलब्ध केले जाणार आहे. युव्ही सेवक 360° हे उपकरण विविध वैद्यकीय आणि इतर घरगुती क्षेत्रांमध्ये विषाणू (व्हायरस), जिवाणू (बॅक्टेरिया) आणि बुरशीसारख्या जंतूंनी दूषित झालेल्या विविध साधनांचे निर्जंतुकीकरण करण्यासाठी वापराच्या गरजेनुसार ३०, ४० आणि ६० लिटर क्षमतेमध्ये उपलब्ध असणार आहे.

कृष्णा अभिमत विद्यापीठाचे कुलपती डॉ. सुरेश भोसले यांच्या दूरदृष्टीतून अनेक लोकोपयोगी संशोधने सुरू असून, या संशोधनाचा लाभ समाजातील विविध घटकांना व्हावा, यासाठी ही संशोधित उपकरणे वाजवी दरात लोकांना उपलब्ध करून देण्याचा त्यांचा मनोदय आहे. युव्ही सेवक 360° च्या संशोधन आणि विकासाच्या प्रयत्नासाठी कृष्णा अभिमत विद्यापीठाचे अतिरिक्त संशोधन संचालक डॉ. डी. के. अग्रवाल, संशोधन असोसिएट डॉ. जयंत पवार आणि कॉलेज ऑफ इंजिनिअरिंग पुणे च्या इन्स्ट्रुमेंटेशन ॲन्ड कंट्रोल विभागाचे प्रमुख डॉ. डी. एन. सोनवणे यांनी प्रयत्न केले. कॉलेज ऑफ इंजिनिअरिंग पुणे चे संचालक डॉ. बी. बी. आहुजा यांच्या मार्गदर्शनाखाली या तंत्रज्ञानाचे हस्तांतरण एनबीई टेक, पुणे यांना करण्यात येत आहे.

Dr. D. K. Agarwal
Additional Director Research,
Krishna Institute of Medical Sciences
"Deemed to be University",
Karad-415539

Dr. B. B. Ahuja
Director,
College of Engineering, Pune
Pune-411005

Press Note
UV-SEVAK 360°

Currently, the COVID-19 pandemic has put tremendous pressure on healthcare service providers particularly for diagnosis, treatment and prevention of the infections. The hospital-acquired nosocomial infections can be acquired within a hospital environment, especially through the doctor's hand tools and other medical utensils used in OPDs, OTs and wards. In this regard, one potential problem of contaminated hospital utensils not only by SARS-CoV2 virus, but also other hospital borne infectious agents has attracted great attention of the researchers worldwide; as such contaminated tools may be responsible for mass infection of the population and healthcare professionals. The conventional sterilization methods may not be always feasible as these are time consuming and not suitable for equipment like IR thermometer, pulse oximeter, stethoscope, ECG electrodes, dental tools, etc. The significance of UV sterilization in hospital set-ups got highlighted in recent Covid-19 pandemic for effective and quick inactivation of viruses and other germs from hospital utensils and portable medical equipment. Furthermore, the same technology can be used at home, hotel sector, saloons and parlours as a safety measure.
Therefore, **Directorate of Research, Krishna Institute of Medical Sciences "Deemed to be University", Karad** and **Department of Instrumentation and Control, College of Engineering, Pune** under the collaborative innovative practices has come out with a UV sterilizer device. The novelty feature of present innovative device is amalgamation of ultraviolet light and nanomaterial coating to completely sterilize the medico utensils and tools used by other stake holders of the society. The present device has certified by various laboratories to validate the optimised exposure time ranging from 30 seconds to 5 minutes for particular objects to be sterilised.

The device shall be made available in the market with a brand name as UV-SEVAK 360° by NBE Tech, Pune. The UV-SEVAK 360° will be available in different capacity of 30, 40 and 60 litres to be used in healthcare and other domestic sectors for sterilizing the hand tools and personnel belongings contaminated by germs like virus, bacteria and fungus.

Hon'ble Dr Suresh Bhosale, Chairman and Chancellor of KIMSDU is a visionary resourceful person under whom present research product promoted and made available to the society in reasonable cost.

The tire some efforts in research and development of UV-SEVAK 360° was taken by Dr. D. K. Agarwal, Add Director Research, KIMSDU, Dr. Jayant Pawar, Research Associate, Directorate of Research, KIMSDU and Dr. D. N. Sonawane, HoD and Associate Professor, Department. of Instrumentation and Control, COEP, Pune to develop the UV-SEVAK 360° device under the guidance of Hon'ble Dr. B. B. Ahuja, Director, College of Engineering, Pune, which resulted into the transfer of technology to NBE Tech, Pune.

Dr. D. K. Agarwal
Additional Director Research,
Krishna Institute of Medical Sciences
"Deemed to be University",
Karad-415539

Dr. B. B. Ahuja
Director,
College of Engineering, Pune
Pune-411005

Item no. IQAC/ 02/ 04/ 2018-19

As per the minutes of meeting of IQAC held on 26th Dec 2018 in the IQAC hall, the institutional IT policy should be revisited to upgrade the various facilities and also to made available to all the stake holders learning resources adequately. After the discussion, it was decided to entrust this task to Dr. D. K. Agarwal, Add. Director Research.

Updates:

We have made the collaboration/ MOU with all the renowned Engineering colleges like Government Engineering College, Karad, Rajarambapu Institute of Technology (RIT) and COEP, Pune are involved.

The conversation is going on with all the three colleges and they have shown their willingness to extend the co- operation by identification of various softwares including their operation and other ICT tools and techniques to be used to make the hospital more IT savvy as well as the office along with other constituent colleges and other amenities like library, hostel etc.

The particular task for its implementation in a holistic manner is itself time consuming but the institution is looking forward to complete the task at the earliest to show case the University before the upcoming NAAC visit.

The institution has decided to adopt the ICT policy in a strategic manner which will be in the sequential approach.

1. A committee is required to be constituted to monitor the activities.
2. Identification of various softwares already available in the University as a whole including hospital.
3. Identification of new software with the latest version and other ICT tool required to be listed.
4. The process of purchasing the required ICT tools and their proper implementation including trained human resources if required to be submitted to the relevant authorities for their approval.
5. To train the existing human resource through versatile training to be made available from outside agencies/ collaborative engineering institutions.
6. At the initial phase, we are enthusiastic to start with a pilot project within three months stand duration.

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Collaborative research and development of UV SEVAK 360°

6 messages

Jayant Pawar <jayantpawar26@gmail.com> Sat, Oct 24, 2020 at 10:46 AM
To: dns.instru@coep.ac.in
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, director@coep.ac.in

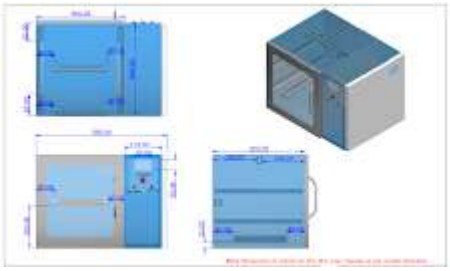
Dear Sir,
With reference to our yesterday's meeting at your office regarding testing and technical authentication of our product "UV-SEVAK 360°" developed for quick surface sterilization of hospital utensils. We would be very glad to be associated with your esteemed organization for collaborative research, development and launching of this device. As per the suggestions of Hon'ble Dr. B. B. Ahuja Sir, Director COEP and yourself, we have modified the device for better results. In this regard, we have coated inside of the device with photocatalytic nanomaterials which would enhance the antimicrobial efficacy on exposure of UV light. The device has been authenticated at the microbiology laboratory of KIMSDU and found to have greater antibacterial and antifungal activity in less than two minutes.
As we discuss that the certifications can be obtained for our device from NABL, we shall proceed for the same after the confirmation from higher authorities of KIMSDU and COEP.
I herewith attached the technology report and microbiology lab testing reports of developed product for your perusal. Please go through the same and give your inputs on the electronic features of the device. Please feel free to modify the attached file if required. The MoU and other formalities will be completed through management of KIMSDU and COEP. As soon as we receive reports and certifications we shall immediately go for technology transfer to NBE Tech, Pune.

Kindly do the needful to enable us to proceed further.

Thank you

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813

4 attachments



UV SEVAK.png
120K

UV Sterilizer_Technology report for COEP.docx
699K

Annexure II (1).docx
531K

Annexure I (1).docx
537K

dns.instru@coep.ac.in <dns.instru@coep.ac.in> Sat, Oct 24, 2020 at 12:09 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, "Prof.B.B.Ahuja" <director@coep.ac.in>

Dear Dr. Pawar

Thank you for the documents. I will prepare Electronics Design report and testing report in a week time. I will appreciate if you could share MOU draft for reference. Looking forward to having more such research collaborations in coming time for the benefit to the society.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor and HOD
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coepembeddedlab.com

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Saturday, October 24, 2020 10:46 AM
To: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Prof.B.B.Ahuja <director@coep.ac.in>
Subject: Collaborative research and development of UV SEVAK 360°

[Quoted text hidden]

Jayant Pawar <jayantpawar26@gmail.com> Tue, Oct 27, 2020 at 6:32 PM
To: dns.instru@coep.ac.in
Cc: director@coep.ac.in, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir,
PFA MoU copy signed between KIMSDU and COEP for collaborative research, start up, technology transfer and other academic activities for your reference. As Dr. D. K. Agarwal sir suggested creating an agreement for the present research activity which can be produced after approval from the authorities of both the organizations. As soon as we get Electronics Design Report from you and necessary certifications from other competent authorities we shall proceed further for the drafting of an agreement and ToT with NBE Tech.

Thank you sir for your cooperation.

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813

On Sat, 24 Oct 2020 at 20:13, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> wrote:

> Dear sir,
> We have already signed mou with COEP pune, which also covered collaborative research, Start up , technology transfer and other Academic activities, in fact we can create an Agreement on a particular project covering related issues after approval from both authorities, draft agreement can be prepared as product is approved from your institution and then others like ISO, CEL, NABL as applicable. It will be kind enough if you can get it approved from respected Ahuja sir and other related authorities, looking forward your response.
> Dr pawar is already in consultation with you.
> With Warm regards.
>
> cc PA to honourable Chairman
>
> . Registrar KIMSDU.
> [Quoted text hidden]

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14. KIMSDU - College of Engineering Pune Signed MOU.pdf
323K

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dns.instru@coep.ac.in <dns.instru@coep.ac.in> Tue, Oct 27, 2020 at 10:06 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: "Prof.B.B.Ahuja" <director@coep.ac.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir

Thank you for your inputs. I am working on to prepare the **Electronics Design Report** and all the necessary experimentation/tests required for Certification.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor and HOD
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coepembeddedlab.com

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Tuesday, October 27, 2020 6:32 PM
To: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
Cc: Prof.B.B.Ahuja <director@coep.ac.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>
Subject: Re: Collaborative research and development of UV SEVAK 360°

[Quoted text hidden]

Jayant Pawar <jayantpawar26@gmail.com> Sat, Nov 21, 2020 at 8:45 PM
To: "dns.instru@coep.ac.in" <dns.instru@coep.ac.in>
Cc: "Prof.B.B.Ahuja" <director@coep.ac.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir,
We are going for ISO Certification of our UV-SEVAK device. As per the requirements we need to provide all the reports includes Microbiology Test and Electronics Design Report. Please provide the test reports at earliest.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Mob.: 8600867813
[Quoted text hidden]

---

dns.instru@coep.ac.in <dns.instru@coep.ac.in> Sun, Nov 22, 2020 at 8:11 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: "Prof.B.B.Ahuja" <director@coep.ac.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Dr. Pawar

We, our honorable Director, Auja Sir, honorable Agrawal Sir, and I had a meeting on Monday at 10.30 am in Directors Sir's office and discussed on the MOU draft and suggested some changes in MOU. I hope Dr. Agrawal Sir might have communicated to you the suggested changes. We are expecting the revised MOU draft as per the discussion, once we mutually aggress on the draft and MOU conditions, I will forward you the Electronics Design Report and will go ahead with the MOU signing. Please let me know if you required any inputs from my side to revise the draft.

Reagrds...

D. N. Sonawane, Ph.D.
Associate Professor
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coepembeddedlab.com

From: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Saturday, November 21, 2020 8:45 PM
[Quoted text hidden]

[Quoted text hidden]

Fw: ToT Agreement_Updated

1 message

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Wed, Dec 9, 2020 at 11:18 AM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

Attn: Rohan

----- Forwarded message -----
From: dns.instru@coep.ac.in <dns.instru@coep.ac.in>
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Prof. B. B. Ahuja <director@coep.ac.in>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>; Karad Medical Registrar Ghorpade <registrar@kimskarad.in>
Sent: Friday, 27 November, 2020, 10:31:49 am IST
Subject: Re: ToT Agreement_Updated

Dear Dr. Pawar

Please find attached ToT Agreement copy modified with certain clauses as per the standard agreement is having and the points Dr. Agrawal sir and Dr Ahuja sir have discussed. Please go through it and add the details about Krishna Institute of Medical Science and NBE-TECH, Pune at appropriate places.

Please let us know if any suggestions and modifications are required.....

Thank You

D. N. Sonawane, Ph.D.
Associate Professor and HOD
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coep.org.in/coepembeddedlab

From: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Sent: Wednesday, November 25, 2020 11:04 AM
To: Prof.B.B.Ahuja <director@coep.ac.in>; dns.instru@coep.ac.in <dns.instru@coep.ac.in>; Karad Medical Registrar Ghorpade <registrar@kimskarad.in>; Jayant Pawar <jayantpawar26@gmail.com>
Subject: Fwd: ToT Agreement_Updated

Respected Ahuja sir ,as per our discussion in your office we have included the decision which was taken in your presence, kindly find the document for your approval,if you wish to change please feel free and forward us. We are planning to launch the product during first week of December after seeking permission from our honourable Chancellor. With regards.

Sent from my iPhone

Begin forwarded message:

> **From:** Jayant Pawar <jayantpawar26@gmail.com>
> **Date:** 24 November 2020 at 9:23:14 AM IST
> **To:** DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
> **Subject: ToT Agreement_Updated**
>
> Dear Sir,
> PFA updated copy of ToT agreement.
>
> thank you,

Regards,
Dr. Jayant Pawar

ToT Draft Modified_Nov. 27_2020.docx
31K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Fwd: COEP Logo

1 message

Jayant Pawar <jayantpawar26@gmail.com> Tue, Nov 3, 2020 at 11:39 AM
To: "research@kimsuniversity.in" <research@kimsuniversity.in>
Cc: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>

Dear Sir,
Following is the email received from COEP for UV SEVAK 360. They have sent me the logo of COEP to be added on to the product and info video.

---------- Forwarded message ---------
From: **dns.instru@coep.ac.in** <dns.instru@coep.ac.in>
Date: Mon, 2 Nov 2020 at 11:20 PM
Subject: COEP Logo
To: Jayant Pawar <jayantpawar26@gmail.com>

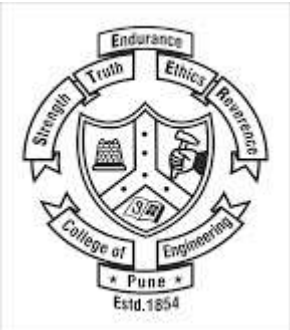
Dear Sir

Video Looks good, I will be happy if you could add more on COEP contribution and Collaborative efforts from COEP side. Please find attached high quality COEP Logo. I have started work and I hope it will be completed by weekend.

Thank You

D. N. Sonawane, Ph.D.
Associate Professor
Department of Instrumentation and Control
College of Engineering, Pune
020-25507185
9822888944
www.coep.org.in/coepembeddedlab

--
Regards,
Dr. Jayant Pawar



COEP New Logo.jpg
161K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Innovation Sheet: 4 and 5

1 message

Jayant Pawar <jayantpawar26@gmail.com> Fri, Mar 19, 2021 at 9:25 AM
To: Shruti Chari Ajgaonkar <shrutichari.ajgaonkar@gmail.com>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>

Dear Madam,
As per your requirement I herewith attached the innovation sheet of;
1. UV-SEVAK 360°for Quick Surface Sterilization of Hospital Utensils
2. Nano-Herbal Coated Refillable Eco-friendly Anti-Virulent Daily Protective Facemask (K-BioMask) for your reference. Please design the draft as discussed earlier.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad
Phone: +91 8600867813

2 attachments

UV-SEVAK 360_Dr Jayant Pawar.docx
348K

Nanoherbal Coated Facemask (K-BioMask)_Dr Jayant Pawar.docx
11415K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

ISO certification documents for UV- SEVAK - 360

3 messages

Jayant Pawar <jayantpawar26@gmail.com> Mon, Dec 14, 2020 at 2:54 PM
To: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>
Cc: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>

Dear Sir,
PFA necessary documents for ISO Certification of our product (UV-SEVAK 360 degree). As we need to provide all the testing reports I herewith attached all the testing reports from microbiology lab and electronic design report from COEP. We also need to provide legal registration documents like proprietary, partnership, Pvt Ltd, certificate of incorporation etc. of our organization.
Please do the needful.

Thank you sir,

Regards,
Dr. Jayant Pawar

4 attachments

- **Annexure II_Microbiology Testing Report_Fungal cultures.pdf** 590K
- **Annexure I_Microbiology Testing Report_Bacterial cultures .pdf** 592K
- **Annexure III_Electronics Testing Report_Device.xps** 958K
- **UV SEVAK 360 degree_ draft for ISO CERTIFICATION.docx** 741K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Mon, Dec 14, 2020 at 3:05 PM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

[Quoted text hidden]

4 attachments

- **Annexure II_Microbiology Testing Report_Fungal cultures.pdf** 590K
- **Annexure I_Microbiology Testing Report_Bacterial cultures .pdf** 592K
- **Annexure III_Electronics Testing Report_Device.xps** 958K
- **UV SEVAK 360 degree_ draft for ISO CERTIFICATION.docx** 741K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Mon, Dec 14, 2020 at 3:13 PM
To: Dinesh Agrawal <dkagarwal_1512@yahoo.co.in>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

[Quoted text hidden]

5 attachments

- **Annexure II_Microbiology Testing Report_Fungal cultures.pdf**

590K

Annexure I_Microbiology Testing Report_Bacterial cultures .pdf
592K

Annexure III_Electronics Testing Report_Device.xps
958K

UV SEVAK 360 degree_ draft for ISO CERTIFICATION.docx
741K

Notification.pdf
565K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

ISO Certification_ initial draft_UV SEVAK 360 degree

1 message

Jayant Pawar <jayantpawar26@gmail.com> Sat, Nov 21, 2020 at 9:59 PM
To: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir,
PFA initial draft for ISO Certification of our product (UV-SEVAK 360 degree). We need to provide all the testing reports along with this draft, however, we have reports from our microbiology labs and requested electronic design report from COEP. We also need to provide legal registration documents like proprietary, partnership, Pvt Ltd, certificate of incorporation etc. of our organization. As soon as we get all the documents we can proceed further to submit the application.

Thank you sir,

Regards,
Dr. Jayant Pawar

UV SEVAK 360 degree_ draft for ISO CERTIFICATION.docx
740K

Minutes of Meeting held at Pune on December 2_2020

4 messages

Jayant Pawar <jayantpawar26@gmail.com> Wed, Dec 2, 2020 at 7:26 PM
To: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir,
With reference to the following agenda of the meeting held at Pune on December 2nd, 2020, please find minutes of meeting for your reference.

1. ToT of Biomask

Mr. Sachin Zarekar, Owner, Meena Clothing showed interest in purchasing our technology. After detailed discussion with him about business possibilities he has agreed upon recalculation for the royalty (2% on annual turnover) and gross settlement amount (3 lakhs) proposed by us. He shall send us the proposal in the next couple of days for our final approval.

2. Indo-UK Research Proposal

We had a discussion on the research project which we are applying in collaboration with Cardiff University for the Indo-UK Research grant. I informed you, as per the requirement of the proposal we have sent the total budget of the project to Cardiff University,UK for setting up the BSL2 lab at KIMSDU. In this regard, I had meetings with companies like ADEETECH, CODEX and De Novo Tech and made inquiries about the tentative quotation for the lab infrastructure which I need to mention in the budget of the project and communicate with the funding agency. Further, If we receive funding from this project we shall contact any of these companies through the purchase department of our university for setting up the BSL2 lab.

3. ToT of UV-SEVAK

We discussed to finalize the terms and conditions of the ToT agreement shall be made between KIMSDU, COEP and NBE Tech. As per the amendment in the ToT draft made by the Dr. Ahuja Sir and Dr. Sonavane, I hive prepared the final draft and communicated with you and NBE Tech for final approval and print. Also, we discussed the plan for ISO certification of device, as per your advice I have prepared all the required documents, however, letter of establishment from university is yet to receive to proceed further.

4. Project on Development of Healthcare Dashboard to assist healthcare professionals

I informed about my meeting with Dr. Rajesh Chaudhari, from i2IT, Pune regarding project proposal on development of dashboard based on data obtained from our hospital during Covid-19 pandemic. We discussed to have few doctors from our hospital for this project to plan and execute the research idea with the help of data science, machine learning and artificial intelligence. We shall contact I2IT after checking the feasibility of project and availability of our doctors for their expert opinion.

5. Sanitizer for JSL

I informed you about the progress of project on making sanitizer for JSL. I inquired about the possibilities of adding essential oils and color into the WHO recommended formulations of sanitizer. I also started checking for the certification process of our product.

6. Innovation Gallery

We discussed about the developmental plans for innovation gallery. The list of products with their photos and technical details has to be finalized as soon as possible to start making prototypes from different fabricators. Two fabricators have been identified for making electromechanical prototypes.

Meeting got over after the discussion of detail plans for execution of above mentioned points.

Thank you sir for your time

Regards,
Dr. Jayant Pawar

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Fri, Dec 4, 2020 at 3:00 PM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

Please provide a print

[Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Sat, Dec 5, 2020 at 10:47 AM
To: "KIMSDU, Karad" <registrar@kimskarad.in>

[Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Sat, Dec 5, 2020 at 10:47 AM
To: executiveeditor@jkimsu.com

[Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Press Note of UV-Sterilizer Sevak

1 message

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Dec 9, 2020 at 5:27 PM
To: "Prof.B.B.Ahuja" <director@coep.ac.in>
Cc: Jayant Pawar <jayantpawar26@gmail.com>

Dear Respected Sirs,

Please find attached herewith press note of UV-Sterilizer Sevak in both of English and Marathi languages.

Thanks and Regards
Rohan

By order of Additional Director of Research, KIMSDU, Karad

2 attachments

Marathi Press Note_UV Sterilizer.docx
16K

English Press Note_UV Sterilizer.docx
15K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Press Note: UV Sterilizer

5 messages

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Tue, Dec 8, 2020 at 5:12 PM
To: Jayant Pawar <jayantpawar26@gmail.com>

Dear SIr,

Pls find the attachment for a press note and advice to make necessary corrections.

Regards,
Dr D K Agarwal

UV sterilizer.docx
13K

Jayant Pawar <jayantpawar26@gmail.com> Tue, Dec 8, 2020 at 8:35 PM
To: Research Krishna Institute of Medical Sciences University <research@kimskarad.in>
Cc: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>

Dear Sir,
PFA the updated draft of press note. Please make corrections if required.

Thank you,

Regards,
Dr. Jayant Pawar

[Quoted text hidden]

Press Note_UV Sterilizer.docx
16K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Wed, Dec 9, 2020 at 2:59 PM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

attn rohan

----- Forwarded message -----
From: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Karad Media Room Lad <sushillad1@gmail.com>
Sent: Tuesday, 8 December, 2020, 08:45:16 pm IST
Subject: Fwd: Press Note: UV Sterilizer

Final draft, please translate into Marathi till tomorrow noon.

Sent from my iPhone

Begin forwarded message:

From: Jayant Pawar <jayantpawar26@gmail.com>
Date: 8 December 2020 at 8:36:01 PM IST
To: Research Krishna Institute of Medical Sciences University <research@kimskarad.in>
Cc: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Subject: Re: Press Note: UV Sterilizer

[Quoted text hidden]

Press Note_UV Sterilizer.docx
16K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Wed, Dec 9, 2020 at 2:59 PM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

attn Rohan

[Quoted text hidden]

Press Note_UV Sterilizer.docx
16K

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Wed, Dec 9, 2020 at 3:05 PM
To: Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

----- Forwarded message -----
From: Sushil Lad <sushillad1@gmail.com>
To: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Sent: Wednesday, 9 December, 2020, 02:49:29 pm IST
Subject: Re: Press Note: UV Sterilizer

प्रेस नोट

युव्ही सेवक 360°

सध्या जगभर पसरलेल्या कोविड – १९ साथीच्या रोगामुळे आरोग्य सेवा पुरविणाऱ्या डॉक्टर्स, नर्सिंग स्टाफ, कर्मचाऱ्यांवर हा संसर्ग रोखण्यासाठी प्रचंड दबाव वाढला आहे. किंबहुना ही आरोग्यसेवा देताना ते स्वत: संसर्गित होण्याची जास्त शक्यता आहे. खरंतर हे विषाणू अनेक ठिकाणी आढळतात. अगदी जिथे कोविड-१९ चे उपचार सुरू आहेत, अशा हॉस्पिटलमध्ये कार्यरत असलेल्या डॉक्टर्सच्या वैद्यकीय साधनांवर; तसेच वॉर्ड, ओपीडी, ऑपरेशन थिएटर येथील अन्य वैद्यकीय साहित्य, औषधी भांड्यांवरही हे विषाणू आढळून येतात. वास्तविक रूग्णालयातील ही साधने केवळ सार्स-को व्ही २ ने बाधित असतात, असे नाही. तर ही दूषित साधने मोठ्या प्रमाणावर लोकसंख्येला तसेच आरोग्य सेवा पुरविणाऱ्या डॉक्टर्स, नर्सिंग स्टाफ, कर्मचाऱ्यांनाही संसर्ग बाधा पोहचवू शकतात, याकडे जागतिक संशोधकांनी लक्ष वेधले आहे.

पारंपारिक निर्जंतुकीकरणाच्या पद्धती या नेहमीच व्यवहार्य नसतात, कारण त्या वेळखाऊ असतात. तसेच आयआर थर्मामीटर, पल्स ऑक्सिमीटर, स्टेथोस्कोप, ईसीजी इलेक्ट्रोड्स, दंत साधने इत्यादी

उपकरणांसाठी योग्य नसतात. रूग्णालयातील विविध भांडी, पोटेबल वैद्यकीय उपकरणांमधून विषाणू आणि इतर जंतूंच्या प्रभावी आणि जलद नायनाटासाठी रूग्णालयाच्या सेटअपमध्ये युव्ही (अल्ट्राव्हायलेट) निर्जंतुकीकरणाचे महत्व अलीकडील कोविड-१९ साथीच्या रोगात स्पष्ट झाले आहे. याशिवाय हे सुरक्षा तंत्रज्ञान घर, हॉटेल, सलून आणि पार्लरमध्येही वापरले जाऊ शकते.

म्हणूनच, कराड येथील कृष्णा वैद्यकीय विज्ञान अभिमत विद्यापीठाचे संशोधन संचालनालय आणि कॉलेज ऑफ इंजिनिअरिंग पुणे च्या इन्स्ट्रुमेंटेशन अॅन्ड कंट्रोल विभागाच्या संयुक्त संशोधनातून अभिनव असे युव्ही निर्जंतुकीकरण यंत्र साकारण्यात आले आहे. या नाविण्यपूर्ण उपकरणात अल्ट्राव्हायोलेट लाईट आणि नॅनोमेटेरियल लेप यांच्या एकत्रीकरणातून समाजात विविध स्तरावर वापरण्यात आलेली औषधी भांडी, तसेच वैद्यकीय उपकरणांचे संपूर्ण निर्जंतुकीकरण करण्यात येते. विशिष्ट प्रकारच्या विविध वस्तूंच्या निर्जंतुकीकरणासाठी ३० सेकंद ते ५ मिनिटांपर्यंतचा ऑप्टिमाइझ्ड एक्सपोजर अवधी या उपकरणासाठी प्रमाणित करण्यात आला असून, विविध प्रयोगशाळांतून याचे प्रमाणीकरणही करण्यात आले आहे.

एनबीई टेक, पुणे द्वारा युव्ही सेवक 360° या ब्रँड नावाने हे उपकरण बाजारात उपलब्ध केले जाणार आहे. युव्ही सेवक 360° हे उपकरण विविध वैद्यकीय आणि इतर घरगुती क्षेत्रांमध्ये विषाणू (व्हायरस), जिवाणू (बॅक्टेरिया) आणि बुरशीसारख्या जंतूंनी दूषित झालेल्या विविध साधनांचे निर्जंतुकीकरण करण्यासाठी वापराच्या गरजेनुसार ३०, ४० आणि ६० लिटर क्षमतेमध्ये उपलब्ध असणार आहे.

कृष्णा अभिमत विद्यापीठाचे कुलपती डॉ. सुरेश भोसले यांच्या दूरदृष्टीतून अनेक लोकोपयोगी संशोधने सुरू असून, या संशोधनाचा लाभ समाजातील विविध घटकांना व्हावा, यासाठी ही संशोधित उपकरणे वाजवी दरात लोकांना उपलब्ध करून देण्याचा त्यांचा मनोदय आहे. युव्ही सेवक 360° च्या संशोधन आणि विकासाच्या प्रयत्नासाठी कृष्णा अभिमत विद्यापीठाचे अतिरिक्त संशोधन संचालक डॉ. डी. के. अग्रवाल, संशोधन असोसिएट डॉ. जयंत पवार आणि कॉलेज ऑफ इंजिनिअरिंग पुणे च्या इन्स्ट्रुमेंटेशन अॅन्ड कंट्रोल विभागाचे प्रमुख डॉ. डी. एन. सोनवणे यांनी प्रयत्न केले. कॉलेज ऑफ इंजिनिअरिंग पुणे चे संचालक डॉ. बी. बी. आहुजा यांच्या मार्गदर्शनाखाली या तंत्रज्ञानाचे हस्तांतरण एनबीई टेक, पुणे यांना करण्यात येत आहे.

On Tue, 8 Dec 2020 at 20:45, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> wrote:

> Final draft, please translate into Marathi till tomorrow noon.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> **From:** Jayant Pawar <jayantpawar26@gmail.com>
> **Date:** 8 December 2020 at 8:36:01 PM IST
> **To:** Research Krishna Institute of Medical Sciences University <research@kimskarad.in>
> **Cc:** DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
> **Subject: Re: Press Note: UV Sterilizer**
>
> [Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Technology Report_UV - SEVAK 360 Device

2 messages

Jayant Pawar <jayantpawar26@gmail.com> Wed, Mar 10, 2021 at 1:26 PM
To: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Dr. Rohan,
As per the discussion with Dr. Agarwal Sir, I herewith attached the detailed technology report of UV-SEVAK 360 device for your reference. Please let me know if any additional information is required.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad

UV-SEVAK 360_Technology report.docx
695K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Wed, Mar 10, 2021 at 2:51 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Thanks for the mail.
[Quoted text hidden]

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

UV Sterilizer_NBE Tech_Information brochure cum user manual_UV Sevak360 - Pro_Final.docx

2 messages

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Thu, Feb 25, 2021 at 10:47 AM
To: "dkagarwal_1512@yahoo in" <dkagarwal_1512@yahoo.co.in>, Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

Sent from my iPhone

UV Sterilizer_NBE Tech_Information brochure cum user manual_UV Sevak360 - Pro_Final.docx
476K

Research Krishna Institute of Medical Sciences University <research@kimskarad.in> Sat, Feb 27, 2021 at 7:10 PM
To: Trupti Patil <truptivp2010@gmail.com>

---------- Forwarded message ---------
From: **DINESH AGARWAL** <dkagarwal_1512@yahoo.co.in>
Date: Thu, Feb 25, 2021 at 10:48 AM
Subject: UV Sterilizer_NBE Tech_Information brochure cum user manual_UV Sevak360 - Pro_Final.docx
To: dkagarwal_1512@yahoo in <dkagarwal_1512@yahoo.co.in>, Director Research Dr Risbud KIMSED Malkapur <research@kimsuniversity.in>

Sent from my iPhone

UV Sterilizer_NBE Tech_Information brochure cum user manual_UV Sevak360 - Pro_Final.docx
476K

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University
Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist : Satara (Maharashtra State) Pin : 415539 Tel : 02164-241555-8 Fax: 02164-243273/242195
Website : www.kimsuniversity.in E-mail: research@kimsuniversity.in

KIMSDU/DR/266/2019 Date: - 03/04/2019

Meeting Notice

Dear Sir/Madam,

This is to inform you that the meeting for Formulation of Curriculum & Examination Scheme for the proposed P.G. Diploma/Diploma Courses under the umbrella of Executive Development Programs, is being held on 9th April 2019 at 12 hours in the chamber of undersigned at our campus in the university building.

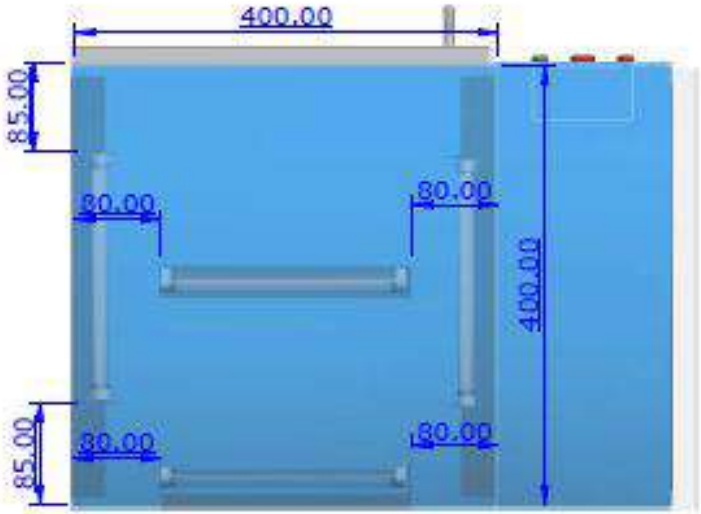
Terms and reference of the committee shall be -

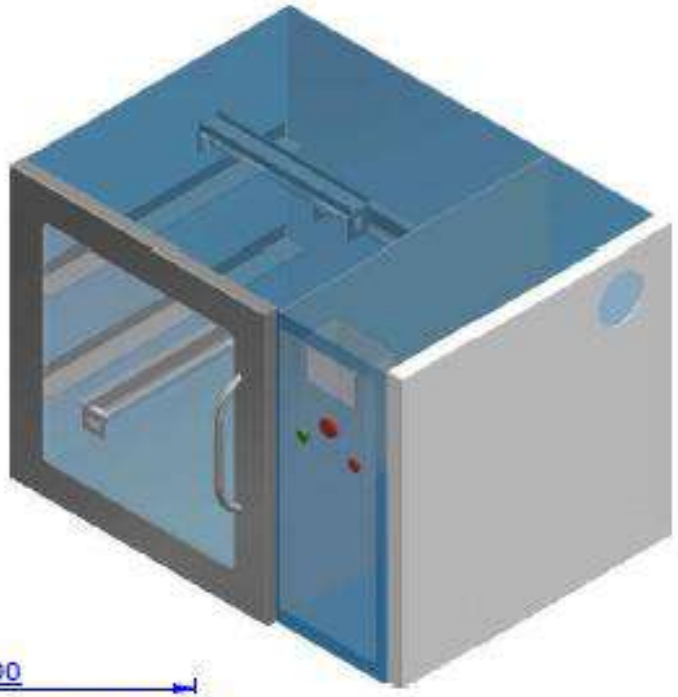
1. To decide the feasibility of courses to be run by university under the domain of Interdisciplinary domain.
2. Identification and nomenclature of course.
3. Duration of course.
4. Formulation of syllabi for proposed courses.
5. Examination scheme of the proposed courses.
6. Teaching hours and Identification of teaching faculties.

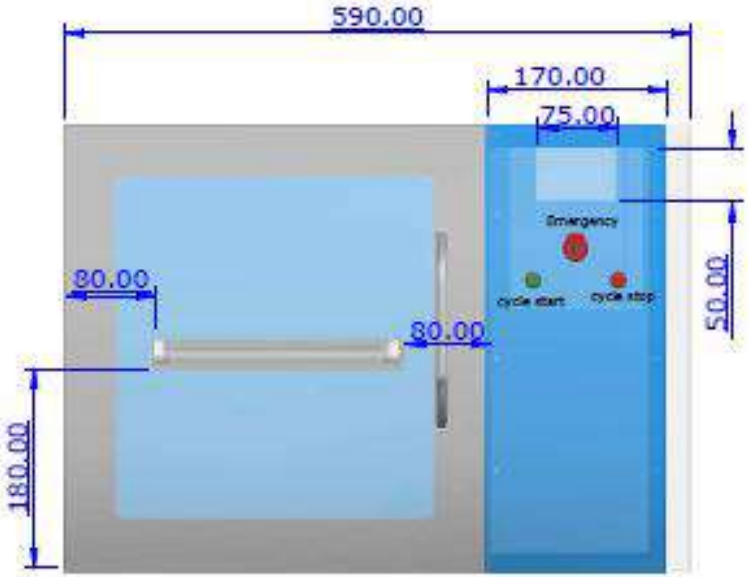
It will be highly appreciated if a line of conformation of your attendance is acknowledged on our email.

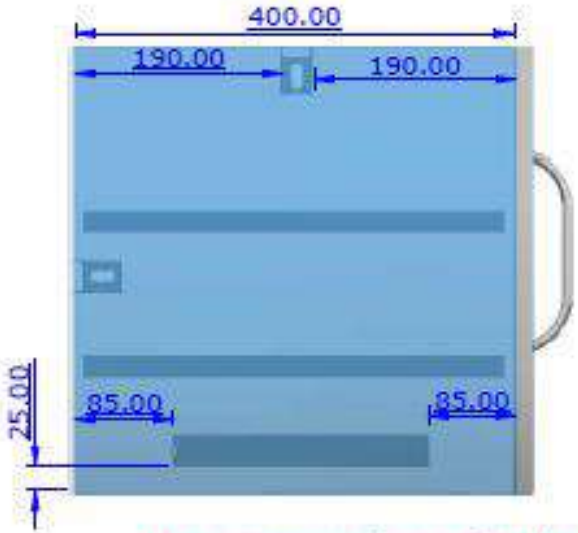
With Warm Regards,

Dr. D. K. Agarwal
Co-ordinator
KIMSDU, Karad.









Note-Dimension of cutout for the PLC may change as per model Selected.

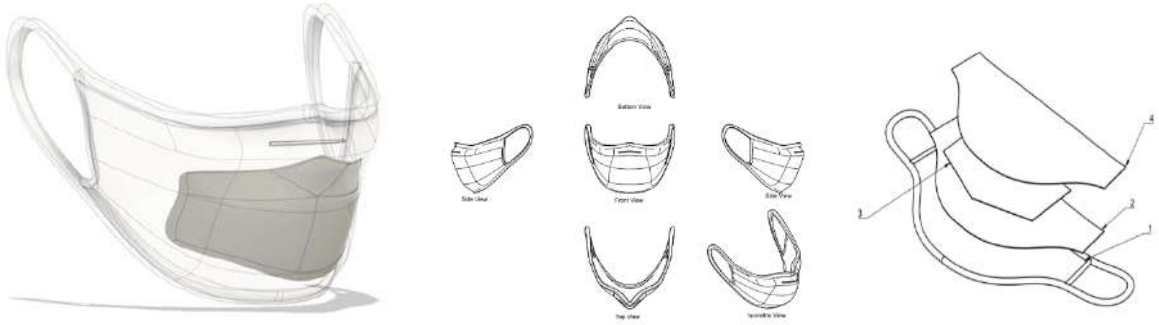
Nano-Herbal Coated Refillable Eco-friendly Anti-Virulent Daily Protective Facemask (K-BioMask)

Inventor: Dr. Jayant Pawar and Dr. G. S. Karande

Institute: Directorate of Research, KIAS and KIMS

Patent/Copyright No.: L-93521/2020

Patent No.: Application No. 336758-001 (Electrostatic Fabric Respiratory-Mask) and Application No. 336759-001 (Electrostatic Fabric Respiratory-Mask with filter (set))



Designs of K-BioMask

Rationale

Currently, in COVID-19 pandemic it has become very clear that the use of face masks in public places can significantly prevent coronavirus (SARS COV-2) infection. Even WHO recommended wearing of masks by healthcare workers, ageing people, immunocompromised people and SARC-CoV-2 infected people as this practice was found to be a useful tool to prevent new infections in current COVID-19 pandemic (WHO, June 5th 2020). Moreover, general healthy public was advised to wear fabric masks by Center for Disease Control and Prevention (CDC, July 16th 2020). Additionally, medical masks are supposed to be discarded after each patient encounter or exposure to virus-laden aerosols and hence their disposability is a major concern highlighted in past few months in the upheaval of the COVID-19 pandemic. Therefore, it is mandatory to develop anti-virulent biodegradable mask from the material with increased reusability and ability to get sterilized by different ways. In this context, to grapple with shortages of masks and its disposal, the present study introduced certified woven fabric materials for making the masks with special design to incorporate replaceable anti-virulent cellulose layer coated with

nano-herbal formulation for blocking and neutralizing aerosols containing virulent pathogens and other air-borne pathogens.

Contemporary Techniques and Drawbacks:

1. Medical Masks (one-time use medical mask, medical surgical mask, and medical protective mask)
2. Particle Protective Masks (daily protective mask, PM2.5 protective mask, and protective masks (with plus P100 filter cotton))

- Material used: non-woven polypropylene fiber with/without exhalation valve to reduce breathing resistance.
- Protection against: Air borne pathogens, air pollutants, aerosols
- Mechanism of protection: Electrostatic, filtration, physical barrier
- Usages: one to three times (if taken off the mask after going home, put it in a ventilated environment, naturally dry and dry the moisture in it, prevent the accumulation of surface flora, then it can be used for maximum of 3 days), disposable, non-washable
- Price range: ~ Rs. 30 to 150 per unit for disposable and ~ Rs. 80 to 200 per unit for reusable, washable (max. 30 wash) masks.

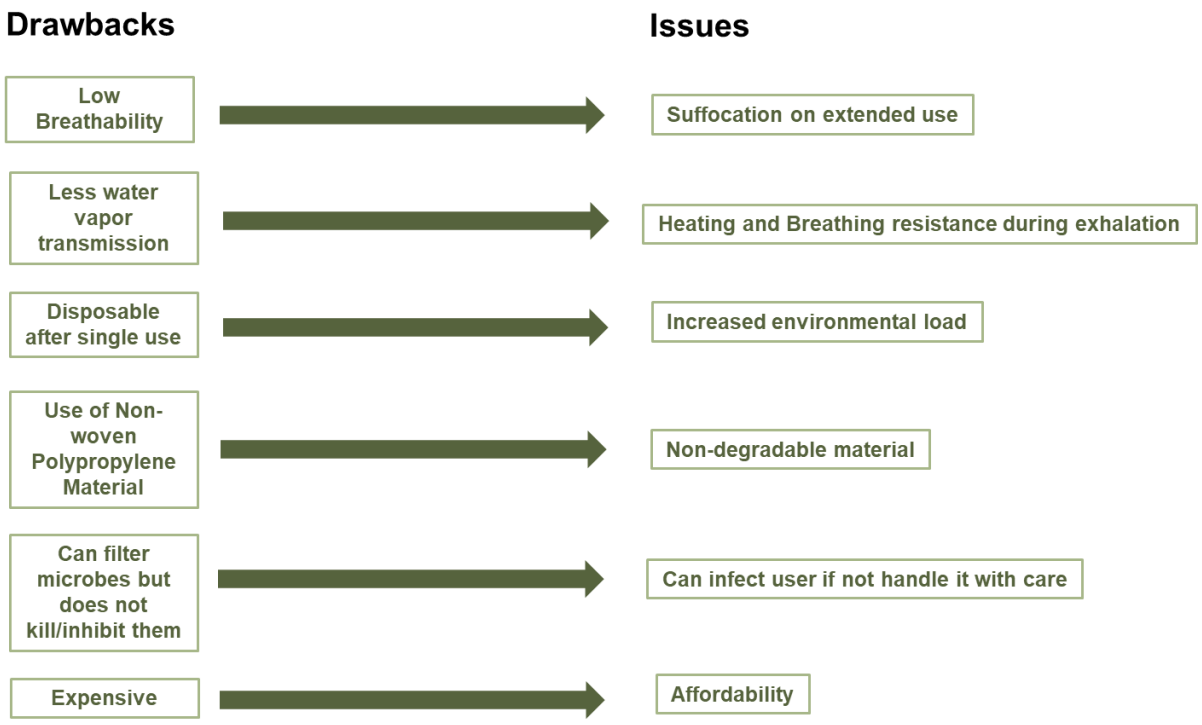


Fig. 1. Drawbacks and associated issues of conventional masks

Innovation

The product innovation is in the interdisciplinary field of biological science, nanotechnology and computational science. It relates to a development of anti-virulent face mask which can protect the user from all the possible pathogens (viruses, bacteria, fungi etc.) transmitting through air and air droplets. The most effective masks used by health workers are medical masks, FFP1, FFP2, FFP3, PAPR, SAR etc., which offer protection from droplets and airborne particles due to its tight-fitting and material made of spun-bonded polypropylene. The R&D efforts will revolve around sandwich layer comprising active functional layer of nano- herbal formulation coating over disposable filter paper. With this design, anti-virulent active layer sandwiched between specific fabric materials can be replaced after 5 days of use, while the remainder of the mask can be used repeatedly after washing and sterilization.

The Components of the Mask: (Tested and certified at SITRA and BTRA)

1. Layer 1 (innermost layer): Preventive in function, breathable, soft, washable and reusable.

Choice of material: Black, 600 threaded woven cloth.

2. Replaceable anti-virulent paper: Preventive/Inhibitory in function, made up of filter paper (Whatman Grade 1 with particle retention of 11 µm at 98 % efficiency), coated with nano-herbal anti-virulent formulation, replaceable after use.

Choice of material: Organic formulation (herbal extracts &/or essential oils), Inorganic formulations (metal oxide nanoparticles).

3. Layer 2 (Middle layer): Preventive, electrostatic property, washable, reusable, breathable.

Choice of material: Chiffon/ Silk-chiffon

4. Layer 3 (Outermost layer): Dust repellent properties, antistatic property, washable, reusable, and breathable.

Choice of material: Super polyester

Schematic representation of proposed mask

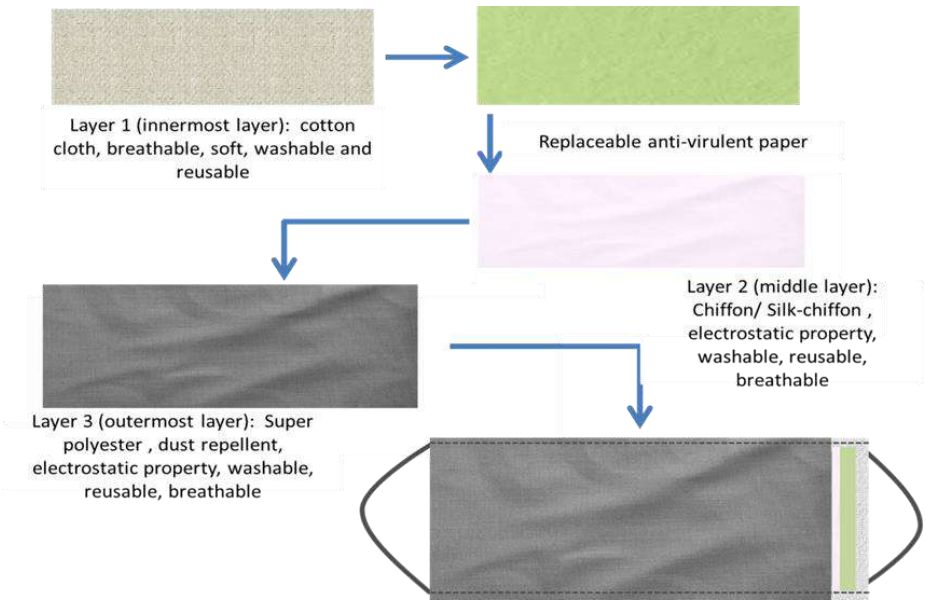


Fig. 2. Schematic of the K- BioMask

Materials and Methods

Material Selection for Anti-virulent paper

For development of inhibitory anti-virulent paper, the reported organic anti-virulent (anti-viral, anti-bacterial and anti-fungal) extract and essential oils from plants such as Cinnamomum zeylanicum, Eucalyptus globulus, Melaleuca alternifolia, Rosamarinus officianalis and metal oxide nanomaterials like CuO and ZnO nanoparticles has been used to coat the cellulose filter paper. These reported anti-virulent materials/hybrids was used in various proportions and tested to obtain effective and optimized formulation for the developed product. There are many reported natural and

synthetic remedies that are found to have anti-viral, anti-bacterial and anti-fungal properties, which further can be used for making of effective anti-virulent formulation to develop functionalized active anti-virulent substrate. The reported materials found to have anti-virulent properties include, black elderberry (Sambucusnigra) (Chen et al., 2014), Echinacea (Echinacea purpurea) (Pleschka et al., 2009), Garlic (Upadhyay, 2016), Green tea (Camellia sinensis) (Friedman, 2007), Liquorice (Gish andKeeffe, 1995), Olive trees (Olea europea) (Salih et al., 2017), Cinnamomum zeylanicum , Daucuscarota , Eucalyptus globulus and Rosmarinus officinalis (Brochot et al., 2017), essential oils of thyme, lemon, oregano and lavender (Man et al., 2019). While inorganic nanomaterials like colloidal silver (Petica et al., 2008), CuO nanoparticles (Tavakoli et al., 2020), ZnO nanoparticles (Ghaffari et al., 2019) and Au nanoparticles (Kim et al., 2020) etc. have also been reported to be anti-viral. However, this list of organic and inorganic nanomaterials is not comprehensive. There are many materials/compounds which have been sporadically reported and some of them are not reported at all.

An attempt was made in this study to use computational tool for data mining, data classification, data enrichment and molecular docking to obtain an appropriate list of more suitable anti-virulent compounds from extracts and essential oils (Table 1, 2 and 3) and (figure 3). Additionally, it is highly recommended for more effective results that at least two or three of these materials/compounds should be used in conjunction in order to vanquish viruses and other microbes.

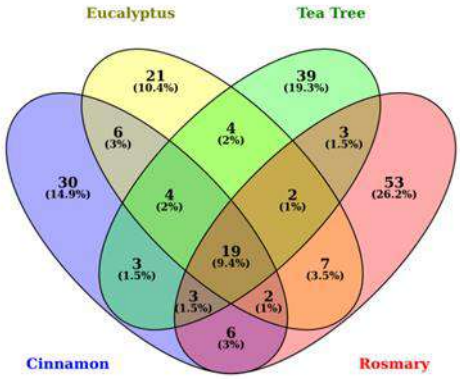


Figure 3: Selected Active Compounds for Anti-virulent Formulation

In this context, the formulation can be made out of available materials/compounds in India and can be used effectively for development of proposed functionalized active anti-virulent substrate for face mask. Based on the data mining and computational (studying interaction of these compounds/materials with SARS COV-2 virus proteins) results, the compounds/materials have been selected. Finally, based on the reported data obtained from computational analysis and molecular docking, the formulation was made from the whole extract of Cinnamomum zeylanicum and essential oils of Eucalyptus globulus, Melaleuca alternifolia and Rosamarinus officianalis with addition of CuO and ZnO nanomaterials having anti-virulent activity. The formulation was coated on to the cellulose filter paper by spray coating method and subsequent drying the same at room temperature.

Characterization of Materials

The characterization of all the components was done by FESEM, EDS, UV-Vis Spectroscopy, XRD, FT-IR Spectroscopy, etc. to understand the surface

morphology, elemental distribution and identification of herbal components on the paper, optical and structural properties of nanomaterials, chemical interaction between nanomaterials, herbal compounds and cellulose paper, respectively.

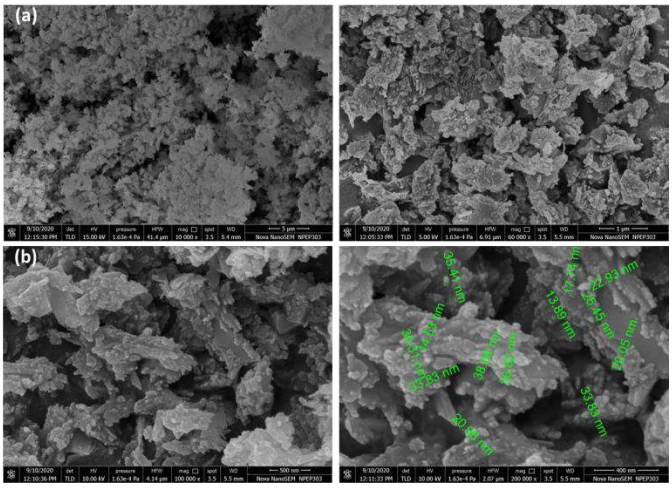


Figure 4: FESEM of ZnO NPs

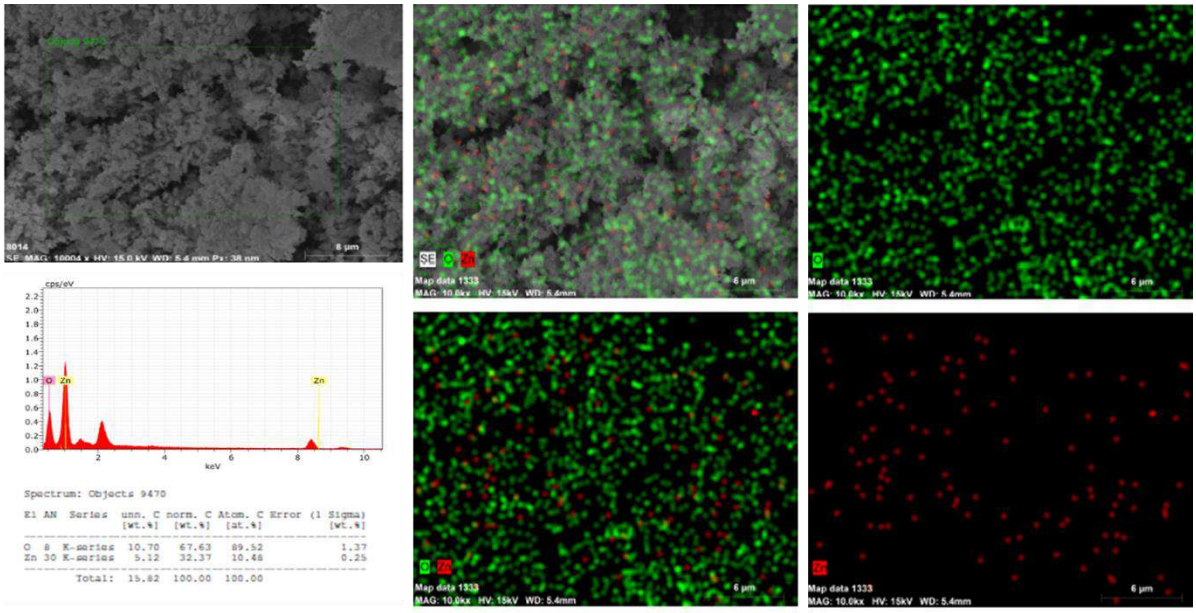


Figure 5: EDS of ZnO NPs

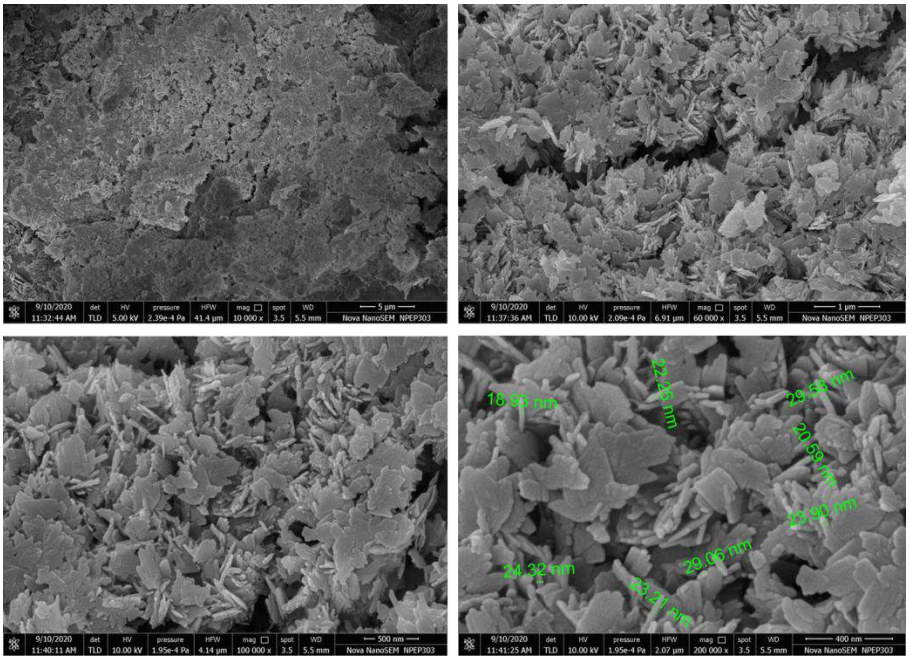


Figure 6: FESEM of CuO NPs

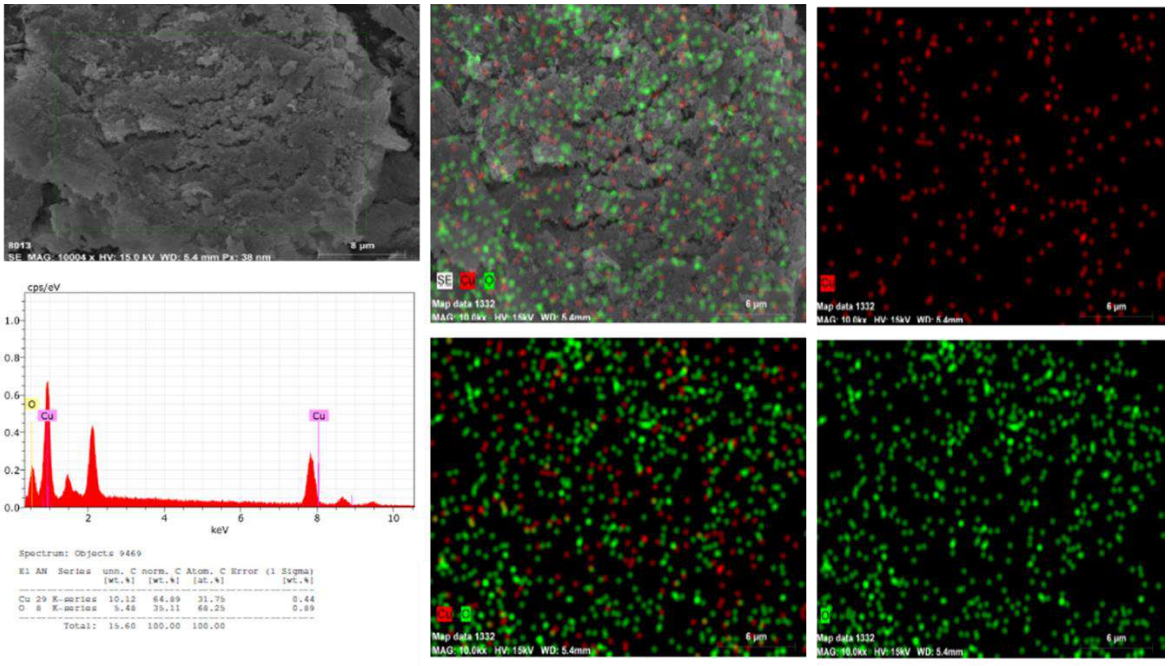


Figure 7: EDS of CuO NPs

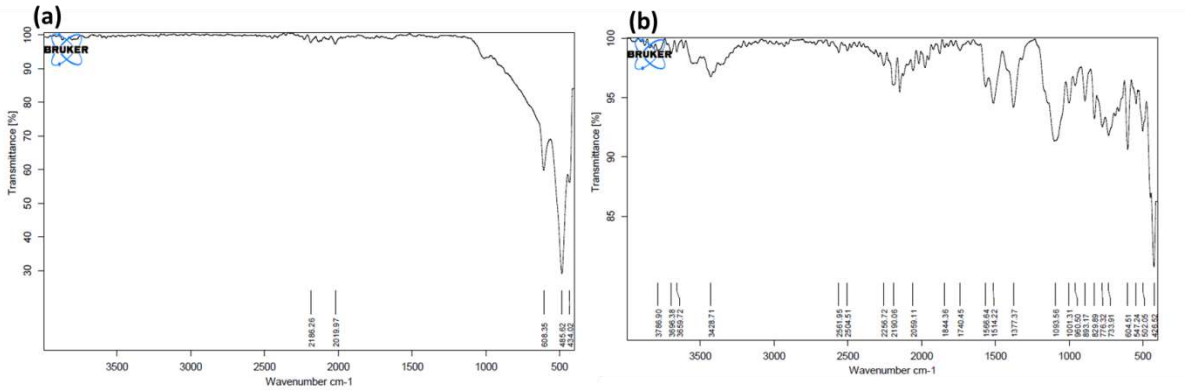


Figure 8: FT-IR Spectra of CuO and ZnO NPs

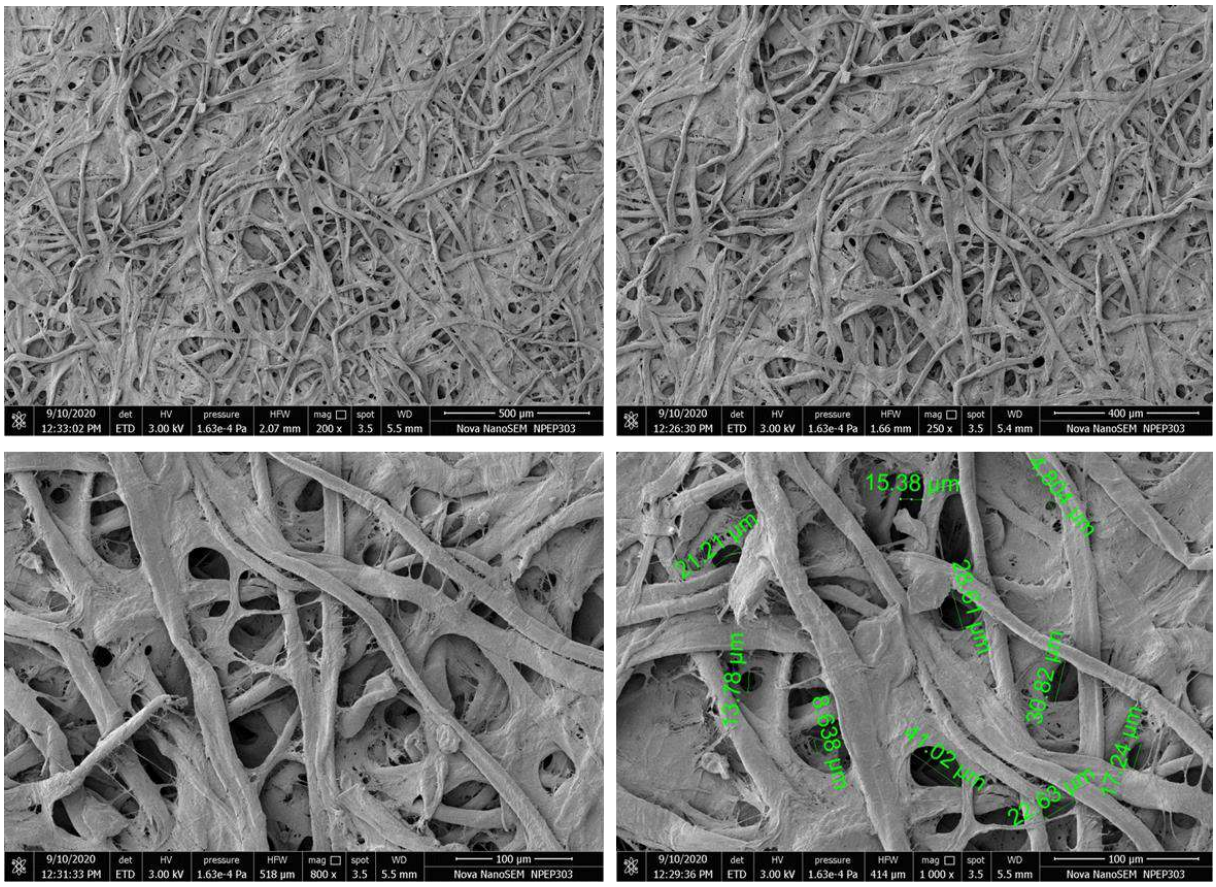


Figure 9: FESEM of Blank Cellulose Filter Paper

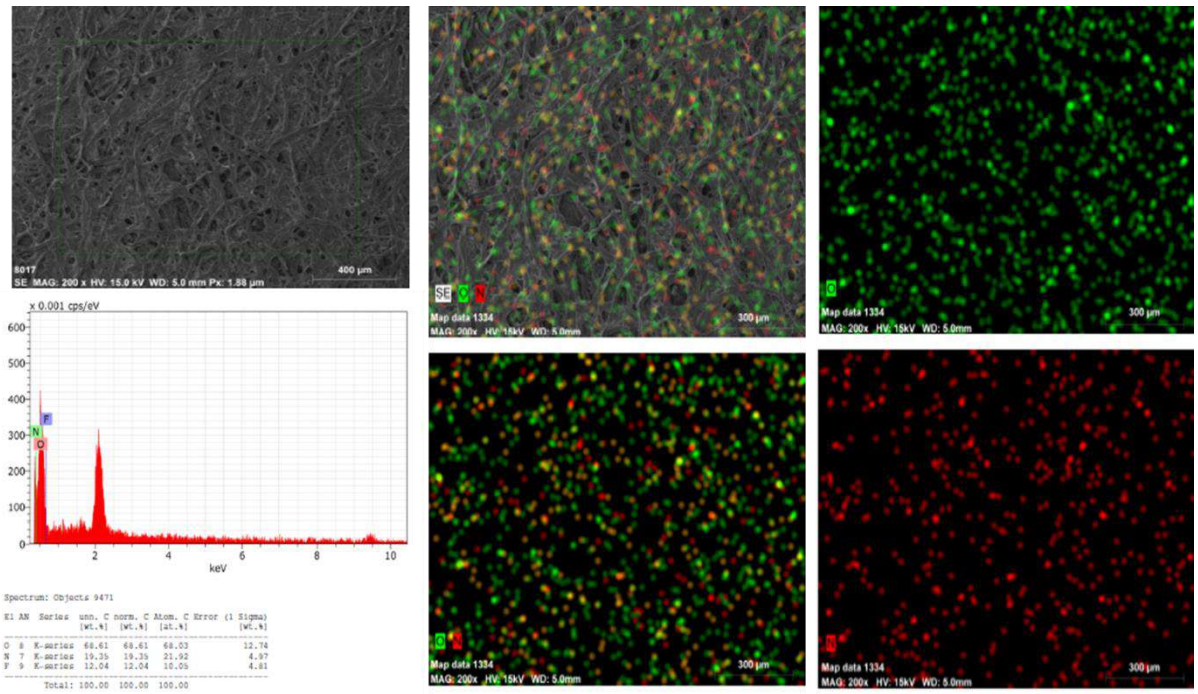


Figure 10: EDS of Blank Cellulose Filter Paper

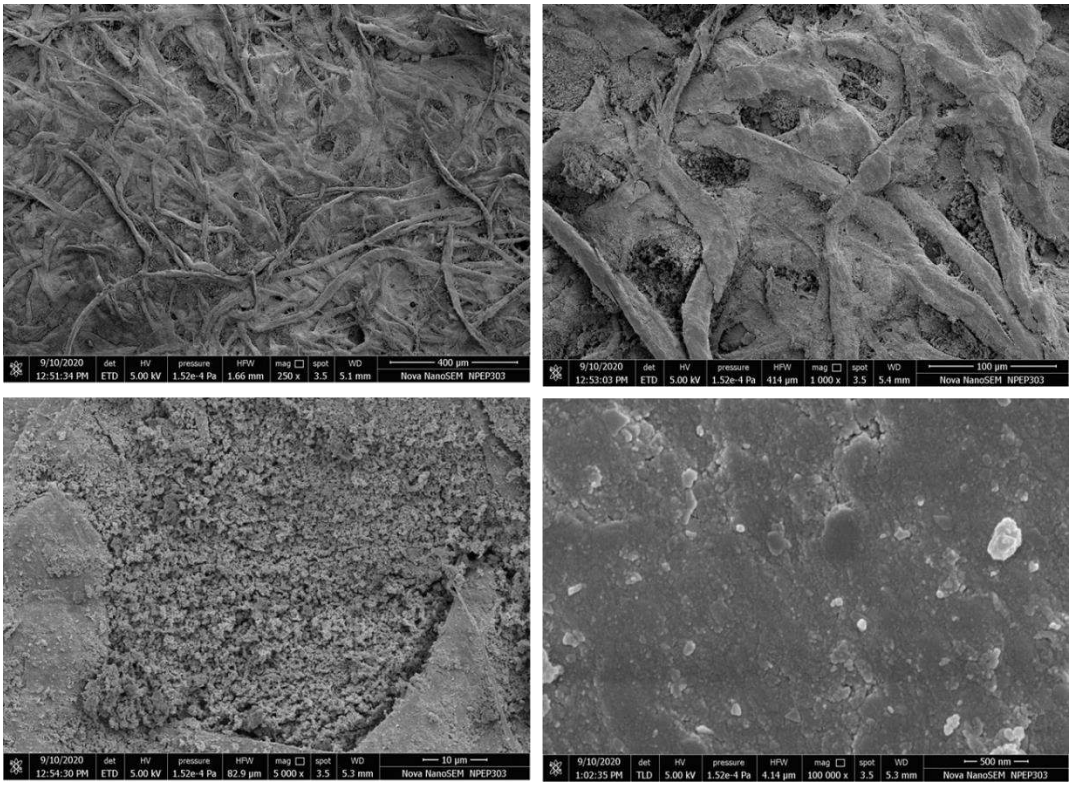


Figure 11: FESEM of Coated Cellulose Filter Paper

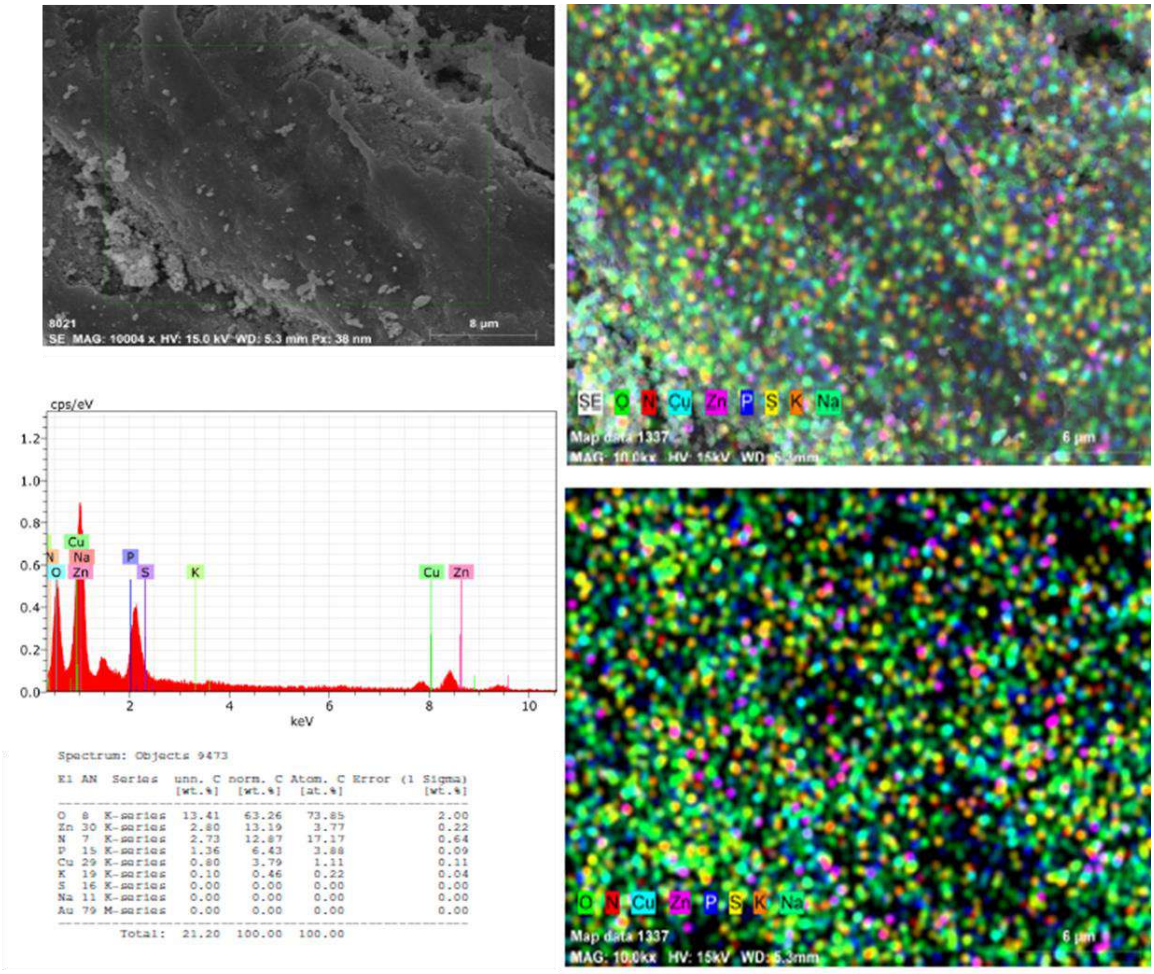


Figure 12: (a) EDS of Coated Cellulose Filter Paper

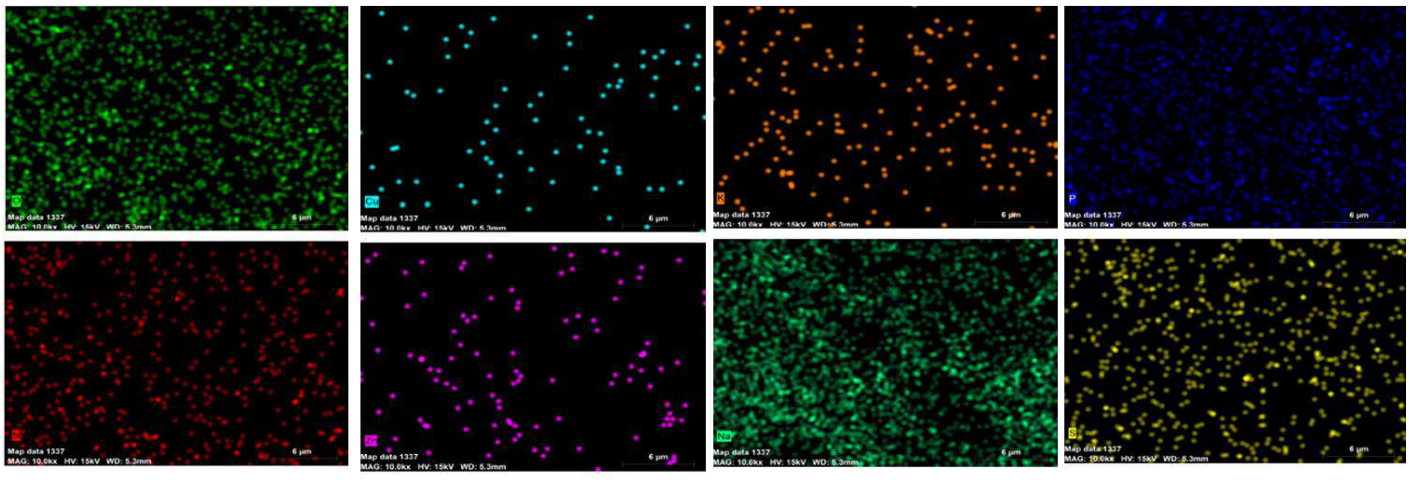


Figure 13: (b) EDS of Coated Cellulose Filter Paper (distribution)

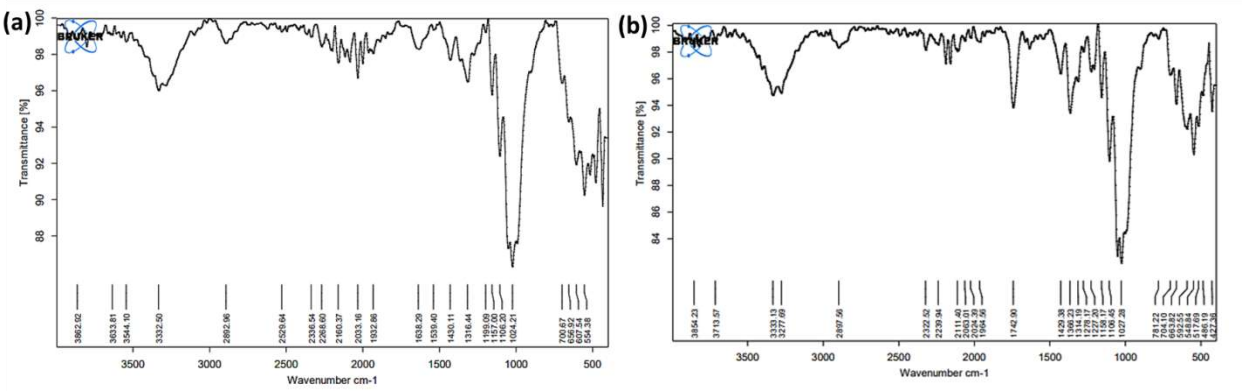


Figure 14: FT-IR Spectra of Blank and Coated Cellulose Filter Paper

Fabric Testing and Certified by BTRA, Mumbai (Detail reports attached as Annexure VII)

1. Weight (GSM) testing: 254.7 (KT 2A) and 220.2 (KT 2B), ASTM D:3776:2009:RA2017
2. Thickness (mm): 0.734 (KT 2A) and 0.655 (KT 2B), ASTM D:1777:1696:RA2015

Testing and Validations (Initial prototype)* (Detail reports attached as Annexure VII)

A. Chemical Test:

3. Splash Resistance-ASTM F1862 at 160 mmHg – PASS (SITRA Certified)
4. Flammability-16 CFR Part-1610- 38.5, Class 1 material (SITRA Certified)
5. Water Vapour Transmission Rate- ASTM E 96-95: 3178.4 gm/m^2/day (BTRA Certified)

B. Biological Test:

1. Bacterial filtration efficiency ASTM F 2101- 91.9%
2. Antimicrobial Testing AATCC 147- PASS (BTRA Certified)

C. Physical Test:

1. Breathability - Differential pressure-IS 16289: 2014- 32.03 Pa/cm^2 (SITRA Certified)
2. Particulate Filtration Efficiency at 0.3µ-A ASTM F2299/F2299M-03 : 2017 – 52.62 % (SITRA Certified)
3. Electrostatic Propensity (ISO 18080-1)- Excellent (BTRA Certified)

*** As per the requirements of the application area the parameters and performance index of the K- BioMask can be changed and improved by upgrading the layers.**

Uniqueness of the Technology

The proposed technology has unique feature as it will lead to development of functionalized active anti-virulent substrate (Layer of the mask) to improve the combat efficiency of ordinary mask against air borne infectious diseases. The active material layer is replaceable, which can be changed after 5 days of use. Additionally, electrostatic property of chiffon/silk cloth in layer 2 effectively removes charged particles (organic and inorganic) including viral capsid.

Technical Comparison with Commercial Medical Masks

Performance Index of Mask	Commercial Masks	K-BioMask
Bacterial filtration efficiency ASTM F 2101*	> 95 %	> 91 % (without anti-virulent filter)[#]
Breathability - Differential pressure- (Pa/cm^2) IS 16289: 2014*	29.4 – 49.0	32.03
Flame resistance 16CFR Pat 1610***	Class 1 Class 2 Class 3	Class 1
PFE (%)**	30	52.62
Splash Resistance- ASTM F1862 at (mmHg)***	80-160	160
Antimicrobial Testing AATCC 147	NA	Pass
Reusability (days)	1 to 4	> 90[##]
WVTR ASTM E 96-95	NA	3178.4 $gm/m^2/day$ (Comfortable for whole day use)
Fabric Material	Non-woven (Spun bonded PP)	Woven fabric material (Cotton, Chiffon/Silk, Polyester)

*EU Standard: EN 14683 – 2014; **(YY 0469 – 2004 medical surgical mask), ***US Standard: ASTM F2100-2004; [#] BFE can increase after inserting the filter paper into the mask as it has 0.11 micron pore size with antimicrobial activity due to nano-herbal coating. [##] Only filter papers has replace after every 5 days

i. Mask Advantages

- Simple design with refillable anti-viral filter paper
- Affordable
- Reliable
- Customized formulation can be used
- Common man can prepare and use it
- Recommended for use in public places, hospitals, social gatherings, travel, sanitation workers, suspected case patients, etc.
- Prevent inward or outward transmission of aerosols containing bacteria and viruses

The present innovation is indigenous and having unique specifications customized for the development of low-cost anti-virulent mask for prevention of infectious diseases like COVID-19.

KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD

Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University
Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist. : Satara (Maharashtra State) Pin : 415110 Tel : 02164-241555-8 Fax: 02164-243272/242170
Website : www.kimskarad.in E-mail: registrar@kimskarad.in

KIMSDU/N-3/4546/18

Date: 17.12.2018

:NOTIFICATION:

It is notified for general information of all concerned that as per the **Academic Council** meeting held on **27th September 2018** vide resolution number **AC/01/05/18-19** it was resolved **to start the Executive Development Programmes as per the feasibility in the Domain of Medical Health Sciences. It was resolved to constitute a committee to work out the modalities and to check the feasibility in the Domain of Medical Health Sciences.** The committee constituted for the same is as follows,

Sr. No.	Name of the Committee Member	Designation
1	Dr. D. K. Agarwal	Co-ordinator, Executive Development Programme Committee, Additional Director of Research, KIMSDU, Karad
2	Dr. B. B. Ahuja	Member, Executive Development Programme Committee, Director, College of Engineering, Pune
3	Dr. Virendra Bhalchandra Godbole	Member, Executive Development Programme Committee, Former Faculty from Symbiosis, Pune
4	Dr. Milind Pande	Member, Executive Development Programme Committee, Director, Institute of Management and Information Technology, MIT, Kothrud, Pune
5	Dr. Wasim Kamate	Member, Executive Development Programme Committee, Sr. Lecturer, Dept. of Oral Pathology & Microbiology, School of Dental Sciences, KIMSDU, Karad
6	Dr. Abhijeet Sande	Member, Executive Development Programme Committee, Sr. Lecturer, Dept. of Oral Medicine & Radiodiagnosis, School of Dental Sciences, KIMSDU, Karad

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Karad, Dist. : Satara (Maharashtra State) Pin : 415110 Tel : 02164-241555-8 Fax: 02164-243272/242170
Website : www.kimskarad.in E-mail: registrar@kimskarad.in

7	Mr. Churchill P S Samson	Member, Executive Development Programme Committee, Free Lance Corporate Trainer, Karad

The committee shall table its report in the Academic Council meeting scheduled in the month of March 2019.

REGISTRAR

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Finance Officer
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Director of Research
Additional Director of Research
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Dean, Faculty of Dental Sciences
Dean, Faculty of Physiotherapy
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Dean, Faculty of Allied Sciences (Microbiology, Biotechnology and Krishna Institute of Pharmacy)
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Dean (Academics), Faculty of Physiotherapy
Dean (Academics), Faculty of Nursing Sciences
Dean (Academics), Faculty of Allied Sciences
All Members of the Committee

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Karad, Dist :Satara (Maharashtra State) Pin : 415539Tel : 02164-241555-8 Fax: 02164-243273/242195
Website:www.kimskarad.inE-mail: research@kimskarad.in

KIMSDU/DR/917/2020 Date: - 16/11/2020

To
The Director College of Engineering (COEP),
Pune.

Subject: Technology transfer as a joint collaborative project.

Dear Sir,

With reference to above cited subject in regard to Sterilizer which has come out as a joint Innovative projects, with its own novelty,

I have already shared a document with a technical report in the format as prescribed by Pune University except few entries which are to be filled after the mutual discussion, as I have already discussed with our Honorable Chairman sir, rest of the things can be finalized with your good self to proceed further.

As I am leaving for Nagpur on 18th November, it shall be highly appreciated if we could meet in your office at about 10:30 am.

Kindly let us know about your availability to finalize the schedule.

Wishing you a Happy Diwali.

Dr. D. K. Agrawal
Additional Research Director

Cc: Dr. JayantPawar
Dr. D. L. Sonawane

UV-SEVAK360° for Quick Surface Sterilization

1. Technology Description

UV sterilization technology is available for more than 40 years and mainly used for water treatment at household and industrial levels, however, limited attention was given for its use in sterilization in medical field. Nevertheless, its significance in hospital set-ups got highlighted in recent Covid-19 pandemic for effective inactivation of virus particles from hospital areas, utensils and portable medical equipment as quickly as possible. International Ultraviolet Association proposed that a dose of 40 $mJ \cdot cm^{-2}$ of 254 nm light can kill 99.99% of any pathogenic microorganism on surface of object within few minutes.

2. Features of UV-SEVAK360°

a) Germicidal features

- Use of 254 nm germicidal radiation which is close to peak ultraviolet light absorption of nucleic acids i.e. 265 nm.
- Use of 4 UV-C lamps (11 W each) having specific UV-C wattage of 2.6 W each and placed in precise orientation to ensure total UV radiation of 254 nm wavelength of about 10.4 W from all sides on the object to be treated.
- The dose of > 200 $mJ \cdot cm^{-2}$ of 254 nm light given, which is far enough for complete killing of pathogens when compared to recommended dose of light.
- Effective calculated time to kills pathogen for present device is 0.8 min from the distance of 0.4 meter, however, we advice minimum of 1 minute and maximum of

5 minute of exposure to the object for effective inactivation of germs (reported to kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m).

- Use of highly reflecting aluminum tape on inner surfaces of container for effective reflection of radiation in the chamber avoiding 'hiding effect'.
- Coating of racks by mixture of photocatalytic TiO_2 NPs and Ag NPs for further effective microbial inactivation of objects placed on racks.

b) Safety features

- Use of thick metallic box designed for rugged use and to avoid leakage and direct exposure of harmful UVC radiation.
- Safety switch to automatically switch off UVC lamps if the chamber box is accidently opened during operation.

c) Other features

- User friendly interface with quick buttons for time settings and display.
- Simple design for easy servicing and maintenance whenever necessary.
- Spacious volume of more than 40 liters for treating bigger medical equipment and tools.
- This sterilization box can also be used for household sterilization purposes (for items such as wallets, belts, mobiles, laptops, tablet phones, toys, packaged grocery items, may fruits and vegetables, etc), at jewelry shops, at take-away restaurants, at toy shops, etc.

Sr. No.	Objects	Approximate treatment time (min)
1.	Wallet, Belt, Mobile, Goggle, watches	1 min
2.	Laptop, Tablet phone, laptop bag, purse	2 min
3.	Jewelry items	2 min
4.	Children utensils and Toys	2 min
5.	Kitchen utensils	3-5 min
6.	Packaged grocery items, fruits and vegetables	3 min
7.	Medical equipments (Thermometer, IR thermometer, pulse-oxymeter, BP apparatus, etc)	2-3 min
8.	Surgical and dentistry tools	3 min

3. Specification Sheet of UV-SEVAK 360°

Sr. No.	Parameters	Specifications
1	UVC Tube light	Philips (Made in Poland) Tl Mini UVC Germicidal Lamp
2	Chokes	Philips EBS chokes
3	Holder	BJB (Made in Germany) UV stabilized
4	UVC wavelength	254 nm
5	Number of tubes	Four (11 W each)
6	UV-C emission	Total 10.4 Watts (from 4 tubes)
7	Dose of UV-C	~ 200 $mJ \cdot cm^{-2}$ (average expected dose for killing 99.99% microorganisms is 40 $mJ \cdot cm^{-2}$)
8	Efficiency testing and Certification	Antibacterial and antifungal testing: Microbiology Laboratory at KIMSDU, Karad. Electrical and structural testing: Department of Instrumentation and Control, CoEP, Shivajinagar, Pune.
	Sterilization time	< 1 minute for virus inactivation (as per published literature)*, 2 minutes for bacterial contaminants and 3 minutes for fungal contaminants (tested and approved by the KIMSDU, Karad)
9	Lamp usage life	approx. 9000 hrs
10	Operating voltage	AC 220-240V/ 50Hz
11	Utility space	~ 60 liters
12	Safety	Safety door switch
13	Operating type	Continuous/timer
14	Material used	Rust free Stainless Steel body with powder coating from outside and highly reflecting surface from inside.
15	Approx. Weight	~ 22 Kg
16	Box Dimensions	620 mm x 400 mm x 400 mm
17	Warranty	1 Year. Warranty is for faulty parts/components and not for physical damage during use, transport, accident, etc.

USER Manual

Part1: Ste-by-step guide to use UV Sevak 360º sanitizer box

Step 1: Switch ON the power supply. All the indicator lamps will glow. Display will show last set time or 1:00 as default time setting which is the minimum time that can be set.

Step 2: Press UP arrow key to increase the setting time. Press DOWN arrow key to decrease the setting time. Each pressing of UP and DOWN arrow key can increase or decrease the time setting by one minute.

Step 3: After setting the desired time, press ON/OFF arrow key once to switch ON the Power to the lights. You will see glowing of the indicator lamp below ON/OFF arrow key. (Note: You can also observe small light glow in a small gap between the door and the cabinet near the handle to ensure that UV lights are glowing inside the cabinet.)

Step 4: 10 seconds prior to the end of Set timing, warning buzzer will start to beep. At the end of the process, buzzer sound will stop and indicator lamp below ON/OFF arrow key will stop to glow. After this, it is safe to open the box.

Important Notes:

1. You can change (increase and decrease) the timer setting during the operation just by pressing the UP and DOWN arrow keys respectively.
2. If the door is opened during the operation, UV lights will automatically OFF and process will stop unless the door is closed again. The process will again start from the time where it was interrupted by opening the door. The process can be reset by pressing the ON/OFF arrow key once.

Part 2: Safety Instructions

DO's	DONT's
Place the object gently and close the cover carefully to avoid leakage of light.	Don't expose skin and eyes directly to direct and reflected UV-C light.
Only area exposed to UV light gets sterilized, make proper choice of rack & object size.	The object should not touch to UV light, may cause damage to lamp.
Gently press the setting buttons on control panel.	Don't operate this UV-C sterilizer empty.
Keep out of reach of children & pets.	Don't disassemble the device without removing power cord.

Research and Developed by

1. Krishna Institute of Medical Sciences “Deemed to be University” (KIMSDU), Malkapur, Karad, Maharashtra 415539.
2. Department of Instrumentation and Control, College of Engineering Pune (CoEP), Shivajinagar, Pune.

Produced and Marketed by

1. **NBE TECH**

   Head Office: NBE TECH, W. No. 5, H, No. 2417, Shegaon Road, Near Petrol Pump, Telhara, Dist Akola - 444108.

   Pune Office: Pashan Sutarwadi road, Pashan, Pune -411021, India.

   Ph: 7756065497, Website: www.nbetech.in, Email: info@nbetech.in

ISO Certification

Organization Name: Krishna Institute of Medical Sciences “Deemed to be University”
Address: Malkapur, Karad-415539, Maharashtra, India

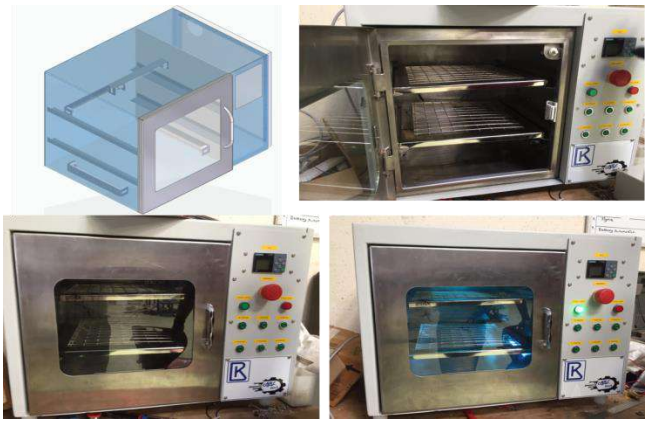
Contact Person: Dr. M. V. Ghorpade
Registrar, Krishna Institute of Medical Sciences “Deemed to be University”
Contact Number: (02164) 241555 Extension: 262
Email: registrar@kimskarad.in

Product Name: UV-SEVAK 360°

Product/ Technology Description

UV sterilization technology is available for more than 40 years and mainly used for water treatment at household and industrial levels, however, limited attention was given for its use in sterilization in medical field. Nevertheless, its significance in hospital set-ups got highlighted in recent Covid-19 pandemic for effective inactivation of virus particles from hospital areas, utensils and portable medical equipment as quickly as possible. Specifically, UV-C radiation (Wavelength range 200- 280 nm; λ_{max} 254 nm) delivered using a dose of 1 $J \cdot cm^{-2}$, to each side of N95 face mask was found to be effective in decontamination of face pieces and straps [Hamzavi et al., 2020; Narla et al., 2020]. This dose is an appropriate decontamination method to facilitate reuse of respirators for healthcare personnel when applied to certain models/materials. However, this dose may vary from equipment to equipment and material to material. Moreover, International Ultraviolet Association advised to give a dose of 40 $mJ \cdot cm^{-2}$ of 254 nm light to kill 99.99% of any pathogenic microorganism on surface of object.

1. Features of Prototype



a) Germicidal features

- Use of 254 nm germicidal radiation which is close to peak ultraviolet light absorption of nucleic acids i.e. 265 nm.
- Use of 4 UV-C lamps (11 W each) having specific UV-C wattage of 2.6 W each and placed in precise orientation to ensure total UV radiation of 254 nm wavelength of about 10.4 W from all sides on the object to be treated.
- The dose of >60 $J \cdot cm^{-2}$ of 254 nm light given, which is far enough for complete killing of pathogens when compared to recommended dose of light (According to the International Ultraviolet Association, it is generally accepted that a dose of 40 $mJ \cdot cm^{-2}$ of 254 nm light will kill at least 99.99% of "any pathogenic microorganism).
- Effective calculated time to kills pathogen for present device is 0.8 min from the distance of 0.4 meter, however, we are giving minimum of 1 minute and maximum of 5 minute of exposure to the object for effective inactivation of germs (Xenex's disinfecting robot, can kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m).
- Use of stainless steel container for effective reflection of radiation in the chamber avoiding 'hiding effect'.
- Coating of racks by mixture of photocatalytic TiO_2 NPs and Ag NPs for microbial inactivation of unexposed areas of objects placed on racks. (UV activated TiO_2 has been shown to be capable of killing a wide range of Gram-negative and Gram-positive bacteria, filamentous and unicellular fungi, algae, protozoa, mammalian

viruses and bacteriophage, moreover, the killing activity is enhanced by the presence of other antimicrobial agents such as Cu and Ag [Tatldil et al., 2011]).

b) Safety features

- Use of metallic double walled box to avoid leakage and direct exposure of harmful UVC radiation.
- Safety switch to automatically switch off UVC lamps if the chamber box is accidently opened during operation.

c) Other features

- User friendly interface with quick buttons for time settings and display
- Use of standard UVC lamp (11 W) (lamp life of approx. 9000 hrs) and choke for steady intensity even after longer life usage, 230 V (AC) current supply and response time of 100 ms.
- Use of high quality SS-304 steel (corrosion resistant and highly reflective) and powder coated MS steel (aesthetic looking and rugged) for inner and outer boxes respectively.
- Simple design for easy servicing and maintenance whenever necessary.
- Spacious volume of more than 60 liters (such big volume is not available with any supplier) for treating bigger medical equipment and tools as well as personal belongings such as laptops, mobiles, display screens, etc.
- This sterilization box can also be used for household sterilization purposes (for items such as wallets, belts, mobiles, laptops, tablet phones, packaged grocery items, may fruits and vegetables, etc), at jewellery shops, take-away restaurants, toy shops, etc.

2. Specification Sheet of UV-SEVAK 360°

Sr. No.	Parameters	Specifications
1	Lamp type	Tl Mini UVC Germicidal Lamp
2	Lamp wavelength	254 nm
3	Number of lamps	Four
4	Antimicrobial	Antibacterial and antifungal efficacy of UV sterilizer tested and

	Efficiency and device testing	authenticated in Microbiology Laboratory at KIMSDU, Karad (**Annexure I** and **II**) and Department of Instrumentation and Control, College of Engineering, Pune (**Annexure III**)
5	Lamp usage	approx. 9000 hrs
6	Operating type	Continuous/timer
7	Sterilization time	< 1 minute for virus inactivation (as per published literature)*, 2 minutes for bacterial contaminants and 3 minutes for fungal contaminants (tested and approved by the KIMSDU, Karad)
8	Operating voltage	AC 230V/ 50Hz
9	Utility space	400 X 400 X 400 mm
10	Cooling system	Air cooling
11	Safety	Safety door switch
12	Power consumption	400 Watts
13	Material used	Powder coated MS
14	UV-C emission	10.5 Watts
15	Dose of UV-C	$>60\ J \cdot cm^{-2}$ (average expected dose for killing 99.99% microorganisms is $40\ mJ \cdot cm^{-2}$)

3. Key Features of Design:

1. Optimum power lamps for effective sterilization
2. Reflective inner surface for improving efficiency
3. Safety door switch for auto cut-off for user safety
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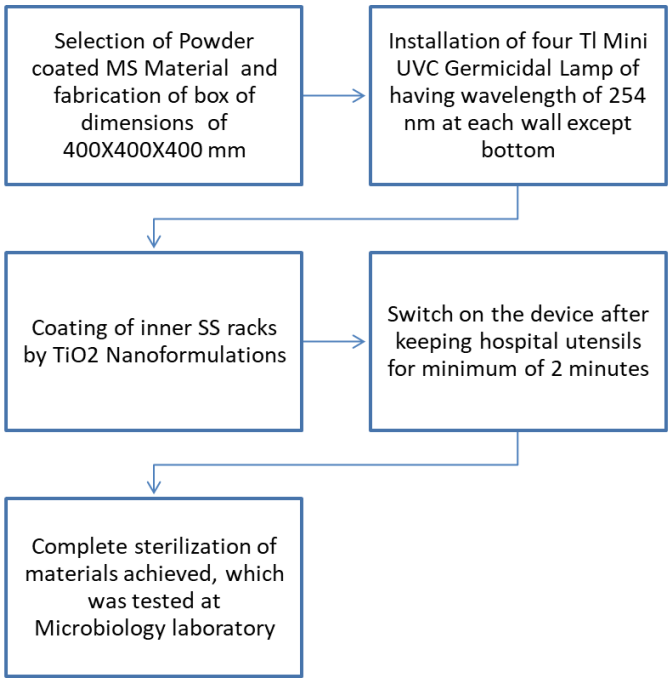
4. **Product Manufacturing Process Flow Chart**



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As UV-C light kills germs by direct exposure, it is mandatory to use system with awareness of the object to be sterilized. The exposure time can be set up from 30 seconds to 5 min for different types of objects. The less irradiance time (30 seconds to 2 min) is good for object with clean and smooth surface, whereas, the more irradiance time (3 min to 5 min) is recommended for object with rough surface as hiding places can limits its sterilization efficacy. We also recommend its use for minimum of 2 min to sterilize surfaces of hand tools and other small equipment in OPDs and mini OTs of medicine and dentistry.

7. **List of few customers:**

    1. Healthcare centers

2. Restaurants and Hotels
3. Parlors and Saloons
4. Banks, Jewelry

8. List of Products Purchased and names of few suppliers:

NBE Tech, Pune

9. Name of the few members

Dr. Jayant Pawar

Dr. D. N. Sonawane

Dr. D. K. Agarwal

Dr. Geeta Karande

Dr. Kiran Diwate

Mr. Swapnil Awachar

ISO Certification

Organization Name: Krishna Institute of Medical Sciences “Deemed to be University”
Address: Malkapur, Karad-415539, Maharashtra, India

Contact Person: Dr. M. V. Ghorpade
Registrar, Krishna Institute of Medical Sciences “Deemed to be University”
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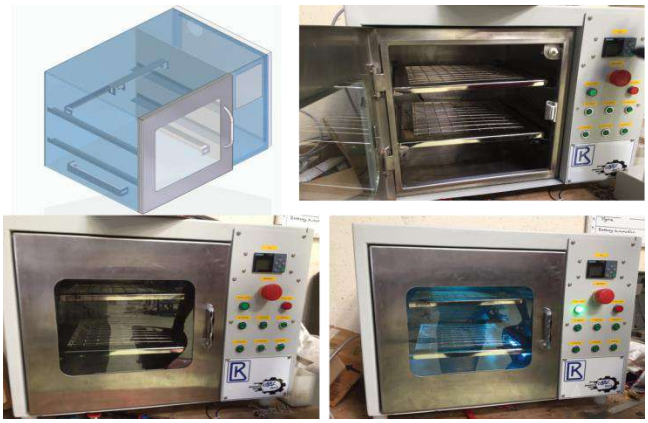

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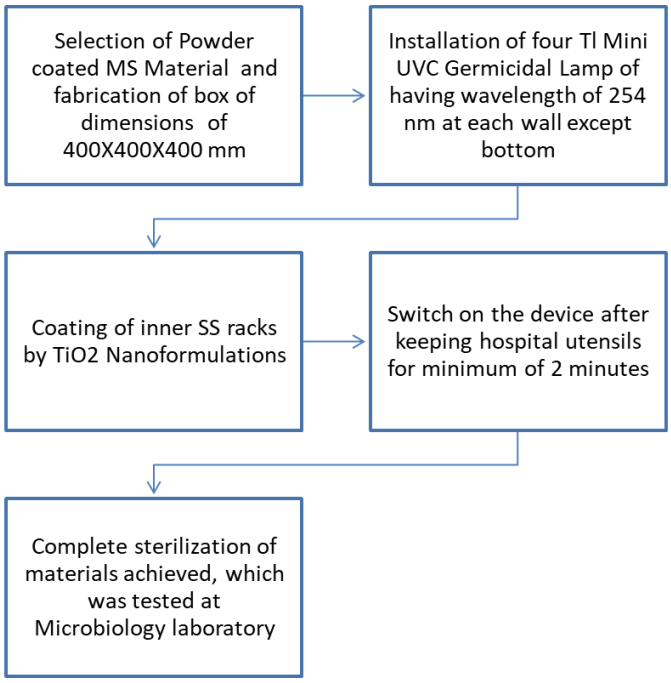

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KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
An ISO 9001:2015 Certified University
Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist : Satara (Maharashtra State) Pin : 415539 Tel : 02164-241555-8 Fax: 02164-243273/242195
Website : www.kimsuniversity.in E-mail: research@kimsuniversity.in

KIMSDU/DR/ 855/2020

Date: - 19.10.2020

To,
The Director,
College of Engg., Pune

Subject: UV sterilizer

Respected sir,
Warm Regards!
May I recall our earlier discussion along with Dr Jayant Pawar working with our Directorate of Research as a Research Associate, who has worked upon the Ultraviolet Sterilizer blended with nano technology. After the discussion with your good self, we were directed to contact Dr. Sonawane from your esteemed institute and accordingly a thorough discussion was held along with us. As a result, we could inculcate the necessary inputs for the improvement of device which was suggested by you also.
A final prototype has been manufactured again and tested in our Microbiology lab for its antibacterial and antifungal characterization and found the positive results.

Therefore, now I have advised Dr Jayant Pawar to contact Dr Sonawane for the final authentication of technology which is used after the consultation of both stake holders i.e. our University as working in the health domain and your premium institution solely dedicated to the technological development.

However, after the final authorization of technical inputs from your institution, the product is ready for technology transfer which is proposed to be done in association with both our institution on one part and NBTech on the other part which will be responsible for manufacturing and marketing of the product upon, the terms and conditions as applicable and shall be incorporated in the technology transfer document with detailed project report and profit sharing between the all three parties if any.

Kindly do the needful to enable us to proceed further.

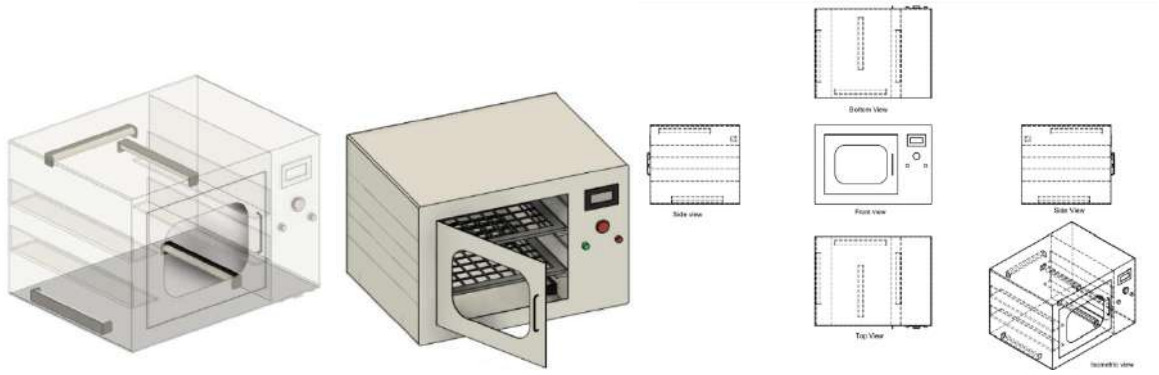
Dr. D. K. Agarwal
Add. Director of Research,
KIMSDU, Karad

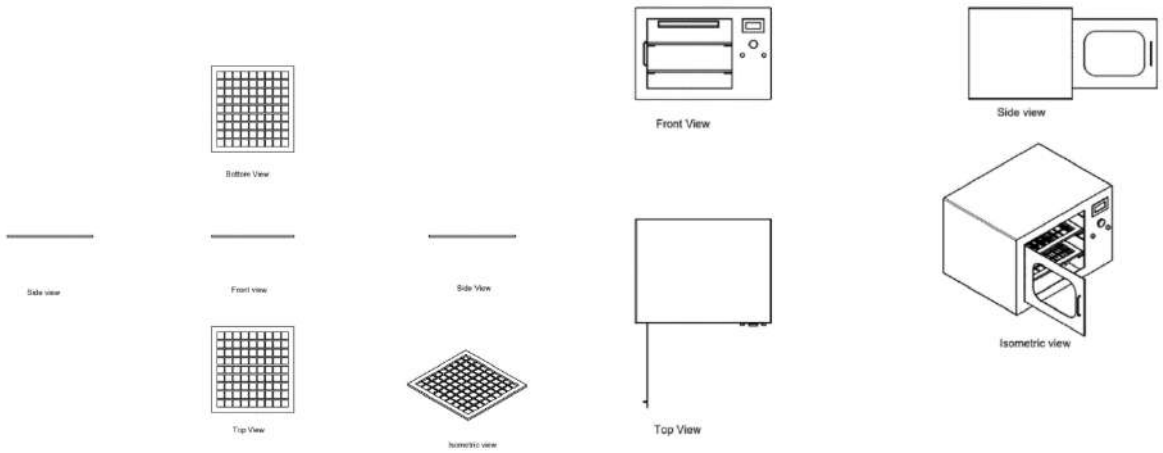
UV-SEVAK 360°for Quick Surface Sterilization of Hospital Utensils

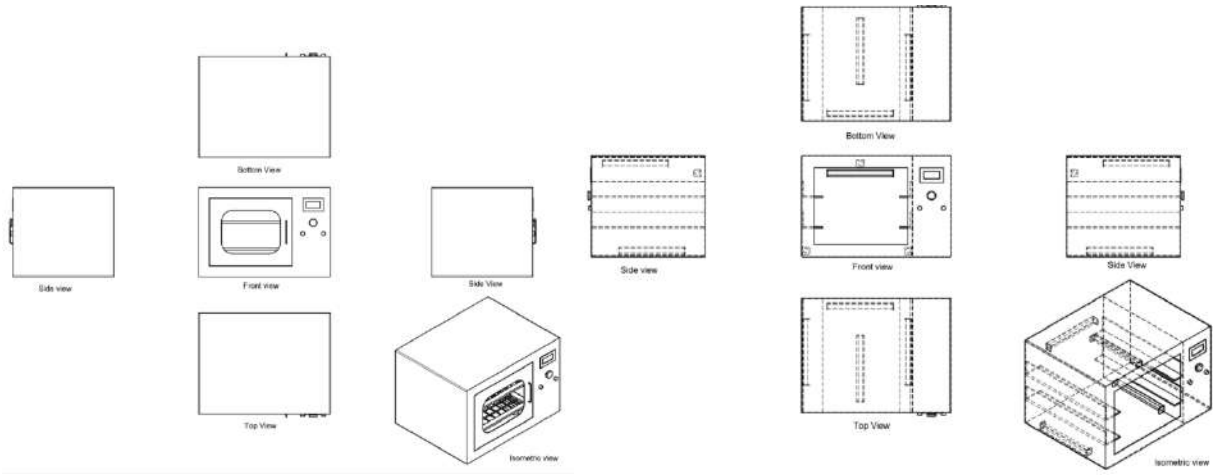
Inventor: Dr. Jayant Pawar, Dr. D. N. Sonawane and Dr. G. S. Karande

Institute: Directorate of Research, KIAS, COEP and KIMS

Patent No.: Application No. 336097-001 (Disinfecting and sterilizing chamber) and Application No. 336098-001 (Disinfecting and sterilizing tray)







Designs of UV-SEVAK 360°

Rationale

The hospital-acquired infections, also known as nosocomial infections can be acquired within a hospital environment. The contact surfaces mainly equipment and furniture of hospitals are the main culprits in transmission of nosocomial pathogens such as multidrug-resistant pathogens including methicillin-resistant Staphylococcus aureus (MRSA), extended-spectrum beta-lactamase-producing bacteria (ESBL) e.g., Enterobacteriaceae such as Klebsiella, Escherichia coli, vancomycin-resistant enterococci (VRE) e.g., E. faecalis, E. faecium, etc. The spread of these pathogens usually occurs through hand tools of healthcare practitioners, high-touch sites inside patient rooms, hospital utensils contaminated by droplets from infected patients and interventional procedures. Air-borne transmission from infected patients (influenza, H1N1 and SARS COV-2, etc) is also a source of infection of such utensils and equipment.

Contemporary Techniques and Drawbacks:

At present such pathogens are neutralized by conventional sterilization (e.g. autoclaving, dry heat sterilization etc.) and chemical sanitization methods (e.g., ethanol, phenolic compounds, chlorites etc.). However, these methods are time consuming practices and may not be feasible for electronic equipment like IR thermometer, pulse oximeter, stethoscope, ECG electrodes and other hand tools used in OPDs, masks, stationary and dental equipment during surgery etc. Moreover, chemical treatment is not environmentally friendly, may damage electronic equipment and develop resistance in pathogens.

Innovation

The use of germicidal UVC lamps for disinfection at the surgical site as well as sterilizing medical equipment in open environment is not preferred owing to UV radiation being both carcinogenic

and cataractogenic. Therefore, the inventors developed the UVC light-based sterilization chamber contains photocatalytic nanomaterial coated trays which is safe to humans while killing healthcare associated pathogens from surfaces of hospital utensils and portable medical equipment.

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a) Germicidal features

- Use of 254 nm germicidal radiation which is close to peak ultraviolet light absorption of nucleic acids i.e., 265 nm.
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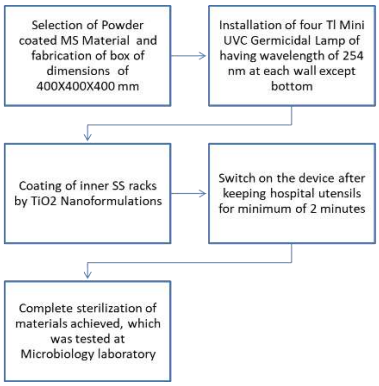
4. Product Manufacturing Process Flow Chart



Technology Report

Title of Technology: Design and Development of UV-C Chamber for Quick Surface Sterilization of Hospital Utensils/portable equipment for Inactivation of SARS-CoV-2 and other Nosocomial Pathogens

Running Title: UV-SEVAK 360° for Quick Surface Sterilization of Hospital Utensils

Researched and Developed by

1. Krishna Institute of Medical Sciences "Deemed to be University" (KIMSDU), Malkapur, Karad, Maharashtra 415539.
2. Department of Instrumentation, College of Engineering, Pune

Document Type	**Thematic Area**	**Research Division**
Technology Report	Biomedical Instrumentation for Disease Prevention	Directorate of Research and Allied Sciences in association with Department of Instrumentation and Control, COEP
Prepared by Dr. Jayant Pawar KIMSDU Email: jayantpawar26@gmail.com Mob: 8600867813	**Checked by** Dr. D. N. Sonawane Department of Instrumentation and Control, COEP Email: dns.instru@coep.ac.in Mob: 9822888944	**Authenticated by** Dr. G. S. Karande HoD Department of Microbiology, KIMSDU, Karad Email: hodmicrobiology@kimskarad.in
Research Team 1. Dr. Jayant Pawar, Directorate of Research, Krishna Institute of Medical Sciences "Deemed to be University", Karad 2. Dr. D. N. Sonawane, Associate Professor and HoD, Department of Instrumentation and Control, COEP 3. Mrs. Neha Sawant, NBE Tech, Pune		

Detail Project Report

1. Background of the Innovation

The hospital-acquired infections, also known as nosocomial infections can be acquired within a hospital environment. The contact surfaces mainly equipment and furniture of hospitals are the main culprits in transmission of nosocomial pathogens such as multidrug-resistant pathogens including methicillin-resistant *Staphylococcus aureus* (MRSA), extended-spectrum beta-lactamase-producing bacteria (ESBL) e.g., Enterobacteriaceae such as *Klebsiella, Escherichia coli*, vancomycin-resistant enterococci (VRE) e.g., *E. faecalis*, *E. faecium*, etc [Drees et al., 2014]. The spread of these pathogens usually occurs through hand tools of healthcare practitioners, high-touch sites inside patient rooms, hospital utensils contaminated by droplets from infected patients and interventional procedures. The most common sites of infections are the surgical wounds, bloodstream and urinary tract. Air-borne transmission from infected patients (influenza, H1N1 and SARS COV-2, etc) is also a source of infection of such utensils and equipment.

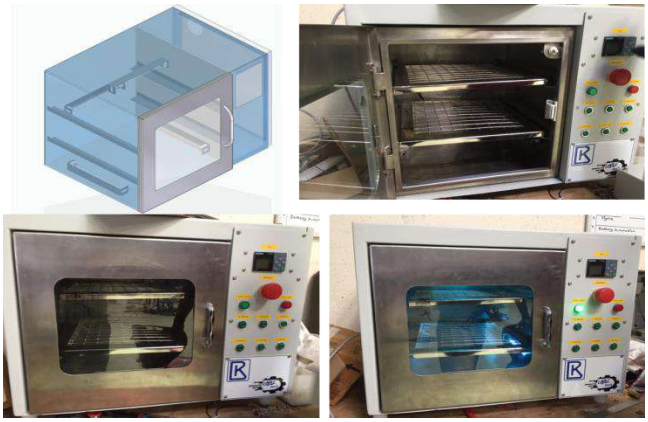
At present such pathogens are neutralized by conventional sterilization (e.g. autoclaving, dry heat sterilization etc.) and chemical sanitization methods (e.g., ethanol, phenolic compounds, chlorites etc.). However, these methods are time consuming practices and may not be feasible for electronic equipment like IR thermometer, pulse oximeter, stethoscope, ECG electrodes and other hand tools used in OPDs, masks, stationary and dental equipment during surgery etc. Moreover, chemical treatment is not environmental friendly, may damage electronic equipment and develop resistance in pathogens. Several recent studies have demonstrated that an automated ultraviolet-C (UV-C) device may be effective as an adjunctive method for disinfection of healthcare associated pathogens [Nerandzic et al., 2012]. However, the use of germicidal UVC lamps for disinfection at the surgical site as well as sterilizing medical equipment in open environment is not preferred owing to UV radiation being both carcinogenic [Granstein et al., 2004] and cataractogenic [Wegener, 1995]. Therefore, there is a need to carefully develop the UVC light based sterilization chamber which is safe to humans while killing healthcare associated pathogens from surfaces of hospital utensils and portable medical equipment. Herein, we propose to design and develop a metallic double walled UV-C chamber for quick surface sterilization of hospital utensils and portable medical equipment for inactivation of SARS-CoV-2 and other nosocomial pathogens, so that utensils can be reuse again in few minutes. However, CDC and NSF International reported

that the effectiveness of UV light for surface sterilization is dependent on factors like intensity, distance and exposure time [Dustin Grove, September 14, 2020]. For instance, Xenex's disinfecting robot, called LightStrike, can kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m. According to the International Ultraviolet Association, it is generally accepted that a dose of 40 mJ·cm−2 of 254 nm light will kill at least 99.99% of "any pathogenic microorganism [Mackenzie, D., 2020].

2. Detailed Technology Description Proposed Work in the Light of SARS-CoV-2

UV sterilization technology is available for more than 40 years and mainly used for water treatment at household and industrial levels, however, limited attention was given for its use in sterilization in medical field. Nevertheless, its significance in hospital set-ups got highlighted in recent Covid-19 pandemic for effective inactivation of virus particles from hospital areas, utensils and portable medical equipment as quickly as possible. Specifically, UV-C radiation (Wavelength range 200-280 nm; λ_{max} 254 nm) delivered using a dose of 1 J·cm^{-2}, to each side of N95 face mask was found to be effective in decontamination of face pieces and straps [Hamzavi et al., 2020; Narla et al., 2020]. This dose is an appropriate decontamination method to facilitate reuse of respirators for healthcare personnel when applied to certain models/materials. However, this dose may vary from equipment to equipment and material to material. Moreover, International Ultraviolet Association advised to give a dose of 40 mJ·cm^{-2} of 254 nm light to kill 99.99% of any pathogenic microorganism on surface of object.

3. Features of Prototype



a) Germicidal features

- Use of 254 nm germicidal radiation which is close to peak ultraviolet light absorption of nucleic acids i.e. 265 nm.
- Use of 4 UV-C lamps (11 W each) having specific UV-C wattage of 2.6 W each and placed in precise orientation to ensure total UV radiation of 254 nm wavelength of about 10.4 W from all sides on the object to be treated.
- The dose of >60 $J \cdot cm^{-2}$ of 254 nm light given, which is far enough for complete killing of pathogens when compared to recommended dose of light (According to the International Ultraviolet Association, it is generally accepted that a dose of 40 $mJ \cdot cm^{-2}$ of 254 nm light will kill at least 99.99% of "any pathogenic microorganism).
- Effective calculated time to kills pathogen for present device is 0.8 min from the distance of 0.4 meter, however, we are giving minimum of 1 minute and maximum of 5 minute of exposure to the object for effective inactivation of germs (Xenex's disinfecting robot, can kill 99.99% of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) in 2 min at a distance of 1 m).
- Use of stainless steel container for effective reflection of radiation in the chamber avoiding 'hiding effect'.
- Coating of racks by mixture of photocatalytic TiO_2 NPs and Ag NPs for microbial inactivation of unexposed areas of objects placed on racks. (UV activated TiO_2 has been shown to be capable of killing a wide range of Gram-negative and Gram-positive bacteria, filamentous and unicellular fungi, algae, protozoa, mammalian viruses and bacteriophage, moreover, the killing activity is enhanced by the presence of other antimicrobial agents such as Cu and Ag [Tatldil et al., 2011]).

b) Safety features

- Use of metallic double walled box to avoid leakage and direct exposure of harmful UVC radiation.
- Safety switch to automatically switch off UVC lamps if the chamber box is accidently opened during operation.

c) Other features

- User friendly interface with quick buttons for time settings and display

- Use of standard UVC lamp (11 W) (lamp life of approx. 9000 hrs) and choke for steady intensity even after longer life usage, 230 V (AC) current supply and response time of 100 ms.
- Use of high quality SS-304 steel (corrosion resistant and highly reflective) and powder coated MS steel (aesthetic looking and rugged) for inner and outer boxes respectively.
- Simple design for easy servicing and maintenance whenever necessary.
- Spacious volume of more than 60 liters (such big volume is not available with any supplier) for treating bigger medical equipment and tools as well as personal belongings such as laptops, mobiles, display screens, etc.
- This sterilization box can also be used for household sterilization purposes (for items such as wallets, belts, mobiles, laptops, tablet phones, packaged grocery items, may fruits and vegetables, etc), at jewellery shops, take-away restaurants, toy shops, etc.

4. Specification Sheet of UV-SEVAK 360°

Sr. No.	**Parameters**	**Specifications**
1	Lamp type	Tl Mini UVC Germicidal Lamp
2	Lamp wavelength	254 nm
3	Number of lamps	Four
4	Efficiency testing	Antibacterial and antifungal efficacy of UV sterilizer tested and authenticated in Microbiology Laboratory at KIMSDU, Karad
5	Lamp usage	approx. 9000 hrs
6	Operating type	Continuous/timer
7	Sterilization time	< 1 minute for virus inactivation (as per published literature)*, 2 minutes for bacterial contaminants and 3 minutes for fungal contaminants (tested and approved by the KIMSDU, Karad)
8	Operating voltage	AC 230V/ 50Hz
9	Utility space	400 X 400 X 400 mm
10	Cooling system	Air cooling
11	Safety	Safety door switch

12	Power consumption	400 Watts
13	Material used	Powder coated MS
14	UV-C emission	10.5 Watts
15	Dose of UV-C	>60 $J \cdot cm^{-2}$ (average expected dose for killing 99.99% microorganisms is 40 $mJ \cdot cm^{-2}$)

5. **Key Features of Design:**
    1. Optimum power lamps for effective sterilization
    2. Reflective inner surface for improving efficiency
    3. Safety door switch for auto cut-off for user safety
    4. Safety plates for lamp protection
    5. Compact design with large utility space with nanomaterial coated racks
    6. Flexible timer option
    7. Four UV-C tubes place at specific angles for 360° illumination around the object
6. **Verifications of results:**

The effectiveness of developed device for its germicidal efficacy was tested at recognized Microbiology Laboratory at KIMSDU.

7. **Guideline for Use of Device:**

As UV-C light kills germs by direct exposure, it is mandatory to use system with awareness of the object to be sterilized. The exposure time can be set up from 30 seconds to 5 min for different types of objects. The less irradiance time (30 seconds to 2 min) is good for object with clean and smooth surface, whereas, the more irradiance time (3 min to 5 min) is recommended for object with rough surface as hiding places can limits its sterilization efficacy. We also recommend its use for minimum of 2 min to sterilize surfaces of hand tools and other small equipment in OPDs and mini OTs of medicine and dentistry.

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Document Type	**Thematic Area**	**Research Division**
Innovation Sheet	Biomedical Instrumentation for Disease Prevention	Directorate of Research, KIMSDU, Karad and Department of Instrumentation, COEP, Pune
Developed by Dr. Jayant Pawar KIMSDU Email: jayantpawar26@gmail.com Mob: 8600867813 Dr. Manish Shinde Email: ashman555@gmail.com		**Authenticated by** Dr. D. N. Sonawane COEP Email: dns.instru@coep.ac.in Mob: 9822888944 Dr. G. S. Karande HoD Department of Microbiology, KIMSDU, Karad Email: hodmicrobiology@kimskarad.in
Research Team 1. Dr. Jayant Pawar, KIMSDU, Karad 2. Dr. D. N. Sonawane, COEP, Pune 3. Dr. Manish Shinde, C-MET, Pune 4. Dr. G. S. Karande, KIMSDU, Karad		

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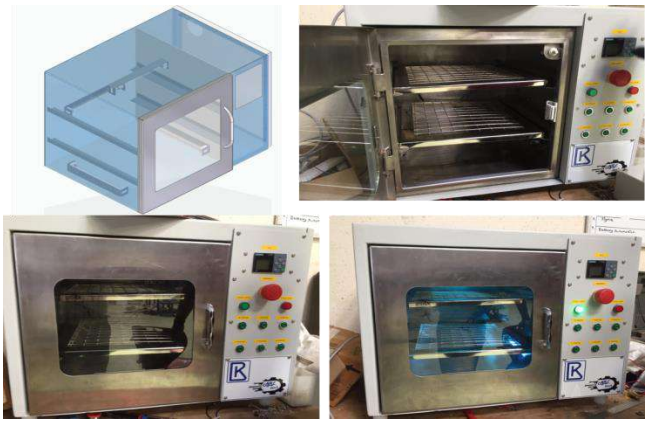

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    7. Four UV-C tubes place at specific angles for 360° illumination around the object
6. **Verifications of results:**

The effectiveness of developed device for its germicidal efficacy was tested at recognized Microbiology Laboratory at KIMSDU. The detail reports are attached in **annexure I and II**.

7. **Intellectual property strategy**

The proposed device is developed with innovative add-on like 360° irradiation to the object; photocatalytic nanomaterial coated inner racks to enhance germicidal property and high UV dose exposure to neutralize pathogens in less than 2 minutes of time. In this context, the present device is intended to protect by design patent.

8. Guideline for Use of Device:

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9. Possible buyers:

The present device has wide scope in the medical domain, domestic practices, service industries and manufacturing sector.

10. Cost (Development cost):

The cost of development of single unit (60 liters) will come around Rs. 28000/- which includes fabrication, material, electronics and packaging.

11. Price (Selling Price):

The selling price of single unit will be around Rs. 35000/- which includes device, material, user manual, one year service warranty and packaging.

Research Krishna Institute of Medical Sciences University <research@kimskarad.in>

Provisional Sanction Letter of Collaborative Research Project between KIMSDU and NARI

3 messages

Jayant Pawar <jayantpawar26@gmail.com> Wed, Jan 20, 2021 at 5:46 PM
To: "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, gskarande68@gmail.com
Cc: "Dr.Smita Kulkarni" <skulkarni@nariindia.org>, Arun Risbud <arunrrisbud@gmail.com>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Dr. Mukherjee and Dr. Karande,
I am very pleased to inform you that the budget has been sanctioned under the extra mural fund received by the KIMSDU for our project. PFA provisional sanction letter for your perusal. I will discuss with the research and finance department of our university for fund allocations to both the institutes for carrying out the first phase of research. We also need to discuss the recruitment of research staff on the project at earliest. Please let me know the suitable time for telephonic discussion for initiating the further plan of action.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad

Provsional Sanction Letter_KIMSDU & NARI.pdf
2604K

Arun Risbud <arunrrisbud@gmail.com> Wed, Feb 10, 2021 at 7:20 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, Geeta Karande <gskarande68@gmail.com>, "Dr.Smita Kulkarni" <skulkarni@nariindia.org>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Drs Jayant and Anupam
I had a telephonic talk with Dr Samiran Panda this evening. I briefed him about the status of the KIMSDU- NARI collaborative study that you people have planned. I told that the study could now be initiated and his concurrence is required for the same. He agreed and hence I suggest you to proceed as planned.

Thanks
Arun Risbud.
[Quoted text hidden]

Jayant Pawar <jayantpawar26@gmail.com> Thu, Feb 11, 2021 at 2:23 PM
To: Arun Risbud <arunrrisbud@gmail.com>
Cc: "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, "Dr.Smita Kulkarni" <skulkarni@nariindia.org>, Geeta Karande <gskarande68@gmail.com>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir,
As per the discussed plan we will soon start the phase-I of the study.

Thank you sir
[Quoted text hidden]

New project proposal

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SECTION-A (GENERAL INFORMATION)

1. (a) Title of the Research Project : (IN BLOCK LETTERS)

DESIGN, DEVELOPMENT AND EVALUATION OF HOSPITAL SEWAGE TREATMENT STRATEGY WITH SPECIAL REFERENCE TO SARS-CoV-2

(b) What is new in this topic that others have not done and not already published in the Journals or textbooks?

The present proposal focuses on wastewater surveillance for SARS-CoV2 virus, bacterial, fungal pathogens and subsequent strategies for their obliteration. As the contemporary methods and techniques used for treatment of hospital sewage have either not been sufficient enough to treat all the pathogens or have not been found environmentally intolerable?, hence, the environmental friendly physical treatment methods needs to be explored for better results. The proposed methodology for sewage treatment for bacteria eradication and virus inactivation will be executed in laboratory scale equipment, which may include use of electric field; high-pressure processing, electromagnetic as well as ultrasound irradiation at laboratory scale. The overall outcome of the proposed project shall provide the optimized methods for screening and quantification of SARS-CoV-2 and other pathogens in wastewater, design and development of underground sewage separation tank and development of holding tank with electric field and ultra-sonic probe for sterilization of sewage. To date, there have been no published studies demonstrating the use of environmental surveillance to identify SARS-CoV-2 in animal populations (WHO. 2020). Therefore, the risk of disease transmission associated with hospital sewage contaminated with fecal matter, urine, blood and genital discharge containing causative agents deserves more attention.

2. Name and Designation of

a) Principle investigator : _____

Krishna Institute of Medical Sciences “Deemed to be University”, Karad

b) Co- investigators : _____

ICMR-NARI, Pune

3. Name of the Sponsor :

Krishna Institute of Medical Sciences “Deemed to be University”, Karad

4. Duration of Research/Dissertation Project: 12 Months

5. Date of submission of the project to the

Department of Research for protocol review committee

6. Date of submission of the modified project

(Modified as per suggestions made by the protocol review committee to the Department of Research for IEC review)

7. Signature (with date) of :

a) Applicant staff : _____

b) Head of the department : _____

c) Dean of the Faculty : _____

8. Signatures of the other departmental heads where part of the research study work is planned (mention, not applicable if so)

d) Head of the department

Microbiology (KIMSDU) : _____

Virology (NARI) : _____

9. IEC review

Remarks of the IEC : Approved / Not Approved

10. Signature of the IEC Member Secretary : _____

Date

11. Signature of IEC Chairman : _____

Date:

S E C T I O N - B

DETAILS OF THE RESEARCH PROJECT

DESIGN, DEVELOPMENT AND EVALUATION OF HOSPITAL SEWAGE TREATMENT STRATEGY WITH SPECIAL REFERENCE TO SARS-CoV-2

1. Study rationale including novelty and application of the work in the context of National priorities of Medical Research

Generally, the hospital wastewater contains physical, chemical and biological waste generated from all the divisions of the hospitals which include casualty wards, COVID-19 and other general wards, OTs, drug treatment facilities, ICU, diagnostic laboratories, radiology, cafeteria and washing facilities, etc. The hospital sewage consists of various potentially hazardous components like microbial pathogens (bacteria, fungi and viruses), pharma residues, radioactive waste and hazardous chemicals which cause many adverse impacts on environment and human health by polluting water sources. Among all illnesses, viral illness coupled with low infectious doses, allows even a small amount of contamination to cause serious catastrophic conditions. Increased chances of hospital sewage mediated infections have encouraged research into development of efficient alternative technologies for treatment of hospital sewage. However, identification of source, nature and load of hospital sewage contaminants is the first step towards development of effective strategies for treatment of hospital sewage.

Currently, the COVID-19 pandemic has put tremendous pressure on healthcare service providers particularly for diagnosis, treatment and prevention of the infections. In this regard, the potential problem of contaminated hospital sewage not only limited to SARS-CoV-2 virus, but all the hospital borne disease causing agents has attracted great attention of the researchers worldwide, as such contaminated sewage may be responsible for mass infection of the population. Therefore, proper treatment of the hospital sewage especially generated from COVID-19 wards and other healthcare centre is a prerequisite to get rid of disease causing agents before it is released into the main sewage stream.

Conventional treatment process for hospital sewage includes pre-treatment (to remove large solid debris), primary treatment (physical separation of solids), secondary treatment (biological treatment to remove organic matter) and tertiary treatment (chemical disinfection treatment to remove microorganisms). Among all treatment processes, tertiary treatment stage is very crucial for hospital sewage management as it disinfects all the pathogens before its disposal or reuse. In this regards, several disinfection agents are being used based on source, pH, composition and clarity of sewage. Currently, it is accomplished by using physical or chemical disinfectants like chlorine, sodium hypochlorite, UV light, ozone etc. However, these are found to be insufficient enough to kill all the pathogens or are environmentally intolerable. Additionally chemicals like sodium hypochlorite, methanol and hydrogen peroxide lead to severe side effects in people when used in excess (Yari, S., 2020). Therefore, there is a need to explore environmental friendly physical treatment methods for the treatment of hospital sewage in order to eradicate disease causing pathogenic agents.

At present, the sewage generated by KCT hospital is more than 4 lakhs liter per day, out of which the COVID-19 wards generates almost 30 %. Wastewater surveillance for SARS-CoV-2 is a need of the day for understanding the association between faecal excretion of virus across all infection stages, period of infectiousness and community spread of disease in particular area. Followed by detection and quantification of viral load through establishment of a cell culture model to evaluate virus viability from hospital sewage samples, it is mandatory to develop effective viral eradication strategies before it reaches to natural water streams. In wastewater surveillance for SARS-CoV-2, the optimum site selection, sample collection and shipment, initial processing, concentration and extraction methods, highly sensitive molecular detection methods without much false-positive and false-negative outcomes has to be developed. Overall, the impact of SARS-CoV-2 on the community and sanitation worker to prevent and control the COVID-19 has supreme mandate.

2. Research Objectives:

We propose to design and develop underground sewage treatment tank with special provision of electric field and ultra-sonic probe for continuous inactivation of hospital sewage generated from COVID-19 and other general wards.

Objective 1: Environmental surveillance and detection of viral loads of SARS-CoV-2 by testing of hospital sewage/wastewater.

Objective 2: Wastewater screening, identification and quantification for hospital associated bacterial and fungal pathogens.

Objective 3: Testing and optimization of electric field exposure alone or in combination with ultra-sonication treatment for effective inactivation of disease causing agents from wastewater.

Objective 4: Development of underground sewage tank (weight unit) for separation of solid debris and treatment tank with provision of ultra-sonic probe and electric discharge for the neutralization of pathogens in wastewater.

3. Summary of the proposed research

The present proposal focused on wastewater surveillance for SARS-CoV2 virus and subsequent strategies for their obliteration. As the contemporary methods and techniques used for treatment of hospital sewage have either not been sufficient enough to treat all the pathogens or have not been found environmentally tolerable, there is a need to explore environmental friendly physical treatment methods for better results. Initially, the hospital (COVID-19 ward) sewage analysis would be carried out for determining total live viral and other microbial load to plan the design and development of broad-spectrum microbial inactivation sewage treatment tank with all the provisions for effective eradication of pathogens. The proposed methodology for sewage treatment for bacteria eradication and virus inactivation will be executed in small laboratory scale equipment, which may include use of electric field; high-pressure processing, electromagnetic as well as ultrasound irradiation at laboratory scale. The sewage samples will be tested before and after treatment to check the feasibility and effectiveness of methods on the basis of quantitative estimation of pathogens, exposure time, treatment cost and requirement of skilled man power to handle the plant. Followed by optimization of physical treatment methods for sewage, the treatment tanks will be developed underground in two different units, the first to separate the sludge and second to treat the effluent. The overall outcome of the proposed project shall provide the optimized methods for screening and quantification of SARS-CoV-2 and other pathogens in wastewater, design and development of underground sewage separation tank and development of holding tank with electric field and ultra-sonic probe for sterilization of

sewage. The entire system will be supported through central sewage facility, dedicated electric power provision, automated valves for holding tanks etc.

4. Present knowledge and relevant bibliography

Wastewater surveillance for evidence of pathogens has a long history of use in public health monitoring process, particularly for poliovirus and antimicrobial resistance bacterial cultures [(WHO (2003), Guidelines for environmental surveillance of poliovirus circulation; WHO (2017) Global Antimicrobial Resistance Surveillance System (GLASS)]. For instance, the occurrence of fecal carriage of ESBL-producing *Enterobacteriaceae* has been found to be much higher in Southeast Asia compared to remaining regions of world (Thamlikitkul et al., 2019). The bacterial cultures like *Escherichia coli, Klebsiella pneumoniae, Acinetobacter spp., Staphylococcus aureus, Streptococcus pneumoniae, Salmonella spp., Shigella spp., Neisseria gonorrhoeae* etc. found in blood, urine, stool, genital swabs kind of specimens collected from patients (Tornimbene et al., 2018), which are further disposed into the sewage and killing of these bacteria is considered the most important task before they are released into main stream of water.

In the context of the ongoing COVID-19 pandemic, researchers found not only SARS-CoV-2 RNA in stool specimens of COVID-19 patients (Chen et al., 2020; Wang et al., 2020) but also the viral nucleocapsid protein was found in gastric, duodenal and rectal epithelia (Zhou et al., 2020; Zang et al., 2020; Lamers et al., 2020). Though the spread of COVID-19 is mainly via respiratory droplets and direct contact with infected individuals (Li et al., 2020; Zhou et al., 2020), the infection might occur in the gastrointestinal tract which may result in transmission of SARS-CoV-2 by the fecal-oral route, as viral host receptor ACE2 reported to be positivity expressed in gastrointestinal epithelial cells (Xiao et al., 2020; Wang et al., 2020). Detection of non-infective RNA fragments of SARS-CoV-2 in untreated wastewater and/or sludge has been reported in Murcia, Spain (Randazzo et al., 2020); Brisbane, Australia (Ahmed et al., 2020); multiple locations in the Netherlands (Medema et al., 2020); and eastern Massachusetts (Wu et al., 2020). Moreover, researchers from the France and United States of America demonstrated a correlation between wastewater SARS-CoV-2 RNA concentrations and COVID-19 clinical case reports and further suggested the RNA concentrations could provide a 4- to 7-day advanced notice ahead of COVID-19

confirmed infection data (Wu et al., 2020; Wurtzer et al., 2020). To date, there have been no published studies demonstrating the use of environmental surveillance to identify SARS-CoV-2 in animal populations (WHO. 2020). Therefore, the risk of disease transmission associated with hospital sewage contaminated with fecal matter, urine, blood and genital discharge containing causative agents deserves more attention.

Conventionally, the hospital sewage has been treated by pre-treatment (to remove large solid debris), primary treatment (physical separation of solids), secondary treatment (biological treatment to remove organic matter) and tertiary treatment (chemical disinfection treatment to remove pathogenic microorganisms). In this process, several disinfection agents being used are based on source, pH, composition and clarity of sewage. Currently, it is accomplished by using physical or chemical disinfectants like chlorine, sodium hypochlorite, UV light, ozone etc. However, chemicals like sodium hypochlorite, methanol and hydrogen peroxide lead to severe side effects in people when used in excess (Yari, S., 2020). Therefore, for the treatment of hospital sewage in order to eradicate disease causing pathogenic agents environmental friendly physical treatment methods needs to be explored.

Physical techniques used for wastewater treatment to inactivate microbes show promising potentials with respect to its safety, compatibility and simplicity, environmentally friendliness, low operating cost and not proven harmful effects. It includes ultrasound, thermal, dynamic, and isostatic high pressure and electromagnetic technologies, such as pulsed electric fields, UV light, cold atmospheric pressure plasma, and high- or low-energy electron beam may provide a possible sewage treatment option to kill diverse pathogens (Reineke et al., 2020).

Specifically for the proposed study, ultrasound and electromagnetic treatment modules alone or in combination will be explored for the inactivation of the pathogens present in hospital sewage. The ultrasound treatment relies on a group of factors such as, cavitation threshold includes intensity and amplitude, frequency, temperature, and external pressure; proprieties of the media includes viscosity, volume, pH, and the initial number of bacteria; the properties of the microbes include gram-staining status, size and shape, bacterial capsules, bacteria species, spores, and growth phases etc. affect the inactivation of bacteria

and other microbes (Gao et al., 2016). Drakopoulou et al., (2009) reported the ultrasound-induced inactivation of gram-negative and gram-positive bacteria in secondary treated municipal wastewater. Another group of researchers claimed that the low-frequency and high-intensity ultrasonic treatment of sewage sludge disrupts the flocs and lyses the bacterial cells which results in a substantial reduction in the volume of the flocs and a release of both inter and intracellular materials (Gonze et al., 2003). The low amperage electric current (DC) induces the localized production of H_2O_2 and chlorine which can inhibit the growth of microorganisms (Liu et al., 1997) and may offer a useful method for eradicating pathogens from sewage. Sale & Hamilton (1967) demonstrated the lethal effect of high pulsed electric fields (up to 25 kV/cm) on a number of species of vegetative bacteria and yeasts. The mentioned physical treatment has been used for sterilization of food and water, but very limited for the sewage treatment.

5. Detail research plan :

1. Wastewater Surveillance for detection and quantification of SARS-CoV-2 virus and other pathogens.

1.1. Sample collection from all the COVID-19 wards, sludge separation and electrostatic filtration, processing and transport in cold chain.

1.2. Detection and quantification of SARS-CoV-2 virus particles in sewage samples

1.2.1. *Sample collection*: 250 ml of wastewater samples along with the blank/control samples will be collected in sterile bottles in duplicate and will be transferred to the laboratory maintaining the cold chain.

1.2.2. *Sample filtration*: The wastewater samples will be initially centrifuged at 4500×g for 30 min followed by filtration of supernatant using 0.22 μ filter paper.

1.2.3. *Sample concentration*: The samples will be concentrated using either 96 well filter plate and/or poly ethylene glycol (PEG) method. The concentrated pellet will be resuspended in RNase free water for RNA isolation.

1.2.4. *RNA Isolation*: Viral RNA will be isolated using Qiagen viral RNA mini kit as per manufacturer's instruction.

1.2.5. *qPCR testing for SARS-CoV-2 detection:* Detection of SARS-CoV-2 will be primarily done using TaqPathTM Covid-19 RT-PCR Kit (Applied Biosystems) following manufacturer's instruction.

1.2.6. *SARS-CoV-2 viral load detection:* SARS-CoV-2 viral RNA will be detected from purified and concentrated wastewater samples using a magnetic microparticle-based protocol and reagents supplied by the Abbott mSample Preparation SystemDNA Kit. Testing of RNA for detection of SARS-CoV-2 target genes (RdRp and N genes) and internal control gene as per the protocol and amplification reagents will be done by Abbott RealTime SARS-CoV-2 Amplification Reagent Kit.

1.3. Enumeration and quantification of bacterial and fungal cells in sewage samples

1.3.1. The samples from Covid-19 wards will be collected, filtered and stored in the sterile vial.

1.3.2. To obtain bacterial and fungal cultures from collected samples by spread inoculation on to the nutrient media.

1.3.3. Culture purification, enrichment and biochemical characterizations will be performed to understand the type and load of particular bacterial and fungal culture.

2. Strategy of the Sewage Treatment:

2.1. Treatment of samples by electric field and ultra-sonic irradiation alone or in combination.

2.2. Optimization of effective treatment conditions like electric current, voltage, ultrasonic frequency and time of exposure.

2.3. Testing of treated sample for qualitative and quantitative determination of bacterial and viral load.

2.4. Design and development of underground sewage separator (weight unit), holding tank and treatment tank with provision of electric fields and ultrasonic probes to upgrade the existing sewage treatment plant.

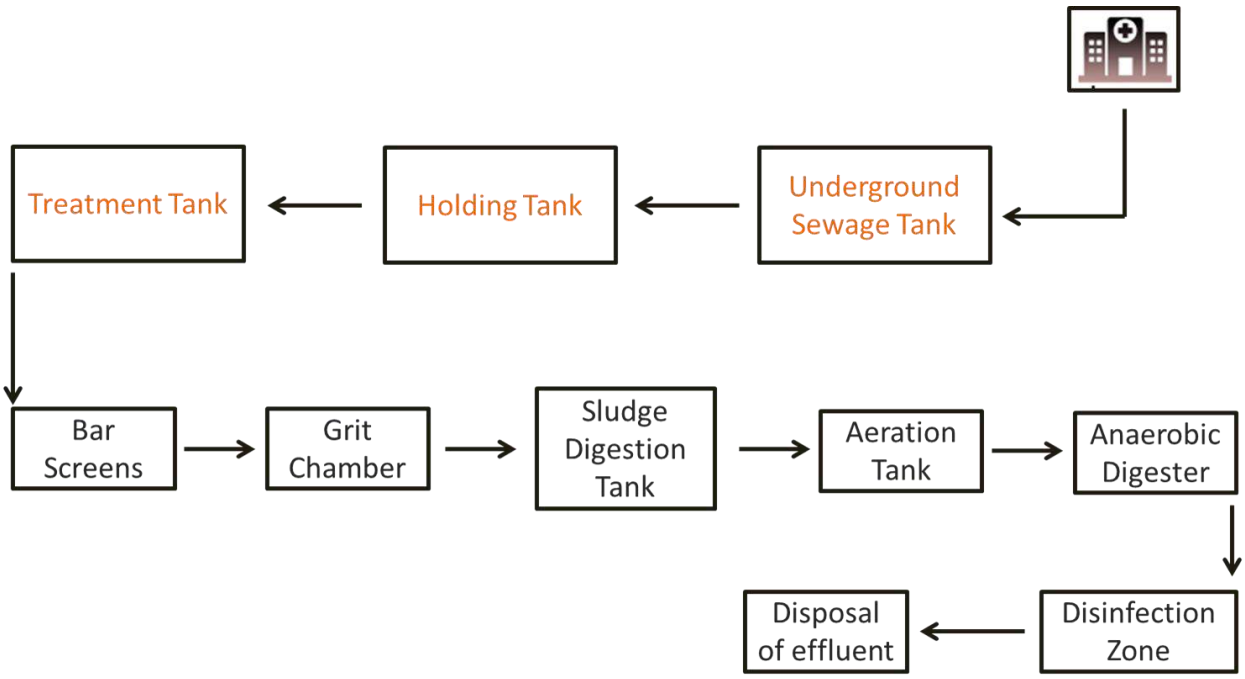

Figure 1: Outline of the Proposed Sewage Treatment Plant

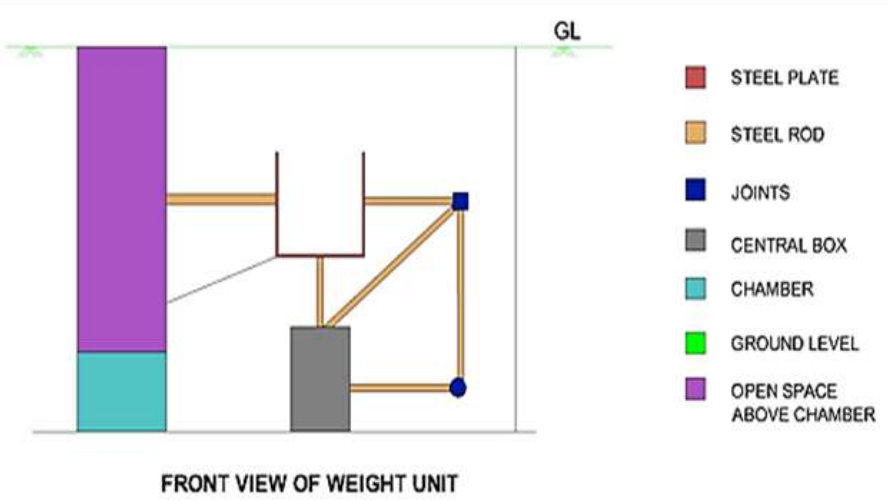

Figure 2: Model of the weight unit in underground sewage tank

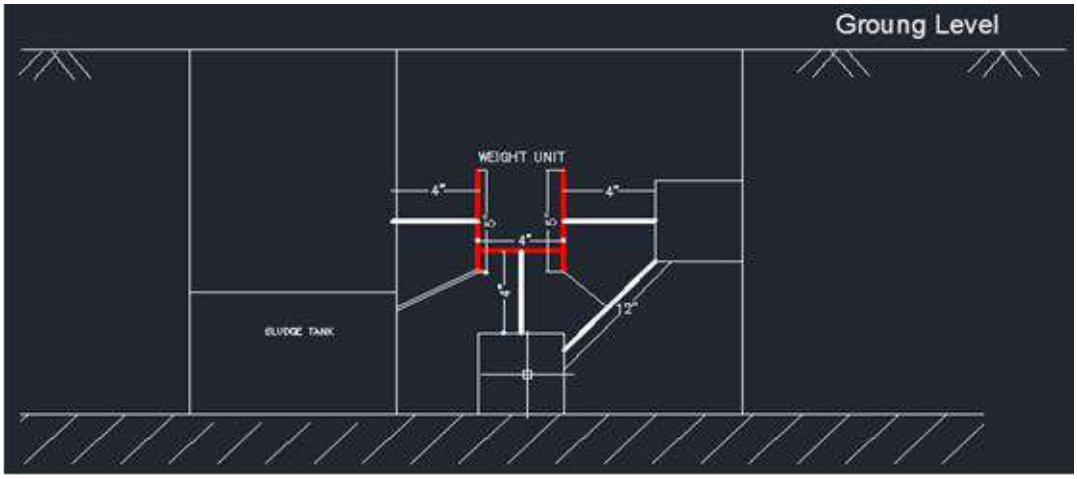

Fig 3: Auto CAD drawing of proposed model of weight unit

Design parameters of prototype are as follows;

1) Dimension of the base plate = 4.5" X 5"
2) Dimension of the side plates = 5" X 5"
3) Length of the center rod = 6"
4) Length of the connecting rod (rod connected to plate) = 6"
5) Length of the sub connected rods = 12"
6) Dimension of middle box = 3" X 5.5" X 6"
7) Diameter of the pipe used = 2.5"
8) Slope of the tank = 3"
9) Tank dimension = 6" X 6"
10) The material use for restoring action: rubber band

3. Prototype development and testing

Based on optimised electric and ultrasonic parameters the device (small treatment tank of 500 Litres) can be fabricated and tested for its effectiveness.

6. **Facilities & equipment**, etc. available in the department concerned and/or in the institution for the proposed investigation.

1. Virology division facilities at NARI

Equipment availablewith	**Generic NameofEquipment**	**Model, Make &year ofpurchase**
Virology Division, ICMR-NARI (PI & his group)	1. PCR 2. Real Time PCR 3. CO2 Incubator 4. Class II Biosafety cabinate 5. Multimode plate reader 6. Viral load testing platform	1.Applied Biosystem 2.Applied Biosystem 3.Thermo Fischer Scientific 4.Thermo Fischer Scientific 5.Thermo Fischer Scientific 6. Abbott m2000
ICMR-NARI Central Facility	1. DNA sequencer 2. FACS	1. Applied Biosystem 2. BD Bioscience

2. Microbiology department facilities at **KIMSDU**

3. Engineering college facilities can be used for tools

Rajarambapu Institute of Technology, UranIslampur

7. Budget of the project:

Details of the investigations/procedures planned in house

Sr. No.	Name of investigation/Procedure	Number to be performed	Unit cost	Total cost
1	Wastewater surveillance for bacterial and fungal pathogens	For 100 samples	INR. 2,50,000/-	INR. 2,50,000/-
2	Capital equipment for laboratory	02	INR. 50,000/-	INR. 1,00,000/-
3	Prototype of underground sewage tank	01	INR. 75,000/-	INR. 75,000/-
4	Prototypes of treatment tanks	02	INR. 1,38,000/-	INR. 1,38,000/-
Details of the investigations/procedures planned at ICMR-NARI				
Manpower				
1	Manpower: **Research Assistant - 1**	For 12 month	INR. 31,000/- consolidated	INR. 3,72,000/-
Consumables				
1	Viral RNA purification & Isolation	1 Kit	INR. 1,50,000/-	INR. 1,50,000/-
2	qRT-PCR based Detection	1 Kit	INR. 1,90,000/-	INR. 1,90,000/-
3	Viral load quantification	1 Kit	INR. 3,10,000/-	INR. 3,10,000/-
4	Plastic wares	For 100 samples	INR. 50,000/-	INR. 50,000/-
5	Other reagents for viral lysis and concentration	For 100 samples	INR. 80,000/-	INR. 80,000/-
Other expenses				
1	Travel and Training		INR. 80,000/-	INR. 80,000/-
2	Outside consultancy and testing of tools		INR. 80,000/-	INR. 80,000/-
3	Contingencies		INR. 50,000/-	INR. 50,000/-
Total budget				**INR. 20,00,000/-**

8. Applicant's signatures with date-

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Re: Study concept

4 messages

Jayant Pawar <jayantpawar26@gmail.com> Wed, Nov 25, 2020 at 9:36 AM
To: Arun Risbud <arunrrisbud@gmail.com>, "Dr.Smita Kulkarni" <skulkarni@nariindia.org>
Cc: "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Sir and Madam,

With reference to the study concept proposed regarding hospital waste water surveillance for SARS-CoV-2 virus and pathogenic microorganisms and their subsequent eradication strategies by development of novel wastewater treatment systems. As per the suggestions received from you, Dr. Anupam Mukherjee and myself developed a research proposal on the proposed concept. Please go through the draft and suggest if any changes are required in the same. After your approval, we can go ahead and submit the proposal to KIMSDU.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad

On Tue, 10 Nov 2020 at 15:24, Dr.Smita Kulkarni <skulkarni@nariindia.org> wrote:

> Thanks Dr Pawar. Good to know that! It would be good if we both, Dr Risbud and me are marked on the mail. So that everyone is aware of what is going on. Regards. Dr Kulkarni.
>
> On Tue, Nov 10, 2020, 8:14 AM Jayant Pawar <jayantpawar26@gmail.com> wrote:
>
> > Dear Madam,
> > I have shared the initial draft of the proposal with Dr. Mukherjee for his inputs on the virology part. As soon as the final draft is ready we shall share the same with you and Dr. Risbud Sir for final approval.
> >
> > Thank you,
> >
> > Regards,
> > Dr. Jayant Pawar
> > KIMSDU, Karad
> > +91 8600867813
> >
> > On Tue, 10 Nov 2020 at 07:08, Dr.Smita Kulkarni <skulkarni@nariindia.org> wrote:
> >
> > > Dear Dr Pawar,
> > >
> > > May I know the progress of this proposal?
> > >
> > > Regards
> > >
> > > Dr Kulkarni
> > >
> > > On Fri, Oct 2, 2020 at 10:16 AM Jayant Pawar <jayantpawar26@gmail.com> wrote:
> > >
> > > > Dear Dr. Mukherjee,
> > > > I am Dr. Jayant Pawar from KIMSDU. Thank you for your mail and showing interest in the collaborative work. As Dr. Kulkarni suggested, include a wastewater surveillance part to predict the presence of SARS CoV 2 in the proposed study, which is the first step towards development of effective strategies for treatment of hospital sewage. In this context, I would like to discuss with you about detection of viral load in hospital wastewater especially generated from COVID wards and then its eradication strategies. We can have telephonic discussion as per convenient time.
> > > >
> > > > Regards,
> > > > Dr. Jayant Pawar
> > > > KIMSDU, Karad
> > > > +91 8600867813
> > > >
> > > > On Thu, 1 Oct 2020 at 19:35, Dr. Anupam Mukherjee <amukherjee@nariindia.org> wrote:

Dear Dr. Risbud,

I'm Dr. Mukherjee from ICMR-NARI. As Dr. Kulkarni said, the concept looks good and we can work on it in collaboration. As you mentioned, please ask Dr. Pawar for further discussion.

Regards,

Anupam

On Thu, 1 Oct 2020 at 19:08, Arun Risbud <arunrrisbud@gmail.com> wrote:

> Dear Dr Smita
> Any updates? Dr. Mukherjee did not contact. I shall ask Dr Jayant Pawar (KIMSDU) to discuss with him and to take it forward.
> Arun Risbud
>
>
>
> On Mon, Aug 24, 2020 at 3:47 PM Dr.Smita Kulkarni <skulkarni@nariindia.org> wrote:
>
> > Dear Dr Risbud,
> >
> > The concept looks good. We will be able to help you in this regard provided we have sufficient funds and manpower. I have forwarded your mail to Dr Anupam Mukherjee, Scientist D, Virology who will be in touch with you and is copied on this mail.
> >
> > Regards
> >
> > Smita
> >
> > On Fri, Jul 31, 2020 at 6:03 PM Arun Risbud <arunrrisbud@gmail.com> wrote:
> >
> > > Dear Smita
> > > Please find attached a concept note on the proposed project. Please review and respond ASAP
> > > Thanks
> > > Risbud
> >
> > --
> >
> > **Dr Smita Kulkarni**
> > Scientist G
> > Head, Department of Virology
> > National AIDS Research Institute
> > Indian Council of Medical Research (ICMR)
> > 73, G Block MIDC Bhosari
> > Pune, India
> > Tel: 91-20-27331207/27331200

--

Anupam Mukherjee, Ph.D
Scientist D & RAMANUJAN Fellow
Division of Virology,
ICMR-National AIDS Research Institute,
Plot No. 73, 'G' Block, MIDC, Bhosari,
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Pune, India
Tel: 91-20-27331207/27331200

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Dr.Smita Kulkarni <skulkarni@nariindia.org> Tue, Dec 1, 2020 at 5:02 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Arun Risbud <arunrrisbud@gmail.com>, "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Dr Pawar,

Thank you for sharing the proposal. I will get back to you by the end of this week.

Regards

Dr Smita Kulkarni
[Quoted text hidden]

Dr.Smita Kulkarni <skulkarni@nariindia.org> Fri, Dec 4, 2020 at 1:07 PM
To: Jayant Pawar <jayantpawar26@gmail.com>
Cc: Arun Risbud <arunrrisbud@gmail.com>, "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>, Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Dr Pawar,

Find enclosed the edited proposal. Methodology looks fine. However please do the grammar check of the initial write up. Few sentences are too long and some need rewording.

Best wishes

Dr Kulkarni
[Quoted text hidden]

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232K

Jayant Pawar <jayantpawar26@gmail.com> Thu, Dec 17, 2020 at 6:40 PM
To: "Dr.Smita Kulkarni" <skulkarni@nariindia.org>, "Dr. Anupam Mukherjee" <amukherjee@nariindia.org>
Cc: Research Krishna Institute of Medical Sciences University <research@kimsuniversity.in>

Dear Madam,
Thank you very much for your valuable inputs. I have modified the draft as per the suggestions received from you and Dr. Risbud Sir.
@ Dr. Mukherjee, PFA the final draft proposal. Please go through it once and let me know if any corrections are required.
Tomorrow morning I will submit a proposal to the protocol review committee and IEC of KIMSDU for approval.

Thank you,

Regards,
Dr. Jayant Pawar
KIMSDU, Karad

[Quoted text hidden]

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KRISHNA INSTITUTE OF MEDICAL SCIENCES
"DEEMED TO BE UNIVERSITY", KARAD
Accredited by NAAC with 'A' Grade (CGPA: 3.20 on 4 Point Scale)
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Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India
Karad, Dist : Satara (Maharashtra State) Pin : 415539 Tel : 02164-241555-8 Fax: 02164-243273/242195
Website : www.kimskarad.in E-mail: research@kimskarad.in

KIMSDU/DR/965/2020 **Date: - 29/12/2020**

Provisional Sanction of Project

To,
Dr. Jayant Pawar
Research Associate,
Directorate of Research Office
KIMSDU, Karad,

Dear Dr. Pawar,

Ref: - Your application for sanction of budget for your study entitled "Design, Development and Evaluation of Hospital Sewage Treatment Strategy with Special Reference to Sars-Cov-2"

A budget of Rs. 30, 25,000/- has been sanctioned for your above mentioned study. The details of item wise budget sanctioned is shown below. The amount will be paid by cheque in your name.

You may note that-

1. This amount has been sanctioned under extra mural fund, received to university to carry out need based research.

2. You shall be entitled to receive seed money as 1st installment up to 50% of amount of sanctioned budget immediately, to expedite the work as early as possible.

3. You shall be eligible to receive 2nd installment of your budgeted amount up to 40% after exhausting 1st installment.

4. An audited statement of accounts should be submitted to the account office after completion of project/ at the end of each financial year whichever is earlier, then only you shall be paid remaining 10% of amount of total sanction.

5. The progress of the research should be communicated to the undersigned every six monthly.

6. At the end of the research study at least two articles should be published with an affiliation to KIMSDU, Karad in journals indexed in UGC care and Scopus/PubMed having impact factor by Thomson Reuters.

7. This letter of sanction of the project is issued subject to the submission of your research project in the prescribed format of research section enclosed herewith.

P.T.O

8. Your project sanction is also subject to clearance from protocol and ethical committee if needed which may please be noted.

9. You are advised to submit the detailed budget through email.

As your study is based upon the recent problems pertaining to COVID-19 therefore the undersigned will request you to complete the project as early as possible with the demonstrable output/outcome.

We will expect from you to begin the work immediately and in due course of time other formalities can be worked out as early as possible.

Consolidated Budget of Project:

Sr. No.	Particulars	Number to be performed	Unit cost Rs.	Total cost Rs.
Manpower				
1	**Project staff: Research Assistant**	2	3,72,000/-	7,44,000/-
Consumables				
1	Reagents for Isolation and identification of bacterial and fungal pathogens from hospital sewage	For 100 samples	1,50,000/-	1,50,000/-
2	Electronic components, PCB tools, Copper clads, single core wires, Arduino board,SS-304 metal sheets etc.	NA	1,20,000/-	1,20,000/-
3	Glass wares	For 100 samples	50,000/-	50,000/-
4	Viral RNA purification & Isolation	1 Kit	1,50,000/-	1,50,000/-
5	qRT-PCR based Detection	1 Kit	1,90,000/-	1,90,000/-
6	Viral load quantification	1 Kit	3,10,000/-	3,10,000/-
7	Plastic wares	For 100 samples	50,000/-	50,000/-
8	Other reagents for viral lysis and concentration	For 100 samples	80,000/-	80,000/-
Equipment				
1	Capital equipment for laboratory	04	50,000/-	2,00,000/-
2	Prototype of underground sewage tank	02	64,000/-	1,28,000/-
3	Prototypes of treatment tanks	02	1,38,000/-	1,38,000/-
Other expenses				
1	Travel and Training		1,10,000/-	1,10,000/-
2	Outside consultancy and testing of tools		.,80,000/-	1,80,000/-

Conti...

3	Contingencies	1,50,000/-	1,50,000/-
4	Project overhead (10%)	2,75,000/-	2,75,000/-
Total budget		**INR. 30,25,000/-**	

With Best Complement.

Dr. Arun J. Patil
RFAC Secretary

Cc: Executive Director, KIMSDU
Director of Research, KIMSDU
Dr. Anupam Mukherjee, ICMR NARI, Pune
Dr. G. S. Karande, Prof. & HOD, Dept. of Micro., KIMS

BLOOD CENTRE, KRISHNA HOSPITAL & MEDICAL RESEARCH CENTRE

POONA BANGALORE ROAD (NH4)
NEAR DHEBEWADI CROSS
MALKAPUR , KARAD 415110
MAHARASHTRA

PHONE NOS : (02164) 241555 (4 Lines)
BLOOD BANK: (0 2 1 6 4) 2 4 1 4 5 6
FAX NOS : (02164)242170, 241410
E mail : khbloodbank@yahoo.com ,
Khbloodbank123@gmail.com

KH/BB/ 62 /2020

Date: 20/08/2020

To,

The Research Director,

KIMS Deemed to Be University, Karad

Respected Sir,

We the Krishna Hospital Blood Center, had conducted blood donation camps in Urban and Rural areas in and around the Karad. Blood donation camps were organized as a collaborating activities under an umbrella of Krishna Institute of Medical Sciences Deemed to be university, Karad.

Kindly acknowledge the same and oblique.

Thanking you,

20.8.2020

Blood Transfusion Officer

Year	Name of the activity	Organising Place	Number of Blood Bank Staff participated in such activities	Number of Student participated in such activities
2015	Blood Donation Camp	Jan-Dec 2015		
1		Kosthi Samaj Karad Satara	8	
2		Suzlon Pvt Ltd,Aagashivnagar	9	
3		Dental Collage,KIMS	9	
4		Kodoli Karad Satara	9	
5		Bhartiy Janta Parti Aagashivnagar	8	
6		Blood Bank,KIMS	9	1
7		Vestas Karad Satara	9	
8		KCT Malkapur(Blood Group Camp)	8	
9		Koyananagar	9	1
10		Panama Morgiri,Patan	9	1
11		Sant Nirankari Vimantal Karad	9	
12		MBA Collage.Wathar	11	
13		Sanbur,Patan	10	
14		Krishna Karkhana,Rethare	8	
15		Jinti	9	
16		Aagashivnagar	9	
	Jan - Dec 2016			
1		Kosti Samaj Karad	9	1
2		Suzlon Pvt Ltd Aagashivnagar	9	
3		Bhrtiya Janata Party,Karad	10	
4		Sangahrsha Group Kusrund Patan	9	1
5		Hanuman Vachnayala Narayanwadi	9	1
6		Blood Bank KIMS	9	1
7		Vestas Karad Satara	9	1
8		Jaywant Sugar Dhavarwadi	4	
9		Dental Collage KIMS	10	1
10		Mangalmurti Group Karad	10	1
11		Koyananagar	10	1
12		Sant Nirankari Mandal Karad	12	1
13		Sanbur Patan	10	
14		Ogalewadi Karad Satara	8	1
15		Blood Bank KIMS	10	
16		Morya Ganesh Mandal Malkapur	9	
17		Krishna Karkhana Rethare	8	
18		Panama Morgiri,Patan	8	

	Jan-Dec 2017			
1		Anirudha Upasana Karad	10	
2		Amhi Chaphalkar Foun.Chaphal	11	
3		Devang Kosti Samaj Karad	10	
4		Gotewadi	10	
5		Hajrat Tipu Sultan Group Bhalvani	10	
6		Khubi	10	1
7		Morewadi Patan	9	1
8		Supane	11	
9		Talmaule	10	1
10		Sai Lab Hingnole	10	
11		Sant Nirankari Mahvashi	11	
12		Aagashivnagar	10	1
13		AIDS Control Satara	11	
14		Yedenipani	11	
15		Pophali	11	
16		Rajendra Yadav Group Karad	11	
	Jan-Dec 2018			
1		Talbid	9	
2		Dhebewadi	10	
3		Atake	10	
4		Suzlon	10	
5		Pal	10	
6		KIMS Karad	11	
7		Shivnagar	11	
8		Lavanmachi	11	
9		Kokrud	10	
10		Kapil	10	
11		Ghogaov	11	
12		Kusrund	10	
13		Shivnagar	10	1
14		Aagashivnagar	10	1
15		Vimantal	9	
16		Koyana Vasahat	9	1
17		Dushre	10	1
18		MIDC Tasavade	10	1
19		Karad	11	1
20		Belawade	9	
21		Saidapur	10	1
22		Malharpeth	10	1

23		Dhebewadi	9	
24		Peth	7	2
25		Rameshtewadi	9	1
26		Rethar B	7	1
27		Suzlon	9	
	Jan-Dec 2019			
1		Suzlone	9	
2		Nagthane	9	
3		KIMS	10	
4		Salave	8	
5		Supane	9	
6		Aagashivnagar	9	
7		Mhavshi	9	
8		Vimatal	10	
9		Hingaongaov	11	
10		Karad	10	
11		Vahagaov	10	
12		Narendra Maharaj Karad	8	
13		Riswad	8	3
14		Rethare BK	8	1
15		Gondi	8	1
	Jan-Dec 2020			
1		Umbraj	8	3
2		Kole	9	3
3	Blood Group	Chore	3	2
4		Naghatane	9	4
5	Blood Group	Shere	3	1
6		KIMS Karad	10	4
7		Hingnole	8	
8		Nanasaheb Pratisthan Karad	9	
9		Karad	8	2

20.8.20

Blood Transfusion Officer

BLOOD DONATION PROGRAMS

BLOOD DONATION PROGRAMS

महाराष्ट्र MAHARASHTRA ◑ 2018 ◑ TH 122751

जोडपत्र १ व २ /Annexure-I & II

मुद्रांक विक्री कारण–
Reason of sale stamps and Amount
मुद्रांक विकत घेणाराचे नांव व पत्ता–
Stamp Purchasers Name
Stamp Purchasers Name
Serial No and Date
Stamp Purchasers Sign.
तहसिल कार्यालय कराड

SUB TREASURY OFFICE KARAD
22 MAY 2019
SUB TREASURY OFFICER KARAD

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

ज्या कारणासाठी ज्यांनी मुद्रांक खरेदी केला त्यांनी त्याव कारणासाठी मुद्रांक खरेदी केल्यापासून ६ महिन्यात वापरणे बंधनकारक आहे.

Memorandum of Understanding
Between
Nursing Research Society of India (NRSI)
And
Krishna Institute of Medical Sciences "Deemed to be University",
Faculty of Nursing Sciences, Karad

This Memorandum of Understanding (herein after referred to as "Memorandum") is made this on dated 10.07.2019 (herein after referred to as "Effective date") between Nursing Research Society of India, Choitram College of Nursing, Manik Bagh Road, Indore-452014 hereinafter referred to us "NRSI" and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad

Krishna Institute of Medical Sciences "Deemed to Be University", Karad

NURSING RESEARCH SOCIETY OF INDIA NRSI

ARTICLE 1: PURPOSE

The NRSI and KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", FACULTY OF NURSING SCIENCES, KARAD hereby establish a formal affiliation for the purpose of enhancing the relationship between NRSI and KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", FACULTY OF NURSING SCIENCES, KARAD, through the promotion and development of collaborative research and other cooperative activities and assistances in areas of mutual interest and benefit. The NRSI and KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", FACULTY OF NURSING SCIENCES, KARAD anticipate that such activities may include **any or all** or the following:

1. Exchange of researches;
2. Collaborative research;
3. Exchange of documentation, research material, publication and information on field of mutual interest;
4. Development, organization and hosting of joint Research symposia, conferences, workshops and meetings;
5. Exchange of information, advice and assistance relating to areas of mutual interest;
6. Other activities of mutual benefit for NRSI and KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", FACULTY OF NURSING SCIENCES, KARAD.

ARTICLE 2: TERMS AND CONDITION OF PROGRAMS AND ACTIVITIES TO BE EVIDANCED IN FUTURE WRITTEN

AGREEMENTS

All future programs and activities shall be subject to the approval of NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad, the availability of appropriate financial and administrative support and compliance with all applicable laws and regulations and policies of NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad. Each program and activity meeting these criteria shall be evidenced in a separate written agreement, executed by duly authorized representative of NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad and shall describe all of the terms and conditions relating to the program or activity and its implementations, including all financial obligations.

ARTICLE 3: EFFECT OF THIS MUSTER AGREEMENT

This memorandum is a master agreement and describes the arena for future projects and relationship between the NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad. It is not intended to contain any specific information regarding the terms and conditions of any intended or anticipated programs and activities between the NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad and specifically excludes the grant of any

benefit to, or the imposition of any obligation on both NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad.

ARTICLE 4: TERMS AND EARLY TERMINATION

This Memorandum shall become effective as of the Effective Date and shall continue for a term of five (5) years. Thereafter, it may be renewed for additional terms upon the written consent of NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad and upon such terms and conditions as agreed to by NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad at the time of renewal. NRSI or Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad may terminate this Memorandum at any time upon giving at least ninety (90) days prior written notice to the other Party. There shall be no penalty payment due open the early termination of this Memorandum.

ARTICLE 5: EFFECT OF EXPIRATION OR EARLY TERMINATION

If, at the expiration of the initial or any subsequent renewal terms, either NRSI or Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad do not agree to renew this Memorandum, or upon the early termination of this Memorandum, all of the current programs and activities shall be terminated as soon as reasonably practicable and upon terms agreed to between the NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad.

All separate agreements evidencing such programs and activities shall continue in full force and effect until the cessation of the program or activity in accordance with the terms and conditions agreed to between the NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad.

ARTICLE 6: TERMS OF FUTURE AGREEMENTS

Each agreement which is subsequently entered into NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad to evidence a future activity shall contain sufficient information to fully describe the specific relationship between NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad in connection with that specific activity and shall fully describe the benefits and obligation of both NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad. In particular, each such agreement shall address at least the following issues:

1. Each agreement shall specify the term of the activity but shall also reference that activity shall cease as soon as reasonably practicable and as agreed to between NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad in the event this Memorandum expires or is terminated early.

2. Every year at least one event (Seminar/Conference/Workshop) has to plan by Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad in consultation with NRSI.
3. Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad physical infrastructure can be shared for Post Doctoral Fellowship awardees of NRSI.
4. Each agreement shall contain provisions substantially similar to those contained in Article 7 of this Memorandum. In addition, each agreement shall contain an appropriated force majeure clause.
5. Both NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad shall appoint its own representative with respect to each activity who shall be directly responsible for overseeing the implementation and operation of the activity and who shall act as the main point of contact with respect to that activity.
6. INTELLECTUAL PROPERTY The parties agree that any copyrightable subject matter except privately published journal articles, created either jointly or separately by the parties from the activities conducted under this MOU. Privately published journal articles created separately by The Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad or NRSI or jointly by the parties from the activities conducted under the MOU, may be copyrighted by The Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad or NRSI. The parties agree that all journal articles, presentations and other communications created jointly by the parties from the activities conducted under the MOU need to be reviewed and approved in accordance with the policies of both parties prior to publication or presentation. The parties agree that any patented invention created by Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad or NRSI pursuant to the terms of this MOU will be jointly owned by the parties, with an agreement indicates otherwise.
7. NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad shall review the activities proposed to be undertaken and shall include appropriate provision addressing the following issues: risk of loss, responsibility for the acts and omissions of its employee, officers, directors, faculty and students with respect to the activities proposed to be undertaken, determining the necessity for and amount of insurance coverage with respect to the activities the proposed to be undertaken, notification of the occurrence of events or incidents, related to the activities proposed to be performed that could give rise to a claim against the other party, and provision that address applicable governing law, jurisdiction and venue in the event claims arise from the activities proposed to be undertaken.
8. NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad acknowledge that Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad established and Declared U/s 3 of UGC ACT, 1956 vide Notification no.F.9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India and will be subject to the provision therein. Thus, primarily it will be subject to the laws or legal process of jurisdiction of the Maharashtra State.

ARTICLE 7: MISCELLANEOUS

1. This Memorandum does not restrict either NRSI or Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad from engaging in the same or similar activities with any third party.
2. This Memorandum benefits only the NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad and their permitted assigns.
3. This Memorandum may only be amended in writing upon approval of both NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad. .
4. This Memorandum may not be assigned (by operation of law or otherwise) or otherwise transferred by NRSI or Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad, in whole or in part, without the prior written consent of the other party.
5. The relationship created between NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad pursuant to this Memorandum is that independent contractor. Neither NRSI nor Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad has the authority or right to act on behalf of the other Party or to bind the other Party.
6. Neither NRSI nor Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad shall use the name of the Party or any of its officers, employee or agents in connection with any press release, advertising, promotional literature or any other publicity matters, without the prior written consent of the other party. Notwithstanding this restriction, both NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad may use the name of the other Party in general and information listing and as otherwise required by applicable law.
7. Any notice required or permitted under this Memorandum shall be delivered by hand, by overnight courier or by each Party's (NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad) national postal service and address may be amended form time in accordance with this Memorandum. Delivery shall be deemed effective upon receipt, if delivered by hand or by overnight courier and within fifteen (15) business day if mailed.
8. This Memorandum shall continue in full force and effect, exclusive of any provision deemed to violate applicable law.
10. This Memorandum may be executed in counterparts, all of which together shall Constitute one agreement.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

NURSING RESEARCH SOCIETY OF INDIA NRSI

The NRSI and Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad have executed this.

Memorandum by their respective duly Authorized representatives

NRSI: Nursing Research Society of India	**Krishna Institute of Medical Sciences "Deemed to be University", Faculty Of Nursing Sciences, Karad**
Signature :	**Signature** : .....
Name : DR. SELVA TITUS CHACKO	**Name** : **Dr. M. V. Ghorpade**
Title : PRESIDENT	**Title** : **Registrar**
Date : 27.11.19	**Date** : **10.07.2019**

Address for Notices:
Nursing Research Society of India
Choitram College of Nursing, Manik Bagh Road, Indore-452014

Address for Notices:
Krishna Institute of Medical Sciences "Deemed to be University", Faculty of Nursing Sciences, Karad

Krishna Institute of Medical Sciences "Deemed to Be University", Karad
Accredited by NAAC with 'A' Grade (CGPA:3.20 on 4 Point Scale)
An ISO 9001:2015 Certified Institution
NIRF Rankings 2020 - University Ranking 90 , Medical College Ranking 37 http://www.kimskarad.in/

WEST ZONE NRSI CONFERENCE
ON
RESEARCH METHODOLOGY

Jointly Organized by
Krishna Institute of Medical Sciences "Deemed to Be University's",
Krishna Institute of Nursing Sciences, Karad, (Maharashtra.)
And
Nursing Research Society of India

Date: 9.12.2020 & 10.12.2020

CHIEF PATRON

Hon'ble Dr. Suresh J. Bhosale ,Chancellor, KIMSDU, Karad.

PATRONS

Hon'ble Dr. Vedprakash Mishra
Chief Advisor to chancellor, KIMSDU, Karad.

Hon'ble Dr. Neelam Mishra
Vice-chancellor,
KIMSDU, Karad.

Hon'ble Dr. Pravin Shingare
Pro-chancellor, KIMSDU, Karad.

Dr. Arun Risbud
Director of Research, KIMSDU, Karad.

Dr. D.K. Agarwal
Additional Director of
Research, KIMSDU

Dr. M.V. Ghorpade
Registrar, KIMSDU, Karad.

Dr. Selva Titus Chacko
President NRSI

Dr. Assuma Beevi T M
VICE PRESIDENT NRSI

DR.(Mrs.) Vaishali R. Mohite
Dean, KINS, Karad. Conference -
Chairperson

Dr. Anil Sharma
Secretary - NRSI

Mrs. Lata Mandal
JT. SECRETARY- NRSI

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Resource Persons

Mrs. Shanta De
President- West zone NRSI.
Professor, College of Nursing,
Bharati Vidyapeeth Deemed
University, Katraj Pune

DR. Kanchana
Professor & Principal, Omayal
Achi college of
Nursing, Chennai

Dr. S.J. Nalini, Professor
&Principal, Faculty of Nursing
Sri Ramachandra Institute of
Higher Education & Research,
Chennai

Dr. Vasumati
Founder and CEO
QMed Knowledge foundation
Mumbai

DR. Nutan Potdar
Associate professor, KINS. Workshop coordinator

DR. Prabhuswami Hiremath
Lecturer, KINS. Workshop coordinator

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED-TO BE UNIVERSITY", KARAD

FACULTY OF NURSING

And

NURSING RESEARCH SOCIETY OF INDIA

Jointly organizing

CONFERENCE ON RESEARCH METHODOLOGY

Date: 9.12.2020 & 10.12.2020

Sr. no.	Topic	Day	Time	Speaker
1.	Introductory speech	Day 1	8.45 am	DR. Nutan Potdar Associate professor KINS, Karad.
2.	Ethics in Research		9-10 am	Mrs. Shanta De Professor, College of Nursing, Bharati Vidyapeeth Deemed University, Katraj Dhanawadi Pune Mob: 9921526290 Email: santade.ray@gmail.com
3.	Plagiarism, How to Write Pure Research		10-11 am	Dr. S.J. Nalini, M.Sc.(N), Professor & Principal Head, Unit of Nursing Research Faculty of Nursing Sri Ramachandra Institute of Higher Education & Research (DU) Porur, Chennai 600 116
4.	Citation, References and Reference Managers		11- 12 am	Dr. Vasumati Founder and CEO QMed Knowledge foundation Andheri East, Mumbai – 400099.
5.	Preparation of Article for Publication	Day 2	9-10 am	DR. Kanchana Professor & Principal Omayal Achi college of Nursing Chennai
6.	Good Academic Research Practices		10-11 am	DR.(Mrs.) Vaishali R. Mohite Dean, KINS, Karad.
7.	Vote of thanks		11am	DR. Prabhuswami Lecturer, KINS, Karad.

About university:

Krishna Institute of Medical Sciences "Deemed To Be University", Karad is located in Western Maharashtra, India against the background of mountains and valleys. The green, eco-friendly campus is spread over 57 acres and is well connected by rail, road & air.

The University is accredited by NAAC 'A' grade and has been conferred with ISO 9001 : 2015 certification. The constituent faculties of the University include Medical, Dental, Physiotherapy, Nursing, Pharmacy and Biotechnology offering undergraduate and postgraduate courses in the respective faculties. It also runs Ph.D. programs and Post Doctoral Fellowships in various subjects.

The University has been ranked 5th amongst the cleanest higher Educational Institutions in the category of 'Technical Institutions - Universities (Residential)' in the year 2018. The University has also received certificate for 'Maintaining, Promoting and Encouraging the Culture of Swachhta in Higher Education Institutions in the country'.

Experienced faculty, secure and spacious hostels, a sports complex, various extra-curricular activities have succeeded in attracting the students from all over India and from USA, UK, New Zealand, Middle East countries, Sri Lanka, Canada, Mauritius and many other countries.

About conference:

Institute of Krishna Institute of Nursing Sciences has taken initiative to propagate and conduct current workshop which is an effort to enrich the Research scholars in nursing on research methodology. The research methodology is expected to cover the basics of research methodology focusing on theoretical and practical inputs. Specifically the Ethics in Research Preparation of article for publication, Citation, References and Reference Managers, Plagiarism, How to Write Pure Research, Preparation of Article for Publication, Good Academic Research Practices.

Objectives:

- To enable the participants, define Ethics in Research, How to Write Pure Research, Preparation of Article for Publication, Good Academic Research Practices.
- To enable the participants to prepare article for publication, Citation, References and Reference Managers, Plagiarism.
- To make aware the participants about Citation, References and Reference Managers, Plagiarism
- To sensitize about Good Academic Research Practices.

Target Audience

Research scholars of social sciences, faculties from Health sciences, PG Students with high research aptitude and all other aspirants who are keen to seek knowledge about various aspects of research.

For further details contact:

DR. Nutan Potdar Associate professor, KINS. Workshop coordinator	9511858291
DR. Prabhuswami Hiremath Lecturer KINS. Workshop coordinator	9665620425
Krishna Institute of Nursing Sciences, Karad	02164- 241555, 241556,241557 Extn: 266

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WEST ZONE NRSI CONFERENCE ON RESEARCH METHODOLOGY

Jointly Organized by

Krishna Institute of Medical Sciences "Deemed to Be University's", Krishna Institute of Nursing Sciences, Karad, (Maharashtra.)
And
Nursing Research Society of India

Date: 9.12.2020 & 10.12.2020

Report:

West Zone NRSI Conference on Research Methodology was Jointly Organized by Krishna Institute of Medical Sciences "Deemed to Be University's", Krishna Institute of Nursing Sciences, Karad, (Maharashtra.) And Nursing Research Society of India, on 9.12.2020 & 10.12.2020.

Chief Patron of this conference was Hon'ble Dr. Suresh J. Bhosale ,Chancellor, KIMSDU, Karad, Patrons were Hon'ble Dr. Vedprakash Mishra , Chief Advisor to chancellor, KIMSDU, Karad, Hon'ble Dr. Neelam Mishra, Vice-chancellor, KIMSDU, Karad and Hon'ble Dr. Pravin Shingare, Pro-chancellor, KIMSDU, Karad, Dr. M.V. Ghorpade, Registrar, KIMSDU, Karad Dr. Arun Risbud, Director of Research, KIMSDU, Karad. Dr. D.K. Agarwal, Additional Director of Research, KIMSDU, Karad.

Conference -Chairperson DR.(Mrs.) Vaishali R. Mohite, Dean, KINS, Karad.

Speakers were

1. Mrs. Shanta De, President- West zone NRSI. Professor, College of Nursing, Bharati Vidyapeeth Deemed University, Katraj Pune
2. DR. Kanchana, Professor & Principal, Omayal Achi college of Nursing, Chennai
3. Dr. S.J. Nalini, Professor &Principal, Faculty of Nursing, Sri Ramachandra Institute of Higher Education & Research, Chennai
4. Dr. Vasumati, Founder and CEO, QMed Knowledge foundation Mumbai

Objectives:

- To enable the participants, define Ethics in Research, How to Write Pure Research, Preparation of Article for Publication, Good Academic Research Practices.
- To enable the participants to prepare article for publication, Citation, References and Reference Managers, Plagiarism.
- To make aware the participants about Citation, References and Reference Managers, Plagiarism
- To sensitize about Good Academic Research Practices.

Target Audience was Research scholars of social sciences, faculties from Health sciences, PG Students with high research aptitude and all other aspirants who are keen to seek knowledge about various aspects of research.

Introductory speech was given by Mrs. Manisha Gholap, Associate professor KINS, Karad. Ethics in Research topic was delivered by Mrs. Shanta De, Professor, College of Nursing, Bharati Vidyapeeth Deemed University Pune.

Plagiarism, How to Write Pure Research was effectively said by Dr. S.J. Nalini, M.Sc.(N), Professor & Principal Head, Unit of Nursing Research Faculty of Nursing Sri Ramachandra Institute of Higher Education & Research (DU) Porur, Chennai. Dr. Vasumati, Founder and CEO, QMed Knowledge foundation, Mumbai explained how to Citation, References and different Reference Managers. DR. Kanchana, Professor & Principal, Omayal Achi college of Nursing Chennai highlighted and guided on Preparation of Article for Publication. The most important aspect of conference was developing healthy habits of nursing research which was well explained by DR.(Mrs.) Vaishali R. Mohite Dean, KINS, on the topic Good Academic Research Practices. Vote of thanks proposed by Mr. Prabhuswami.

Total participants registered were 250 including faculty, students and participants from other institutes.

Learning Gain= Aggregate Post-test knowledge score-Pre-test Score/No of Questions X100

Learning Gain= 8.5-4 / 10 = 45

KRISHNA INSTITUTE OF NURSING SCIENCES
KIMSDU KARAD

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Memorandum of Understanding for Collaboration
Between
Krishna Institute of Medical Sciences Deemed University, Karad
And
Rangnath Hospital & Laparoscopic Academy, Kolhapur

Preamble:

Krishna Institute of Medical Sciences Deemed University, (KIMSDU) Karad and Rangnath Hospital & Laparoscopic Academy, Kolhapur appreciate each others contribution in the field of Medical Sciences and are of opinion that collaboration between the two, shall be of mutual benefit to both the Institutions and students.

Objectives:

Through this MoU, we hereby decide to facilitate capacity building as regards training and research in the field of Minimal Access Surgery.

1. To undertake Post Doctoral fellowship program in Minimal Access Surgery of duration of One year and offer training.
2. To undertake research projects.

Co-ordination:

Professor and Head Department of Ob/Gyn, KIMS, Karad shall coordinate all activities of the fellowship training programme in consultation with Dr. Pravin Hendre, Director, Rangnath Hospital & Laparoscopic Academy, Kolhapur.

Responsibilities :

KIMSDU, on its part would undertake the following responsibilities :

1. Admission of the fellow.
2. Planning the course schedule for the fellow at KIMDU & Rangnath Hospital & Laparoscopic Academy, Kolhapur.
3. Communication with Dr. Pravin Hendre, whenever necessary.

Rangnath Hospital & Laparoscopic Academy, Kolhapur on its part would undertake the following responsibilities :

1. Jointly design the programme as per needs of KIMSDU.
2. Communication with Prof. and Head Department of Ob/Gyn. regarding training and other academic aspects, if any.

3. Provide training in Minimal Access Surgery which will include observing and assisting in endoscopic procedures.

Contents of the course, faculty and financial aspects of the fellowship programme will be decided from time to time jointly by KIMSDU and Rangnath Hospital & Laparoscopic Academy.

Only one candidate will be registered at a time for fellowship in Minimal Access Surgery.

Financial Liabilities :

Rangnath Hospital & Laparoscopic Academywill not have any financial liability and will be paid fee of Rs. 50,000/- (Rupees Fifty Thousand only) per fellow.

Tenure:

This MoU is effective from 17th August, 2015 and will be valid for a period three years from the date of signing.

Either of the institution may terminate the MoU by giving a written notice to other institute three months in advance.

Arbitration Clause:

Any dispute arising, the Hon'ble Vice Chancellor, Krishna Institute of Medical Sciences Deemed University, Karad and Dr. Pravin Hendre of Rangnath Hospital & Laparoscopic Academy, Kolhapur will jointly resolve in a spirit of independence, mutual respect and shared responsibility.

Signed by

Dr. M. V. Ghorpade
Registrar
KIMSDU, KARAD.

DATE: -

Signed by

Dr. Pravin Hendre,
Director, Rangnath Hospital & Laparoscopic Academy, Kolhapur
DATE:-

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY, KARAD.

Report of MOU 2015-16

This MOU between Krishna Institute Of Medical Sciences Deemed To Be University and Society of research in Reproductive Medicine, Kolhapur was done to facilitate capacity building as regards Fellowship training for the field of Perinatal Medicine.

Dr. Digvijay Kadam registered for fellowship in Perinatal Medicine with Krishna Institute of Medical Sciences Deemed To Be University visited to the above mentioned centre of excellence in Perinatal Medicine every weekend.

He observed and was trained in following specialized procedures.

1. Aminiocentesis.
2. Chrionic villous Biopsy.
3. Intra uterine foetal transfusion.
4. Intra uterine foetal surgery.
5. Genetic Counselling.

He completed their training successfully.

Dr. R. P. Patange
Prof. & HOD
Dept. of Ob. & Gyn.
KIMS, Karad.

Professor & Head
Dept. of obstetrics & Gynecology
Krishna Hospital &
Krishna Institute of Medical Scienc...
Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY, KARAD.

Report of MOU 2016-17

This MOU between Krishna Institute Of Medical Sciences Deemed To Be University and Society of research in Reproductive Medicine, Kolhapur was done to facilitate capacity building as regards Fellowship training for the field of Perinatal Medicine.

Dr. Manisha Laddad registered for fellowship in Perinatal Medicine with Krishna Institute of Medical Sciences Deemed To Be University visited to the above mentioned centre of excellence in Perinatal Medicine every weekend.

She observed and was trained in following specialized procedures.

1. Aminiocentesis.
2. Chrionic villous Biopsy.
3. Intra uterine foetal transfusion.
4. Intra uterine foetal surgery.
5. Genetic Counselling.

She completed their training successfully.

Dr. R. P. Patange
Prof. & HOD
Dept. of Ob. & Gyn.
KIMS, Karad.

Professor & Head
Dept. of Obstetrics & Gynecology
Krishna Hospital &
Krishna Institute of Medical Sciences
Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY, KARAD.

Report of MOU 2017-18

This MOU between Krishna Institute Of Medical Sciences Deemed To Be University and Society of research in Reproductive Medicine, Kolhapur was done to facilitate capacity building as regards Fellowship training for the field of Perinatal Medicine.

Dr. Archana Rokade registered for fellowship in Perinatal Medicine with Krishna Institute of Medical Sciences Deemed To Be University visited to the above mentioned centre of excellence in Perinatal Medicine every weekend.

She observed and was trained in following specialized procedures.

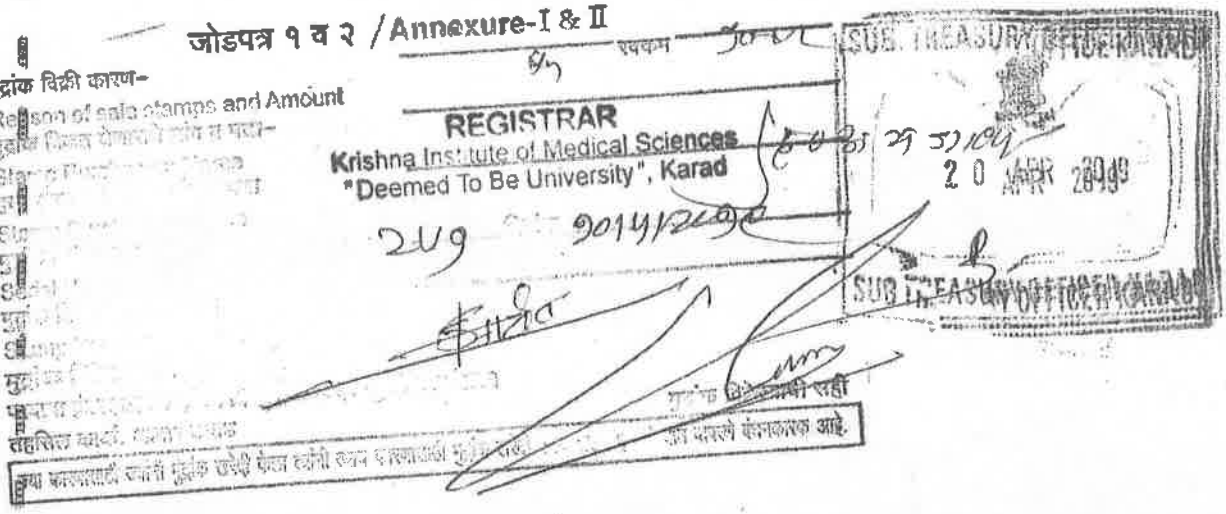
1. Aminiocentesis.
2. Chrionic villous Biopsy.
3. Intra uterine foetal transfusion.
4. Intra uterine foetal surgery.
5. Genetic Counselling.

She completed their training successfully.

Dr. R. P. Patange
Prof. & HOD
Dept. of Ob. & Gyn.
KIMS, Karad.

Professor & Head
Dept. of obstetrics & Gynecology
Krishna Hospital &
Krishna Institute of Medical Science
Karad

महाराष्ट्र MAHARASHTRA ◐ 2018 ◐ UH 001556



Memorandum of Understanding

The Memorandum of Understanding is made on this 10th day of May 2019 between the Krishna Institute of Medical Sciences "Deemed To Be University", Karad as first party and Richardson Leprosy Hospital, Tal- Miraj, Dist. - Sangli through Superintendent, Dr. Shirish Shegaonkar age 58 , occupation service as second party.

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Whereas the KIMSDU, Karad has been set up as Deemed To Be University in the medical health sciences granted by UGC under sub section 3 of 1956.

AND

whereas KIMSDU is having medical, dental, physiotherapy, nursing, pharmacy and allied sciences in which KIMSDU is awarding academic degree as well as carrying out medical research, public health research or health services administration based on scientific principles.

AND

whereas the Richardson Leprosy Hospital, Tal- Miraj, Dist.- Sangli (TLMTI) founded in 1874as the 'Mission to Lepers' and conducting various activities as a self sustainable unit in the field of hospitals and health care, reconstructive surgery, training and education, disability care and prevention, community development and income generation and advocacy etc.

1) Objectives

The general objective of this Memorandum of Understanding (MOU) is to stimulate and facilitate the development of collaborative and mutually beneficial programs which serve to enhance the intellectual life and cultural development on both campuses as well as to promote and encourage staff and students for research and academic activities. Both the institutions have agreed that in support of their mutual interests in the field of education and research.

2) Technical Areas of Collaboration

Each institution will promote the exchange of faculty for collaborative research programs, practical demonstration of physiotherapy, Medical and Para Medical Student will abide by all regulation, policies and procedure of their institution regarding the disclosing and handling of intellectual property, technologies, and confidential information that may arise under this MOU.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

3) Proposed Modes of Collaboration

Collaboration with Richardson Leprosy Hospital Miraj Tq. Dist., Sangli, for research activity, practical demonstration for providing interdisciplinary knowledge. A specific plan will be worked out by institutes depending upon availability of resources.

4) Terms and conditions

Both institutes agree to help the students for their study work as per the terms and conditions of institutions. This MOU may be amended, renewed and terminated by mutual written agreement of the institutions at any time.

5) Confidentiality

Institutes agree to hold in confidence all information data designed by the institutes as being confidential which obtain from either institute or created during the performance and will not disclose to same to any third party without written consent of the other institute.

6) Duration

The period of the Memorandum of Understanding will be initially for a period of five years beginning from the academic year 2018-19 and may be revised from time to time by mutual understanding between the parties duly recorded and signed on behalf of both the parties.

7) Coordinators

Both institutes will designate persons who will have responsibility for co-ordination and implementation of this agreement

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

- To hold the responsibility for the implementation, monitoring, accounting and reporting of its activities in relation to the projects and as per this MOU
- To provide regular updates and reports in accordance with a mutually agreed reporting framework by the appropriate dates
- To ensure the efficient operational and financial management of the projects according to the project documentation and this MOU
- To retain all original financial documentation in relation to the Projects

8) Intellectual property Rights

- The intellectual property right (IPR) that arises as a result of joint research and collaborative activity under the agreement will be consistent with officially laid down IPR policies of the two institutes
- All intellectual property and related materials, including any trade secrets, moral rights, goodwill, relevant registrations or applications for registration, and rights in any patent, copyright, trademark, trade dress, industrial design and trade name (the "Intellectual Property") that is developed or produced under this Agreement, is a "work made for hire" and will be the sole property of the TLM. The use of the Intellectual Property by the TLM will not be restricted in any manner.
- The Consultant shall not use the Intellectual Property for any purpose other than that contracted for in this Agreement except with the written consent of the TLM. The Consultant will be responsible for any and all damages resulting from the unauthorized use of the Intellectual Property.

9) Financial aspects

- Financial aspects if any during the course of any services extended by TLM, Miraj hospital shall be paid by KIMSDU, which shall be born from student fee/ research fund.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

10) Arbitration

- Any disputed resolution mechanism in the agreement may culminate in Arbitration proceedings, thereby ensuring that there is no litigation on issues through Courts of law as far as is possible.
- The jurisdiction in case of any legal proceedings should be Miraj, Maharashtra, as the place of work/operations is at Miraj. On the other part, the jurisdiction in case of any legal proceedings should be Karad, Maharashtra, as the place of work/operations is at Karad.
- The respective responsibilities and obligations to ensure the complete accountability of the parties through the various arrangements shall be made at the respective places.

11) Signed in Duplicate

- This MOU is executed in duplicate with each copy an official version and having equal legal validity. By signing below, the institutes, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as on the day and year first above written.

12) Termination

- The provisions of this MOU can only be amended or modified with the prior written consent of all parties.
- If any of the parties decides to terminate this MOU earlier than the stipulated project period, they must serve formal notice in writing to the other party three months in advance with an explanation. A process of consultation and conciliation can then be initiated to safeguard the future of the project.
- If at any time during the course of this MOU it becomes impossible for the parties to perform any of their obligations for reasons of force majeure, that party shall promptly notify the other party in writing of the existence of such force majeure. The party giving notice is thereby relieved from such obligations as long as force majeure persists.
- This Agreement may be terminated for convenience by either party by giving a written notice of 60 days to the other party, with justification.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

- The expiry or termination of this Agreement shall be without prejudice to the rights and obligations of the Parties up to and including the date of expiry or termination and shall not affect or prejudice any term of this Agreement that is expressly or by implication provided to come into effect on, or continue in force after, such expiry or termination.
- In the event of termination, Consultant will ensure that there is a seamless transition of the Services so as to ensure that there is no inconvenience caused to TLM.

13) Governing Law & Jurisdiction

- This Agreement shall be governed by the laws in India and the competent courts at Miraj India shall have exclusive jurisdiction to entertain any disputes arising out of this agreement.

Dr. Shirish Shegaonkar,
Superintendent,
Richardson Leprosy Hospital, Miraj.

Second Party

Witness: Second Party

Dr. M. V. Ghorpade,
Registrar
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

First Party

Witness: First Party

In the witness whereof the parties here to have under set and subscribed their perspective hands and seal on the day of signing the MOU.

KRISHNA INSTITUTE OF MEDICAL SCIENCES, KARAD

COMM. MED. /340/20

Date:- 20/11/2020

To,

The Registrar,
Krishna Institute of Medical Sciences
"Deemed to be University ", Karad.

Ref.:- KIMSDU/M-6/3253/2020, dated- 28.10.2020
Sub.:- Report of MOU of RLH, Miraj(Richardson Leprosy Hospital) collaboration activities .

Sir,

With above reference the report of MOU with RLH signed in May 2020 submitting herewith.

1. For enrichment of knowledge & skills of our Tropical Medicine Elective Programme, the students from U. S. Visited in Jan. 20 & March 20, They were benefitted by improvement in knowledge & skills in respect of clinical aspects & management of Leprosy patients.
2. Our Physiotherapy PGs & faculty along with PGs & faculty from Community Medicine visited on 20.11.20 . They exchanged knowledge as well as skills for management by demonstration for rehabilitation.

Please fined attached herewith an appreciation letter from RLH, Miraj & it's report for your perusal. Also attached honorarium charges as per MOU .

Sincerely Yours,

Prof. & Head,
Community Medicine Department
K.I.M.S., Karad.

Professor & Head
Dept. of Community Medicine
Krishna Institute of Medical Sciences, D.U.
KARAD.

CC:- The Director of Research,
KIMSDU, Karad. for Necessary Action Please .

The Leprosy Mission Trust India
healing.inclusion.dignity

Richardson Leprosy Hospital
Miraj-Sangli Highway,
Chandanwadi, Miraj - 416 410
Dist. Sangli. M.S.
Phone No.: 0233-2211213
2211708
E-mail- miraj@leprosymission.in

Date: - 20th November 2020

To,
The Registrar
Krishna Institute of Medical Sciences
"Deemed to be university" Karad

Subject: - Students Visit in accordance with MOU

Respected Sir,

As per the MOU signed with you the following students visited Richardson Leprosy Hospital, Miraj in exchange of knowledge and skills for management of Leprosy patients in November 2020 for Community Medicine.

Sr No	Name of Student	Date of Visit
1	Dr. Sharmishtha Garud. Asst Professor	20th November 2020
2	Dr Sharvankumar	20th November 2020

I also state that these are beneficial for enrichment of knowledge and skills bilaterally.

Looking forward for your cooperation and support in future

Thanking you

Dr. Rohini M Suryawanshi
Superintendent

The Leprosy Mission Trust India
healing.inclusion.dignity

Richardson Leprosy Hospital
Miraj-Sangli Highway,
Chandanwadi, Miraj - 416 410
Dist. Sangli. M.S.
Phone No.: 0233-2211213
2211708
E-mail- miraj@leprosymission.in

Date :- 05.03.2020

To,
The Registrar
Krishna Institute of Medical Sciences
"Deemed to be university" Karad

Subject: - Students Visit in accordance with MOU

Respected Sir,

As per the MOU signed with you the following students visited Richardson Leprosy Hospital, Miraj in exchange of knowledge and skills for management of Leprosy patients during the period from Jan to March 2020 for Tropical Medicine Elective Programme.

Sr No	Name of Student	Date of Visit
1	Mr. Paul Michael Robben	15.01.2020
2	Mr. John Shumar Nicholad	15.01.2020
3	Mr. John Blickle Griffis	05.03.2020
4	Ms. Lisa Conte Maria	05.03.2020
5	Ms. Casey Erwin	05.03.2020
6	Ms. Ama Winland	05.03.2020

I also state that these were beneficial for enrichment of knowledge and skills bilaterally.

Looking forward for your cooperation and support in future

Thanking you

Dr. Rohini M Suryawanshi
Superintendent

Richardson Leprosy Hospital,
Miraj, Sangli Dist.

The Leprosy Mission Trust India

healing.inclusion.dignity

Richardson Leprosy Hospital
Miraj-Sangli Highway,
Chandanwadi, Miraj - 416 410
Dist. Sangli. M.S.
Phone No.: 0233-2211213
2211708
E-mail- miraj@leprosymission.in

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY, KARAD

HONORARIUM CHARGES

Subject : - Visit Charges for Jan & March 2020

Name of the External Subject Expert: - Tropical Medicine Elective Program & Orientation in Leprosy

Place : - Richardson Leprosy Hospital Miraj

Mobile No : - Dr. Rohini Suryawanshi, Mb No 9881626940

Total Amount : - Rs 30,000/- (Rs 5000/- per student)

Bank Details:-

Name of the Bank : - State Bank of India

Bank Account No : - 10846779793

Branch : - Wanless Hospital branch

Bank IFSC Code No : - SBIN 000 3461

Bank Address and Phone No : - Wanless Hospital Branch Pandharpur Road Miraj

Signature.....

Name of the Expert..Dr. Rohini M. Suryawanshi

Superintendent
Richardson Leprosy Hospital
Miraj, Sangli Dist.
Pin 416 410

The Leprosy Mission Trust India
healing.inclusion.dignity

Richardson Leprosy Hospital
Miraj-Sangli Highway,
Chandanwadi, Miraj - 416 410
Dist. Sangli. M.S.
Phone No.: 0233-2211213
2211708
E-mail- miraj@leprosymission.in

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY, KARAD

HONORARIUM CHARGES

Subject : - Visit Charges for Nov 2020

Name of the External Subject Expert: - Physiotherapy & community Medicines & Orientation in Leprosy

Place : - Richardson Leprosy Hospital Miraj

Mobile No : - Dr. Rohini Suryawanshi, Mb No 9881626940

Total Amount : - Rs 15,000/- (Rs 5000/- per student)

Bank Details:-

Name of the Bank : - State Bank of India

Bank Account No : - 10846779793

Branch : - Wanless Hospital branch

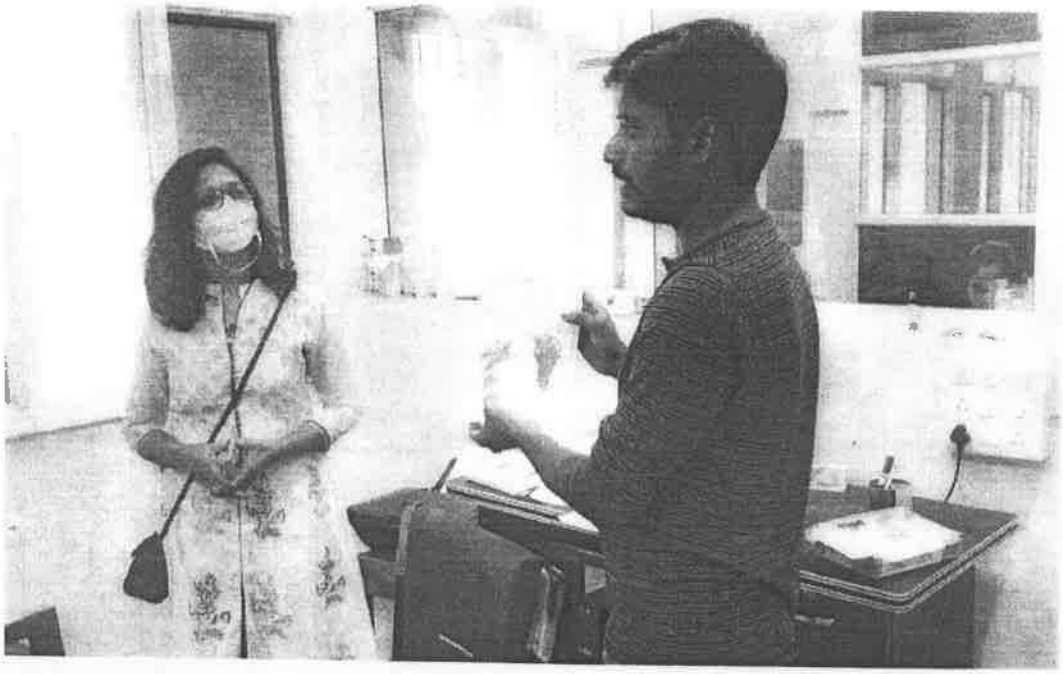
Bank IFSC Code No : - SBIN 000 3461

Bank Address and Phone No : - Wanless Hospital Branch Pandharpur Road Miraj

Signature.....

Name of the Expert. Dr. Rohini M. Suryawanshi

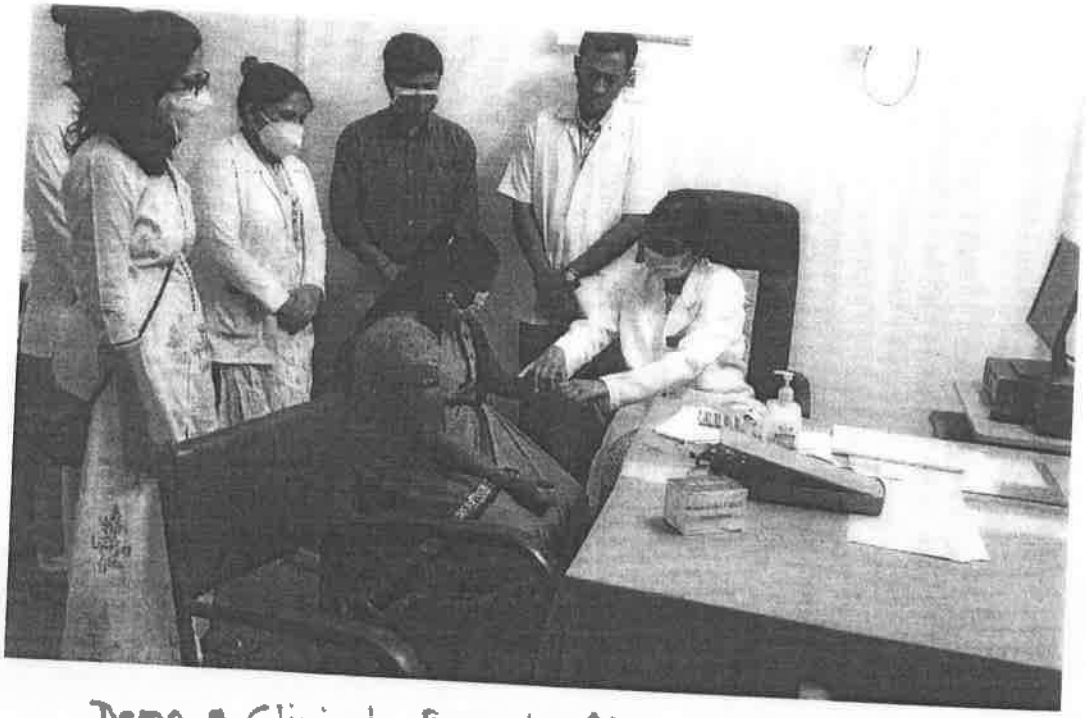
Richardson Leprosy Hospital,
Miraj 416 410



Demonstration

Rehabilitation Service

The Organization



Demo. of Clinical Examination

YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

MEMORANDUM OF UNDERSTANDING

BETWEEN

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY",

KARAD, DIST: SATARA, MAHARASHTRA - 415539

AND

YENEPOYA (DEEMED TO BE UNIVERSITY)

UNIVERSITY ROAD, DERALAKATTE, MANGALORE, KARNATAKA - 575018

भारतीय गैर न्यायिक

एक सौ रुपये Rs. 100

रु. 100 ONE HUNDRED RUPEES

सत्यमेव जयते

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA ◑ 2019 ◑ VK 007160

जोडपत्र १ व २ /Annexure 1 & 2

मुद्रांक घेणारे कारण-
Reason of sale stamps and Amount
मुद्रांक विक्रेत्याचे नाव व पत्ता -
Stamp Purchasers Name
खरेदी करणाऱ्याचे नाव व पत्ता
Stamp Purchaser's Name & Address
मुद्रांक विक्री नोंदवही क्रमांक
Serial No of Register
मुद्रांक विक्रय प्राधिकारी सही
Stamp Purchasers Sign.
मुद्रांक विक्रेता-श्री. अशोक शिवाजी कुर्‍हेकरी
परवाना क्र.२३०३०२०/२००१ दु.वि.विक्रय-दु.नि.कार्या.क्र.१
तहसिल कार्या. आवार कराड

ज्या कारणासाठी जास्तीचे मुद्रांक खरेदी केला तसेच कारणासाठी मुद्रांक खरेदी केल्यापासून ६ महिन्यात वापरले नसल्यास दंडनीय आहे.

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

SUB. TREASURY OFFICE KARAD
28 AUG 2019
SUB TREASURY OFFICER KARAD

YENEPOYA
(DEEMED TO BE UNIVERSITY)
Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

THIS MEMORANDUM OF UNDERSTANDING (hereinafter referred to as "MOU") is made on Monday, 14th October, 2019 at Karad

BETWEEN

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA

AND

YENEPOYA (DEEMED TO BE UNIVERSITY)
UNIVERSITY ROAD, DERALAKATTE, MANGALORE, KARNATAKA

Krishna Institute of Medical Sciences "Deemed To Be University"

University Road, Deralakatte
YENEPOYA
(Deemed to be University)

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY", KARAD, MAHARASHTRA, INDIA

A "Deemed To be University" declared U/s 3 of UGC Act, 1956 vide notification No.F-9-15/2001-U,3 Of the Ministry Of Human Resource Development-Govt. of India, Accredited by NAAC with 'A' Grade (CGPA:3.20 on 4 point scale), An ISO 9001:2015 certified university, Malkapur, Karad, Dist. Satara, 415539, Maharashtra, India, hereinafter referred to as "KIMSDU" represented by Dr. M. V. Ghorpade, aged 52 years, working as Registrar (which expression shall unless the meaning or context otherwise requires shall mean and include its successors and assigns) of the **First Party;**

AND

YENEPOYA (DEEMED TO BE UNIVERSITY)

UNIVERSITY ROAD, DERALAKATTE, MANGALORE, KARNATAKA

A deemed to be university declared U/s 3 of UGC Act, 1956 vide notification No., F. 9-11/2007-U.3(A). of the Ministry of Human Resource Development-Govt. of India, Accredited by NAAC with 'A' Grade (CGPA:3.14 on 4 point scale) having its registered office at YMDC campus, Deralakatte, University Road, Mangalore hereinafter referred to as "Yenepoya" represented by, Dr. K. S. Gangadhara Somayaji , Registrar, Yenepoya (Deemed To Be University) (which expression shall unless the meaning or context otherwise requires shall mean and include its successors and assigns) of the **Other Party**;

"KIMSDU" and "YENEPOYA" are hereinafter also referred to individually as "Party" depending on reference and collectively as "Parties".

WHEREAS, it is the objective of the KIMSDU to disseminate, create and preserve knowledge and understanding by teaching, research, extension and service and by effective demonstration and influence of its corporate life on society;

University Road, Deralakatte * YENEPOYA (Deemed to be University) * MANGALORE

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

AND WHEREAS, the KIMSDU has power to co-operate or collaborate with any other University, institution, authority or organization for research and advisory services and for such purposes to enter into appropriate arrangement with other Universities, institutions, authorities or organizations to conduct certain courses as the situation may demand;

AND WHEREAS, the KIMSDU has power to provide for the training and quality improvement of teachers and non-teaching employees;

AND WHEREAS, to achieve this goal and objective, it is decided to collaborate with the renowned and reputed Universities, institutions and organizations of health sciences for training of faculties and students of affiliated health sciences colleges / recognized institutes by means of teachers (faculty) and students exchange programmes, research programmes and conferences etc.;

AND WHEREAS, the KIMSDU and YENEPOYA are discussing a potential for association between themselves for establishing collaboration in the field of training of faculty and students by adopting and designing their exchange programme;

AND WHEREAS, the goal of this collaboration is to foster co- operation and facilitate advancement of knowledge, skill and ideas for betterment of health of the society and common man;

AND WHEREAS, it is agreed by mutual discussion between KIMSDU and YENEPOYA to establish a formal collaboration;

AND WHEREAS, the parties hereto agreed that detailed terms and conditions guiding the activities identified above shall be designed and formulated separately through mutual discussion;

AND WHEREAS, the parties, hereto are desirous to enter into a formal Memorandum of Understanding (MoU) of collaboration, in writing;

University Road, Deralakatte * YENEPOYA (Deemed to be University) * MANGALORE - 575 018

Kasaba Institute of Medical Sciences "Deemed To Be University" Kasaba

NOW THEREFORE, THIS MEMORANDUM OF UNDERSTANDING WITNESSETH AND IT IS HEREBY AGREED BY AND AMONG THE PARTIES HERETO, AS UNDER:

1. **OBJECTIVES:-**

I. The Primary purpose of this MoU is to build academic research capacity and quality enhancement activities to promote mutual understanding between the Universities. The MoU shall formally set out the terms of co-operative relationship between the parties, establish their respective roles, and facilitate the function of each party in relation to collaborative research.

II. KIMSDU and YENEPOYA will encourage direct contact and cooperation between faculty members, staff and students of the KIMSDU, affiliated colleges and recognized institutions of the KIMSDU and YENEPOYA;

III. Both Universities agree to develop collaborative activities in academic areas of mutual interest, and quality enhancement activities as equal partners with reciprocity. All educational events are expected to reflect the faculty member's area of research and expertise.

IV. The development and implementation of specific activities based on this MoU shall be negotiated and agreed between individual faculty members through the Deans or Heads of Department.

V. To Exchange of invitations of lectures, seminars, workshops, conferences, symposia and other academic programmes;

VI. To Exchange of faculty members and students for study and teaching and research;

VII. To start joint research activities, publications, library and data exchange;

VIII. Any other specific academic activity related with study, teaching, research and quality enhancement activities designed and mutually agreed between the parties.

University Road, Deralakatte * YENEPOYA (Deemed to be University) * MANGALORE - 575 018

Krishna Institute of Medical Sciences * Deemed To Be University * Karad

IX. This MOU is agreed on the basis of cooperation between the Universities and includes, but is not limited to the following options

a) Exchange of faculty members and research scholars between Universities

b) Exchange of students based on the projects and research needs

c) Jointly apply for research funds to conduct collaborative research projects

d) Conducting colloquiums

e) Exchange of academic/research information and related materials to facilitate joint publications by collaborating faculty members

f) Promoting any related academic activities based on mutual agreement

g) Joint Activities related to quality enhancement, mutual exchange of materials and training of staff in quality enhancement activities

2. Both the parties will enter into separate and specific written agreement to govern any specific activity to be initiated to achieve the objectives mentioned above. The terms and conditions of such agreement will be determined separately by mutual discussion and consent of both the parties. Such agreement shall come into effect from the date of signing of this MoU.

3. **STATUS:-**

This MoU is not intended to be legally binding and no legal rights or obligations shall arise as a result of its terms except that clause 4 to 9 below shall be binding. It is the intention that a formal, document will be entered between the parties to govern arrangements in respect of each specific activity mentioned in the objectives of this MoU.

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Krishna Institution of Medical Sciences "Deemed To Be University" Karad

4. **COSTS:-**

Each party shall bear its own costs and expenses in fulfilling this MoU.

5. **INFORMATION SHARING AND CONFIDENTIALITY:-**

a) Each party shall keep secret all confidential information belonging to the other party, which is shared between them, and all shared information shall only be used for the purpose of fulfilling this MoU. This obligation to keep secret will not apply to information that a party is required by law or a competent court or other appropriate authority to disclose. However, this obligation will be continued after termination of MoU.

b) Each party will ensure that any publicity is accurate and not misleading and does not contain reference to the other party (including name and logo) without its prior written consent.

6. **INTELLECTUAL PROPERTY:-**

Unless and otherwise agreed in writing in relation to specific project or academic activities, all intellectual property belonging to a party providing it to other party, on or after the date of this MoU shall remain the property of the party providing it. Any intellectual property rights created in the course of activities anticipated by this MoU shall vest in the party which or whose employee created them.

Any intellectual property created jointly by both the parties in collaboration will be jointly owned by both the parties. The ratio of ownerships, intellectual property management, prosecution costs, benefit sharing models will be determined for the specific activity and defined in the activity specific agreement. In the absence of any such specific agreements, both parties will jointly own the IP created in equal ratio, will equally share the a) costs incurred for the intellectual property maintenance and prosecution, and b) benefitsrealized from the commercialization of the intellectual property.

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Krishna Institute of Medical Sciences "Deemed To Be University", Karad

7. **REGULATORY:-**

a. Neither party will treat any person or group of person less favorably than other or make any discrimination on the grounds of race, religion, caste, ethnic belief, sex, disability, nationality color or marital status.

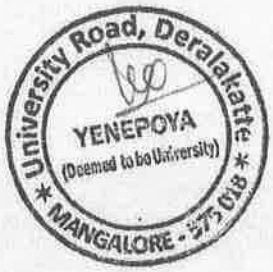
b. Each party will comply with all applicable laws and regulations of INDIA. Where there is difference of provision is arises in any law or regulation of the country of any party, such difference shall be settled amicably by mutual discussion and necessary amendment to that effect shall be carried out separately.

8. **TERM, EFFECTIVE DATE AND TERMINATION OF AGREEMENT:-**

Both universities agree to carry out the above mentioned activities in accordance with laws and regulations of respective countries after full consultation and approvals.

The term of this agreement shall be valid for a period of three years commencing from the date of signature hereof. This agreement can be extended for further terms on mutual agreement. This agreement may be terminated by giving 6 months prior notice from either parties.

This MoU shall become effective from the date of its signing by the representatives of both the parties and shall be remained inforce for the period of THREE years from the date of its signing. Either party shall terminate this MoU by serving written notice on the registered address of other party or it shall be treated as terminated after the notice period or after completion of any undergoing collaborative programme, as the case may be. The notice period shall not be less than 30 clear days. In such situation both the parties shall act reasonably, that any action or omission of any party shall not affects the good reputation of other party.



9. Any doubt, difference or dispute arises with respect to any term mentioned in this MoU shall be settled by mutual discussion between the signatories or authorized representatives of both the parties, however if such doubt, difference or dispute is not resolved amicably the MoU shall be treated as terminated with the consent of both the parties. This MoU shall be governed by and construed in accordance with the laws of INDIA and the Indian courts shall have exclusive jurisdiction.

The present agreement is signed in English, two (2) originals, all text being equally valid.

IN WITNESS WHEREOF THE PARTIES HERETO HAVE HEREUNDER SET AND SUBSCRIBED THEIR RESPECTIVE HANDS AND SEAL ON THE DAY AND THE YEAR FIRST HEREINABOVE WRITTEN.

Signed by:

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Registrar
Krishna Institute of Medical Sciences "Deemed to be University", KARAD

Date: 14/10/2019

Place: Karad, Maharashtra

Witnesses:

Signature: .....

Name: Dr A R Rishud

Address: Director Research
KIMSDU Karad

.....

.....

University Road, Deralakatte
YENEPOYA
(Deemed to be University)
MANGALORE - 575 018

Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018

Registrar
Yenepoya (Deemed To Be University)
MANGALORE

Date: 14/10/2019

Place: MANGALORE

Signature: .....

Name: Dr. Arun. A.b

Address: Dy. Director (QAC)
Yenepoya (Deemed to be University), Mangalore-18

KIMS
UNIVERSITY

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE" UNIVERSITY, KARAD

(Declared under Section 3 of the UGC Act, 1956 vide Notification No. F.9-15/2001-U.3 of the MHRD, Govt. of India)
Karad, Dist. Satara (Maharashtra State) Pin: 415 110
Tel: 02164 -241555-58 Fax: 02164-242170/243272/241410
Website: www.kimsuniversity.in E-mail - contact@kimsuniversity.in

Dr. P. M. Durgawale.
Director of Sports & Cultural Events,
Krishna Institute of Medical Sciences University, Karad
Tel: 02164-303,
E-mail: drpdurgawale2007@gmail.com

COMM.MED./KIMS/405/19. Date:- 09/10/2019.

To,
The Registrar,
Krishna Institute of Medical Sciences
Deemed University,
Karad.

Sub.:- Report of Workshop Conducted for Faculties of Medical & Nursing

Respected Sir,

I Must Thank You For permission granted to conduct workshop for teachers in medical & nursing faculties on "Quality assured data Capture using Epi Collect" on 30th Sept. 2019 between 8.30 am to 5.00 pm.

Following were resource persons from Yenepoya Medical Collage Deemed University Mangalore viz Dr. Nirgude, Dr.(Mrs.)Naik, Dr. Akshay & Dr. Prachet.

It Was So Useful that all participants (Total-20) appreciated which was also reflected in pre & post test. It was increased from 28% to 79% gain in knowledge.

Thanking you.

Yours Sincerely,

Dr. P. M. Durgawale
Prof. & Head,
Dept. of Community Medicine.

Professor & Head
Dept. of Community Medicine
Krishna Institute of Medical Sciences, D.U.
KARAD.

CC: The Director of Research, KIMSDU.
The Dean , KIMS , Karad.

Report of Work shop Organized

Name of the Institution :- KIMS , Karad.

Name of the Department :- Community Medicine.

Date	Activity Work shop/ Conferences /CME	Title of the Activity	Resources persons with designation		Topics	Types of methods used Lectures/ Hands on training / Any others	No of participates Category (U.G./ P.G./ faculty)	Outcome of Activity		
			External	In House/ (Internal)				Pre Test Knowledge in (%)	Post test Knowledge in (%)	Knowledge Gain in (%) Percentage
30/09/19	Workshop	"Quality assured Data Capture using Epi collect" on 30th	√	-	*Importance of data capture *Course overview , Introduction to software and installation *Data Documentation sheet *Mapping and managing users *Entry in mobile app , sync and exporting of data *Multisite data capture	Lecture & Hands on training	28 faculty (18-Medical 10-Nursing)	28 %	79 %	51 %

					*Multisite data capture *Importing a project					

Professor & Head
Dept. of Community Medicine
Krishna Institute of Medical Sciences, D.U.
KARAD.

महाराष्ट्र MAHARASHTRA © 2019 © WN 268003

SUB. TREASURY OFFICER KARAD
09 SEP 2020
SUB TREASURY OFFICER KARAD

जोडपत्र १ व २ /Annexure-I & II

मुद्रांक विक्री कारण-
Reason of sale stamps and Amount
मुद्रांक विकत घेणाराचे नांव व पत्ता-
Stamp Purchasers Name
हस्ते असल्यास त्याचे नांव व पत्ता
Stamp Purchasers Name
मुद्रांक विक्री नोंदवही नंबर
Serial No and Date
मुद्रांक विकत घेणाराची सही
Stamp Purchasers Sign.

करारपत्र
आनंद रघुनाथ कुलकर्णी
१७६१ दिनांक २८/९/२०२०

मुद्रांक विक्रेता-श्री. गणेश रामचंद्र गोहिते
परवाना क्र.२१०३००३/९६ मु.वि.टिकाण-दु.नि.कार्या.क्र.१
स्वाक्षरी, आधार सबाड

मुद्रांक विक्रेत्याची सही

सदर कागदी मुद्रांक केवळ स्वतः करण्यासाठी मुद्रांक खरेदी केल्यापासून ६ महिन्यात वापरणे बंधनकारक आहे.

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Memorandum of Understanding
between
Krishna Institute of Medical Sciences(Deemed to be University),Karad, India
and
Chetan Dattaji Gaikwad Institute of Management Studies, Pune, India
(Affiliated to the Savitribai Phule Pune University)

In order to extend the effective and mutually beneficial cooperation and develop academic and cultural exchange in education, research and other areas, Krishna Institute Of Medical Sciences, Karad Maharashtra, India and Chetan Dattaji Gaikwad Institute of Management Studies,(Affiliated to Savitri bai Phule Pune University),Pune, Maharashtra, India hereby agree to cooperate toward the

The areas of cooperation will include any program offered at either university / Institute, which is felt to promote the above-mentioned goals. However, any specific program shall be subject to mutual consent, availability of funds and the approval of both universities/Institutes. All other Academic activities can also be undertaken with other International collaborator of each of Institution after the prior consent of each side. Such programs may include:

a) exchange of faculty members
b) exchange of students
c) exchange of publications
d) joint research projects
e) joint conferences
f) joint teaching projects
g) joint cultural programs.

The terms of such mutual assistance and cooperation shall be discussed and agreed upon in writing by the responsible authority of each university / Institute prior to the initiation of any particular program or activity.

This agreement shall take effect upon approval by both parties and shall remain in effect for an initial period of three years. There after it shall automatically be renewed annually with mutual understanding. However, either university / Institute may terminate the agreement in writing at least ten months prior to the beginning of an academic.

Chetan Dattaji Gaikwad Institute of Management Studies, (Affiliated to Savitribai Phule Pune University)

Dr.Dilip Puranik
Hon. President R.S.M.
Pune, date

President
Rashtriya Shikshan Mandal
25, Karve Road, Pune-411 004.

Rashtriya Shikshan Mandal * 25 Karve Road, Pune-411004 *

Dr.Vaishali Rajsinh Mohite
Dean/Principal
Krishna Institute of Nursing Sciences, Karad

Dr. Prof. V. R. Mohite
M.Sc. (N) Ph.D. D.Litt.
Dean/Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
Deemed University, Karad

KRISHNA INSTITUTE OF NURSING SCIENCES KARAD
KIMS. U.
KARAD

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY'S"
KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD
Email: krishnanursing9999@gmail.com

JOB OPPORTUNITIES FOR NURSING PROFESSIONALS IN GERMANY

COORDINATOR
Dr. Mr. Atul Kapdi
Academic Director
Chetan Dattaji Gaikwad
Institute of Management Studies, Pune

PRESENTER
MR. Maximilian Maeumbaed
German Health Care Expert& Managing Partner
Lutherian University Of Bavaria, Germany

COORDINATOR
DR. (Mrs.) Jyoti Avinash Salunkhe
Dean (Academics)
Krishna Institute of Nursing Sciences, Karad

DR. (Mrs.) Vaishali Rajsinh Mohite
Dean
Krishna Institute of Nursing Sciences, Karad

Virtual Platform link:
https://zoom.us/j/94694147264?pwd=dzgvR3J3ZnhZRDlicGRCL0doTkFRZz09

Meeting ID: 946 9414 7264 Pass code: 482504
Date:- 30/10/2020 Time:- 01.30pm to 2.30pm

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY'S

KRISHNA INSTITUTE OF NURSING SCIENCES KARAD

REPORT OF

JOB OPPORTUNITIES FOR NURSING PROFESSIONALS IN GERMANY

DATE: 30/10/2020

The Job Opportunities for Nursing Professionals in Germany programe was organized by Krishna Institute of Nursing Sciences, Karad. under the able guidance of DR.(Mrs.) Vaishali R. Mohite, Dean, Krishna Institute of Nursing Sciences, Karad. Programme coordinator was DR.(Mrs.) Jyoti A. Salunkhe, Dean (Academics), Krishna Institute of Nursing Sciences, Karad. Presenter of the program was Mr. Maximilian Maeumbaed, German Health Care Expert & Managing Partner (Mediatos GmBH, Germany) Lutheran University of Bavaria (Germany) and Coordinator was Dr. Mr. AtulKapdi, Academic Director and International Program Coordinator, ChetanDattaji Gaikwad Institute of Management Studies (affiliated to the Savitribai Phule University), Pune.

The programme was scheduled on zoom virtual platform on 30/10/2020 at 1 pm and started at 1:30 pm. 300 Nursing students and all Nursing Faculty were participated in the programme. The programme was started by welcome and greetings from DR. (Mrs.) Vaishali R. Mohite, Dean, Krishna Institute of Nursing Sciences, Karad to Mr. Maximilian Maeumbaed sir and Dr. Mr. AtulKapdi sir. The introduction of the coordinator and presenter was given byDR.(Mrs.) Jyoti A. Salunkhe, Dean (Academics) Krishna Institute of Nursing Sciences, Karad.

Mr. Maximilian Maeumbaed sir was introduced the agenda of the programe and following points were disscussed.

- **Germany Location, Society And Culture.**

  - Religion- Arround 53 % Christians, Ca. 5% Muslims And 38% Without Religion
  - Symbolism- The Eagle is an old symbol of the Holy Roman Epire, with has been shared with Austria And Germny Since The late 19th Centure.
  - Flag colours are Black, Red And Gold.
  - Federal republic with 16 states.
  - 83 million citizens (berlin 3.6 million/ 892 km2)

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

- Parlimentary democracy.
- Classical composers like bethovn and bach.

- **Work In Germany**
  - Resons for Germany
  - Resons for support
  - Benifits
  - Step-by-step map

And also explanined about **Step-By-Step Guide For Nurses**

- ✓ Experienced professional – check that all documents for **recognition and visa application** are ready.
- ✓ Atleast **12-24 months of full-time work experience** in an acute hospital.
- ✓ Reach your **B2 level** now if you haven't made it yet.
- ✓ Arrange your meeting at the **embassy.**
- ✓ Prepare for your **departute.**

Recent graduate-

- ✓ Start or reinforce your career in an acute hospital.
  (Goal : 12 months work experience)
- ✓ Focus on langauge acquisition
  (Goal : B2 - level)
- ✓ Request yourr diplomas and certificates from the relevant authorities.

After the programme Mr. Maximilian Maeumbaed sir students were participated in the discussion, at the end Mr. Maximilian Maeumbaed sir and Dr. Mr. AtulKapdi sir were cleared their doubts.

The programe was ended with vote of thank byDR.(Mrs.) Jyoti A. Salunkhe, Dean (Academics), Krishna Institute of Nursing Sciences, Karad.at 4:30 pm

INSTITUTE OF NURSING SCIENCES KRISHNA KIMSDU KARAD

DR. (Mrs.) Vaishali R. Mohite
Dean
Krishna Institute of Nursing
Sciences, Karad

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

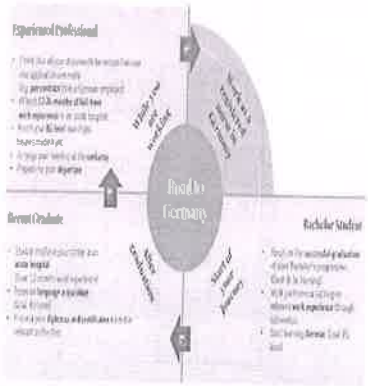
Germany

- Federal Republic with 16 states
- 83 millipn Citizens (Berlin 3.6 million / 892km2)
- Parliamentary Democracy

German Culture

- Religion
  - Around 53 % Christians, ca. 5% Muslims and 36% without religion
- Symbolism
  - The Eagle is an old symbol of the Holy Roman Empire, which has been shared with Austria and Germany since the late 19th century
  - Flag colours are black, red and

Step-By-Step Guide for Nurses



Wage structure

- Wages in the nursing sector are usually based on the collective agreement for the public sector. A fully recognised nurse is at the beginning classified in pay group P7 level 2.

P 7	2	3	4	5	6
Grundgehalt	2830.56 €	3003.48 €	3269.54 €	3402.54 €	3539.56 €
Brutto gesamt	2830.56 €	3003.48 €	3269.54 €	3402.54 €	3539.56 €
Netto gesamt	1806.77 €	1894.51 €	2027.21 €	2092.52 €	2159.36 €
INR (monthly)	155.206	157.782	173.155	180.430	186.695

1€ = 85 INR

- Depending on how often you work on weekends, holidays or night shifts, the basic amount can be increased by 200€ to 700€ before tax.

Thanks.

Questions ?

Mediatos.

info@mediatos.eu

Managing Partner & Health Care Expert

Mediatos GmbH

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

KRISHNA INSTITUTE OF MEDICAL SCIENCES DEEMED TO BE UNIVERSITY'S
KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD.
Dist. Satara (Maharashtra State) Pin : 415110
Tel : 02164-241555-8 Fax : 02164-243275 / 242170
Declared U/s 3 of UGC ACT, 1956 vide Notification no. F. 9-15/2001-U.3 of the Ministry of Human Resource Development, Govt. of India.
Website : www.kimskarad.in Email : contact@kimsuniversity.in
Accredited by NAAC with 'A' Grade An ISO 9001:2015 Certified University

Ref No. : KIMSDU/KINS/ 414 /2020 Date : 29/10/2020

CIRCULAR

Krishna Institute of Medical Sciences Deemed To Be University's Krishna Institute of Nursing Sciences, Karad has organized **Job Opportunities for Nursing Professionals in Germany** in collaboration with Chetan Dattaji Gaikwad Institute of Management Studies, Pune (Affiliated to the Savitribai Phule University, Pune) and Lutheran University of Bavaria (Germany) on virtual platform

Presenter:- MR. Maximilian Macumbaed, German Health Care Experts Managing Partner, Lutherian University Of Bavaria, Germany

All nursing students are requested to join virtually on following link

https://zoom.us/j/94694147264?pwd=dzgvR3J3ZnhZRDlIeGRCL0GoTkFHZz09

Meeting ID: 946 9414 7264
Date:- 30/10/2020

Pass code: 482504
Time:- 01.30pm to 2.30pm

You are requested to join at 01:15pm.

Kindly keep your mike on mute mode when you are not talking in programme.

KRISHNA INSTITUTE OF NURSING SCIENCES KARAD KIMS. U. KARAD

DR. (Mrs.) Vaishali R. Mohite
Dean
Krishna Institute of Nursing Sciences,
Karad.

CC: Hon'ble Chancellor, KIMSDU
Hon'ble Pro-Chancellor, KIMSDU
Registrar, KIMSDU
Executive Director, KIMSDU
Director of Research, KIMSDU
Additional Director of Research, KIMSDU
Medical Director, KH
Director of Nursing Services, KH
Placement Cell, KIMSDU
Student Support & Progression Cell, KIMSDU.

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

MEMORADUM OF UNDERSTANDING

BETWEEN

BULE HORA UNIVERSITY (BHU)

AND

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY"

KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD (KIMSU, KINS)

Contact Information

BULE HORA UNIVERSITY (BHU)

P.O. Box 144,
Telephone: +251- 464430185
Fax: +.251- 464430355

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE UNIVERSITY"
KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD (KIMSU, KINS)
Maharashtra, INDIA
Telephone :-
02164 – 241555/6/7/8 (Ext : 462
Fax Number : 02164 - 24327

September - 2020

Bule Hora, Ethiopia

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

Preamble

This memorandum of understanding (MoU), made and entered into as of September, 2020, by and between **Bule Hora University**, a Public higher education institute (hereinafter referred to as (BHU), with its principal place of business at Bule Hora, Ethiopia of the one part;

AND

Krishna Institute of Medical Sciences "Deemed To Be University", Krishna Institute of Nursing Sciences, Malakapur, Karad , Maharashtra, India.

Whereas, Bule Hora University (BHU) is founded in 2008, Bule Hora University is a public higher education institution located in the medium city of Bule Hora town, Oromia Region, Ethiopia, East Africa. Officially accredited and/or recognized by the Ministry of Education, Ethiopia, University has started functioning in the campus of Bule Hora College of Teacher Education with a total of 243 regular and 116-weekend degree students and also within 72 academic staff and 164 admin staff in 4 faculties and 6 Departments in the 2011/12 academic year, and transferred to its own campus in September 2012.

Currently, Bule Hora University has 200 programs (100 undergraduates, 83 Masters and 17 PhD) with strength of total 17,120 students (10,542 regular, 6578 extension, 16,368 undergraduates, 752 postgraduates). We have highly talented 1153 academic staff (both local as well as expatriate staff mainly from India) and 3239 admin staff. Currently we are running eight colleges, namely College of Natural and Computational Sciences, College of Agriculture, College of Engineering and Technology, College of Social Science and Humanities, College of Business and Economics, College of Health and Medical Science, College of Informatics, College of Educational and Behavioural. We are also running one school and one institute namely School of Law and Institute of Gada and Cultural Study.

Bule Hora University (BHU) was established to play its part in the national efforts of bringing quality and excellence in teaching-learning, research, community services, administrative functions/good governance, connecting the development of cultural and natural resources with technology and its applications. Enhancing the quality level of university has been the main target of Bule Hora University (BHU) for achieving status of world Class University. The university believes that collaboration can enhance the quality of research and teaching through an exposure to a new perspective and experience of research

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

and teaching. In doing so, Bule Hora University (BHU) is developing international collaboration with many universities.

Whereas: Krishna Institute of Medical Sciences "Deemed To Be University" (KIMSDU) a place, where a thought of serving the society sowed in 1982, has grown in a sprawling campus spanning 55.24 acres of tranquility. Equipped with the best that technology has to offer, Krishna Institute of Medical Sciences "Deemed To Be University" strongly believes in the thought that lead to its inception, namely "social responsibility".

Our founder Late Shri. Jaywantraoji Bhosale's foray into education started way back in 1964 with the establishment of Society for Promotion of Education in Farmers. In 1984 where medical education was the forte of government run institutions, Late Shri Jaywantraoji Bhosale, with his continuous efforts persuaded the then Government of Maharashtra for private participation in the field of medical education and laid the foundation for what today is Krishna Institute of Medical Sciences "Deemed To Be University".

Acquiring the University status in 2005, Krishna Institute of Medical Sciences "Deemed To Be University" has spread its wings to explore the diverse fields in medicine through its constituent faculties which include Medical, Dental, Physiotherapy, Nursing and Allied Sciences (Microbiology, Biotechnology, Krishna Institute of Pharmacy).

The staff at each college comes with a wealth of knowledge, experience and most prominently the desire to inculcate values in each student. Krishna Institute of Medical Sciences "Deemed To Be University" is not only a focal point for education but also a hub for research activities. Research is an integral part of our education system, and that's what we indoctrinate in our students. If you ask us, what sets Krishna Institute of Medical Sciences "Deemed To Be University" apart? Our humble answer would be continual work towards creation of curriculum that will help our students have better perspective on the novel concepts and trends in medicine and to ensure that every student looks at research as a part of his/her DNA and not just a part of the syllabus.

Whereas: BHU and KIMSDU, KINS interested and willing to forge partnership so as to strengthen/complement one another in their efforts to deliver quality services in their areas of mandates and common interventions.

Now therefore, the contracting parties have adopted this Memorandum of Understanding with the approval of their respective executive bodies to lay ground for effective institutional cooperation as follows:

Article: 1

Areas of Collaboration

Cooperation under this Memorandum of Understanding (MoU) shall include, inter alia, and as appropriate, the following:

- Joint teaching arrangements for postgraduate as well as PhD Programs
- Joint supervision of postgraduate projects and PhD research
- Dual credential programs
- Student and faculty exchange visit
- Exchange academic information, publications and best practices.
- Assisting and facilitating Publications in JKIMSU and other reputed international journals.
- Both universities and the constituent Unit may allow/provide faculties to visiting scholars, to participate as adjunct professors if the need arises from either party
- Library and documentation exchange
- Exchange of pedagogical material
- Joint application for funding including development funds and research grants
- Participation in joint academic seminars and workshops
- Development and implementation of other joint activities addressing issues of mutual interest, designed to foster research and demand driven community service, technology transfer and education capacities in the locality.
- Any other collaborative efforts as may be determined by both parties.

Krishna Institute of Medical Sciences "Deemed To Be University" Karad ★

Article: 2

Joint work program

2.1 The two parties hereto undertake to jointly solicit for funds, research grants, contributions, subscriptions and such related funds for the purpose of realizing any or all the objectives of the collaboration.

2.2. The aforementioned list of initial joint activities is not exhaustive and new activities addressing issues of mutual relevance may be proposed by the Partners whenever appropriate. Descriptions of new activities shall specify the respective responsibilities and financial obligations of the Parties and they will specify any additional sources of funds, as well as respective staff responsibilities. For implementing such joint activities, the Parties may agree on cooperation with other public or private organizations, including donors.

2.3 Both parties shall make rules governing the use of their respective facilities including laboratories, library and workshops where such facilities are used to conduct and of the function of this collaboration as specified in 'agreements of collaboration' regarding each individual project.

Article: 3

Exchange of information

3.1 The Parties shall regularly exchange information and seek complementarity and coordination regarding their relevant activities and programs;

3.2 The Parties may invite each other to participate in activities, working groups, conferences and seminars that are not directly part of this MoU but that may be relevant to it, in conformity with respective applicable rules.

Article: 4

Financial Obligations

4.1 All activities to be developed and implemented under this MoU will be subject to the availability of funds, either from the Parties' own resources or from donors. The Parties will engage in joint resource mobilization from governmental and non-governmental funding

sources, including (inter-)national donor organizations, private sector and philanthropic funds and non-governmental organizations, in accordance with relevant rules and procedures.

4.2 The descriptions and budgets of actions to be jointly undertaken will be part of separate activity based Agreement, which will refer to this MoU and be signed by the respective Parties involved including donors, if any, prior to the initiation of any activity.

4.3 Both institutions shall seek waiver of duty and value added tax applicable in their respective countries on any equipment and materials obtained from either country for use by students and staff participating in this collaboration. As a general rule, the title and custody of any equipment acquired in the course of the collaboration shall remain with the host institution upon the expiry of that particular project as specified in individual 'agreements of collaboration'.

Article: 5

Responsibilities- Both parties agree to:

5.1 Maintain regular communication and meet as deemed necessary in-person

5.2 Develop a plan for collaborative initiatives

5.3 Work in their area of framework to support initiatives.

Article: 6

Intellectual Property

a) Where either party has any intellectual property rights in any material that is subsequently used by the parties in connection with this MOU, then those intellectual property rights remain vested in that party.

b) Copyright of information as well as any other intellectual property rights, developed jointly by Parties shall be jointly vested in the Parties concerned. Likewise the owners and authors of research initiatives will remain with the two parties; hence, the dissemination of finding and publication will be made with equal recognition of two

institutions. Without the consent of the two organizations the data will not be used for any purpose without a prior permission of the two parties.

c) Intellectual property rights, in particular copyright on material such as information, software and designs, made available by any of the Parties to carry out the activities under this MoU shall remain with the originating Party;

d) Each party agrees to do such further things as may reasonably be required of it to give effect to the intentions of the parties regarding ownership of intellectual property rights as expressed in this clause (including, without limitation, by executing such assignments and licenses of intellectual property rights as may reasonably be required).

Article: 7

No Exclusivity

This MoU does not obligate either Party to work exclusively with the other on any project whosoever or constitute either Party an agent of the other.

Article: 8

Independence of Parties

Neither Party has the authority, either expressed or implied, to enter into any agreement, incur any obligations on behalf of, or commit the other Party in any manner whatsoever, except as is provided in this MoU.

Article: 9

Managing the Collaboration

The contact/focal section on the side of (BHU) in managing the collaboration is the Research and Community Service V/president office. The Counterpart on the side of (KIMSDU,KINS) would be Prof. Vaishali R. Mohite, Principal,Krishna Institute of Nursing Sciences.

- The counterparts shall jointly define plan for collaborative activities and the modalities of monitoring the implementation of the activities articulated in the collaborative agreement
- The focal points regularly report to their respective top management on the outcomes of the collaborative engagement.

Article: 10

Effective Date, Amendments, and Termination

This MoU shall be effective when signed by both Parties for five years and can be renewed by a written consent of the parties. This MoU may be modified by mutual consent of all the Parties, in accordance with their respective rules and regulations. Such amendments shall enter into force one month following notifications of consent by the Parties. Either party may terminate this MoU at any time upon advance written notice to the other Party with such termination becoming effective upon the date set forth in such written notice.

IN WITNESS WHEREOF, the parties hereto, each acting through their duly authorized representatives, have caused this MoU to be signed in their names and delivered as of this September, 2020.

Signatories	For and on Behalf of Bule Hora University	For and On Behalf of Krishna Institute of Medical Sciences "Deemed To Be University"
Name	Dr. Chala Wata Dereso	Dr. M. V. Ghorpade REGISTRAR Krishna Institute of Medical Sciences "Deemed To Be University", Karad
Position	President of Bule Hora University	
Signature	Chala Wata Dereso (PhD) President	
Date	30th September - 2020	30th September - 2020
Official stamp		Krishna Institute of Medical Sciences "Deemed To Be University" Karad

KRISHNA INSTITUTE OF NURSING SCIENCES
KIMSDU
KARAD

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

HOSTED BY

KRISHNA INSTITUTE OF MEDICAL SCIENCES "DEEMED TO BE" UNIVERSITY,S

KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD

Pune – Banglore National Highway Karad Dist – Satara (Maharashtra) 415 510

Email: krishnanursing9999@gmail.com

WEBINAR ON

INITIAL ASSESSMENT AND VENTILATORY MANAGEMENT IN THE TRAUMA PATIENTS

23/09/2020 At 11:00 AM to 12.15 PM

MODERATOR
Mrs. Manisha C. Gholap
Associate Professor
KINS, KARAD

DR. Mrs. Vaishali R. Mohite
Dean/Principal
KINS, KARAD

GUEST SPEAKER
Mr.GIRISH DEGAVI
Asst Professor
HEALTH SCIENCE COLLEGE ,
BULEHORA UNIVERSITY ,OROMIA, ETHIOPIA, 144

SPEAKER
Mrs. Swati Astik Ingale
Clinical Instructor
KINS, KARAD

Dean
Krishna Institute of Nursing Sciences
KIMSDU, Karad

SPEAKER
Mrs. Mayuri Vijay More
Clinical Instructor
KINS, KARAD

KRISHNA INSTITUTE OF MEDICAL SCIENCES, DEEMED TO BE UNIVERSITY

KRISHNA INSTITUTE OF NURSING SCIENCES, KARAD

REPORT OF INTERNATIONAL WEBINAR ON " INITIAL ASSESSMENT ANDVENTILATORY MANAGEMENT IN THE TRAUMA PATIENTS."

Department: Nursing

ATCN Course (Advanced Trauma Critical Care Course For Nurses.)

Topic: Initial Assessment and Ventilatory Management in the Trauma patients.

Sub topics:

Chest Trauma

Initial Assessment and Management

Airway and Ventilatory Management

Moderator:

Mrs. Manisha Gholap, Associate Professor, Krishna Institute of Nursing Sciences Karad.

Speakers:

Mr. Girish Degavi, Assistant Professor, Health Science College, Bulehora University, Oromia, Ethiopia,144.

Mrs.Swati Ingale, Clinical Instructor, Krishna Institute of Nursing Sciences Karad

Mrs. Mayuri More, Clinical Instructor, Krishna Institute of Nursing Sciences Karad

Venue: KINS

Date: 23rd September 2020

Time:11 am-12:15pm

Participants: Nursing Teachers &Nursing students

Event organized by: KINS

Program Goals:

The Advanced Trauma Care for Nurses (ATCN) course supplies its participants with a safe and reliable method for the immediate treatment of injured patients and the basic knowledge necessary to:

1. Assess a patient's condition rapidly and accurately.

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2. Resuscitate and stabilize patients according to priority.

3. Determine whether a patient's needs exceed the resources of a facility and the capability of a provider.

4. Arrange appropriately for a patient's inter hospital or intra hospital transfer

Course Objectives:

The content and skills presented in this course are designed to assist doctors in providing emergency care for trauma patients. The ATCN course provides the essential information and skills for doctors and Nurses to identify and treat life-threatening and potentially life-threatening injuries under the extreme pressures associated with the care of these patients in the fast-paced environment and anxiety of a trauma room. The ATCN course is applicable to clinicians in a variety of situations.

Objectives Of Webinar:

1. Explain the importance of prehospital and hospital preparation to facilitate rapid resuscitation of trauma patients.
2. Identify the correct sequence of priorities for the assessment of injured patients.
3. Explain the principles of the primary survey, as they apply to the assessment of an injured patient.
4. Explain the need for immediate resuscitation during the primary survey.
5. Describe the initial assessment of a multiply injured patient, using the correct sequence of priorities.

KINS has organized webinar on Initial Assessment and Ventilatory Management in the Trauma patients. Webinar was started with welcome and brief introduction of speakers by Mrs. Manisha Gholap. Three speakers were there. Webinar started with Guest Speakar Mr. Girish Degavi on Chest Trauma in that he discussed Primary and Secondary Survey with detail assessment of trauma patient. Mrs. Swati Ingale discussed the topic on Initial Assessment and Management of trauma patient. Another speaker Mrs. Mayuri More discussed the topic on Airway and ventilator management of trauma patients. They have cleared the doubts of students. The webinar end with vote of thanks by Mrs.Manisha Gholap.

Ringtone

SUMMARY

- Clinical situations in which airway compromise is likely to occur include head trauma, maxillofacial trauma, Neck and laryngeal trauma, and airway obstruction.
- Actual or impending airway obstruction should be suspected in all injured patients.
- Objective signs of airway obstruction include agitation, cyanosis, abnormal breath sounds, hoarse voice, stridor tracheal displacement, and reduced responsiveness.
- Recognition of ventilatory compromise and ensuring effective ventilation are of primary importance.
- Techniques for establishing and maintaining a patent airway include the chin-lift and jaw-thrust maneuvers, Oropharyngeal and nasopharyngeal airways, extrag and supraglottic devices,

KIMSDU IT (host)

11:07

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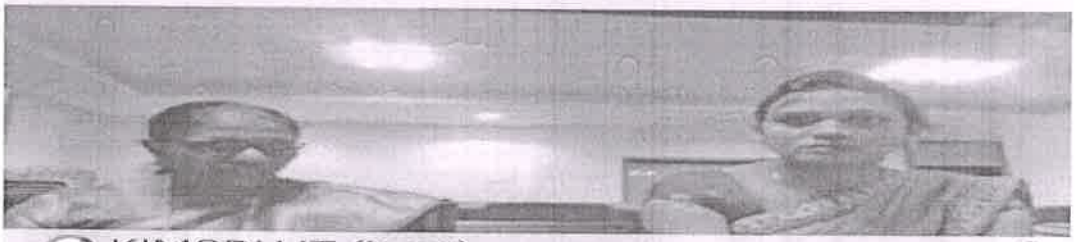
KRISHNA INSTITUTE OF NURSING SCIENCES KARAD

INTERNATIONAL WEBINAR
ON THE TOPIC
OF
INITIAL ASSESSMENT AND VENTILATORY MANAGEMENT IN THE TRAUMA PATIENT



KIMSDU IT (host)

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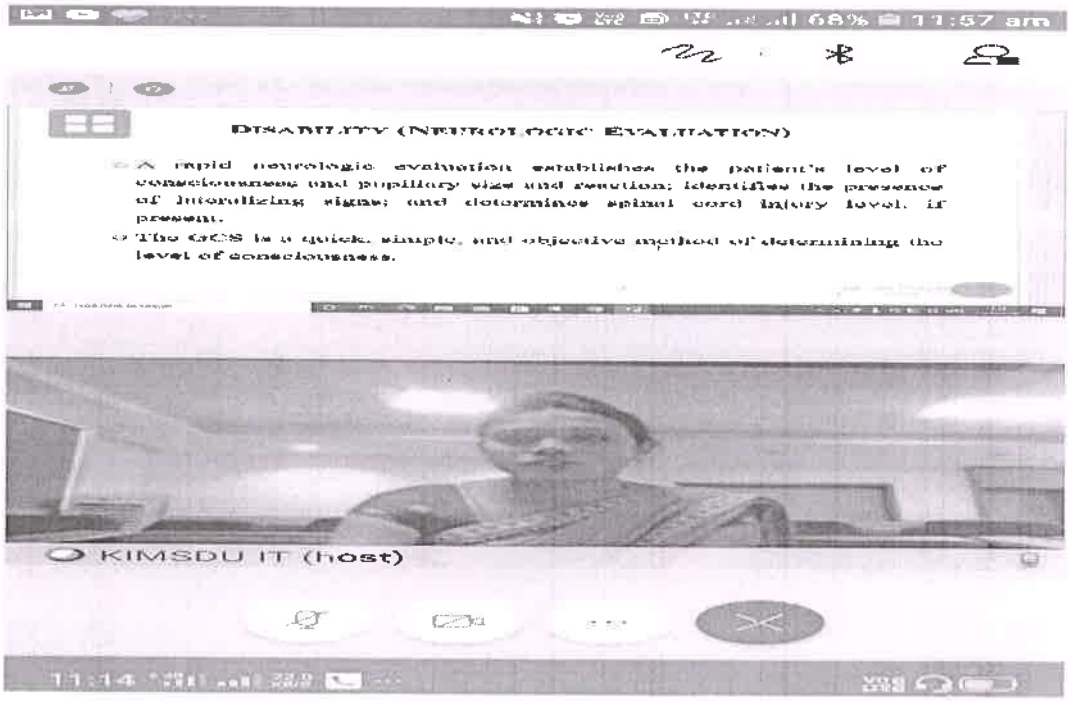
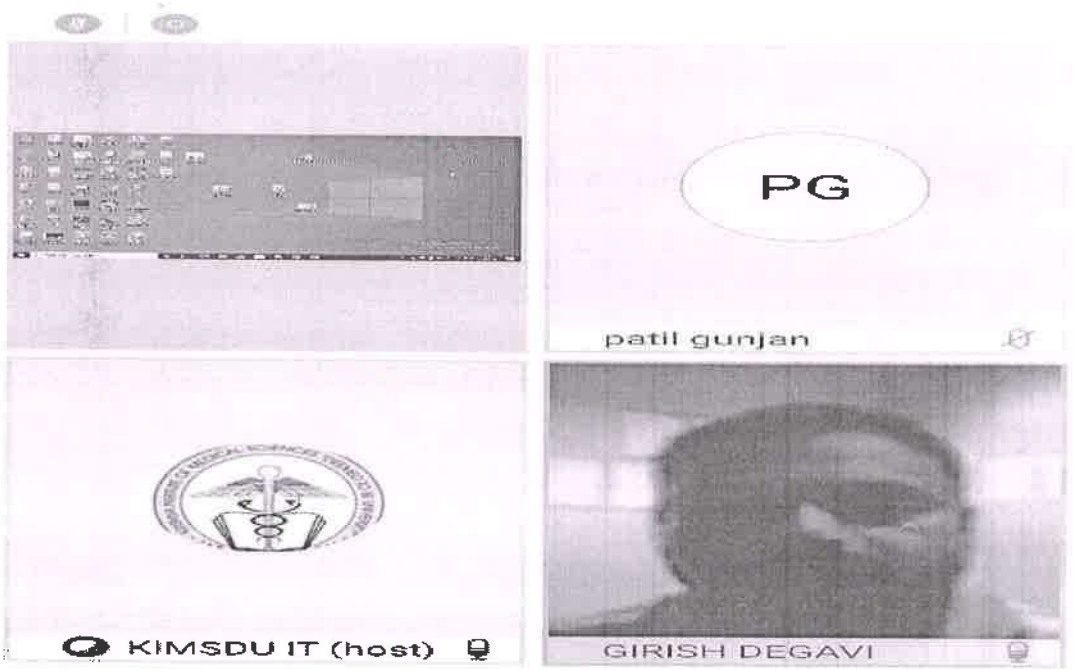
KIMSDU, Karad





DR.Mrs.Vaishali R. Mohite
Dean
KINS,Karad

Dean
Krishna Institute of Nursing Sciences,
KIMSDU, Karad

INTERNATIONAL WEBINAR ON PROSPECTS OF FUTURE HEALTH RESEARCH

Organized by

Bule Hora University College of Health And Medical Sciences,Ethiopia.

And

Krishna Institute of Medical Sciences, Deemed to be University's, Krishna Institute of Nursing Sciences, Karad, Maharashtra, India.






RESOURCE PERSON	TOPIC	TIME
Mr.Takala Utura, Dean, College of Health and Medical Sciences, (BHU), Ethiopia.	INAUGURAL REMARKS	*11.00 TO 11.30 AM (IST) 08.30 AM TO 9.00 AM(EAT)*
Mr. Boko Loka , Vice- Dean College of Health and Medical Sciences, BHU,Ethiopia.	IDENTIFYING A RESEARCH PROBLUM	*11.30 TO 12.15 NOON (IST) 9.00 AM TO 10.15 AM(EAT)*
Mr. Fitsum Demissie, Specialized in pharmaceutical quality assurance and regulatory affairs, College of Health and Medical Sciences, BHU, Ethiopia.	TREDITIONAL MEDICINE: A Future health research Prospective.	*12.45 PM TO 1.30 PM (IST) 10.15 AM TO 11.00 AM (EAT)*
1.30 to 2.30 PM (IST) HEALTH BREAK		
Dr. (Mrs.) Vaishali Rajsinh Mohite Dean, KIMSDU,KINS,Karad. India	GOOD ACADEMIC RESEARCH PRACTICES	*2.30 PM TO 3.15 PM (IST) 12.00 NOON TO 12.45 PM (EAT)*
Dr.Prabhuswami Hiremath Department of Psychiatry, KIMSDU,KINS,Karad. India.	RELIABILITY AND VALIDITY	*3.15 PM TO 4.00 PM (IST) 12.45 PM TO 1.30 PM (EAT)*
Mr .Girish Degavi Faculty of nursing, College of Health and Medical sciences, BHU,Ethiopia	VOTE OF THANKS	*4.00 PM (IST) 1.30 PM (EAT)*

Moderator : **Mr. Girish Degavi**, Faculty of Nursing, College of Health and Medical Sciences, BHU,Ethiopia
Mr . Manisha Gholap ,Dept. of Medical Surgical Nursing, KIMSDU,KINS ,Karad. India

Note: (EAT) East Africa time, (IST): Indian standard Time.

Date : 10/11/2020

Time:- 11.00 am(IST) 08.30 am (EAT) onwards.

E - Certificate will be given after submission of feedback.

Link will be shared at the end of the programme in the chat box.

Google Link for registration:

Click Here https://forms.gle/bFmXouoQL3DjyXv47

(IF LINK DOES NOT OPEN DIRECTLY COPY PASTE THE LINK IN THE WEB BROWSER)

For Queries contact: girishdegavi1984@gmail.com

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KIMSDU, Karad

INTERNATIONAL WEBINAR ON PROSPECTS OF FUTURE HEALTH RESEARCH

International webinar on prospects of future health research was organized by Bule hora University College of health and medical sciences, Ethiopia and Krishna institute of medical sciences, deemed to be universities, Krishna Institute of nursing sciences, karad, Maharashtra, India.

Mr.Takala Utura, Dean, College of Health and Medical Sciences, (BHU), Ethiopia spoke on Inaugural Remarks, followed by Mr. Boko Loka , Vice- Dean College of Health and Medical Sciences, BHU, Ethiopia presented the topic on Identifying A Research Problems. He explained that **Research topics** are concepts, phenomena of interest, or broad problem areas that researchers can focus on to enhance evidence-based nursing. Research topics contain numerous potential research problems, and each problem provides the basis for developing many purposes. Thus, the identification of a relevant research topic and a challenging, significant problem can facilitate the development of numerous study purposes to direct a lifetime program of research. However, the abundance of research topics and potential problems frequently is not apparent to nurses struggling to identify their first study problem. The research problem in this example includes concepts or research topics such as diabetes prevalence, economic consequences, complications of diabetes, consequences of diabetic neuropathy, health management education, self-management, and attitudinal and behavioral changes. Health management education is an abstract concept, and a variety of nursing actions or interventions could be implemented to determine their effectiveness in promoting long-term attitudinal and behavioral changes in persons with diabetes. Thus, each problem may generate many research purposes. The knowledge gap regarding how to present information to foster positive attitudinal and behavioral changes in persons with diabetes provides clear direction for formulating the research purpose.

Mr. Fitsum Demissie, Specialized in pharmaceutical quality assurance and regulatory affairs, College of Health and Medical Sciences, BHU, Ethiopia presented on traditional medicine: A future health research prospective. He overviewed that Traditional medicines (TMs) make use of natural products and are of great importance. Such forms of medicine as traditional Chinese medicine (TCM), Ayurveda, Kampo, traditional Korean medicine (TKM),

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and Unani employ natural products and have been practiced all over the world for hundreds or even thousands of years, and they have blossomed into orderly-regulated systems of medicine. In their various forms, they may have certain defects, but they are still a valuable repository of human knowledge. The development of new drugs relying purely on modern technology appears to be reaching something of a limit. In developing new drugs, the pharmaceutical industry has tended to adopt high-throughput synthesis and combinatorial chemistry-based drug development since the 1980s; however, the considerable efforts made in this direction have not resulted in the expected drug productivity. Some large pharmaceutical companies are facing great challenges to develop new products. Over the past dozen years, increasing attention has accordingly been paid to natural products in the search for novel drugs in combination with new technology, such as high-throughput selection.

In the afternoon session Dr. (Mrs.) Vaishali Rajsinh Mohite, Dean, KIMSDU,KINS,Karad. India explained about Good Academic Research Practices. In her speech Dr. (Mrs.) Vaishali Rajsinh Mohite highlighted information on good practices across the research lifecycle for quality, impactful, and ethical research. It is important to conduct quality research with integrity and focus on publishing the outcomes in high-quality journals. Madam, provided a general framework for enhancing research integrity by focusing on potential threats. It illustrates good practice at each stage in the research cycle, including ideation, research planning, design, conduct, dissemination, management and training. a general framework for enhancing research integrity by focusing on potential threats and good practice at each stage in the research cycle. Typically, research misconduct is in terms of fabrication, falsification, or plagiarism. However, malfeasance manifests itself in multiple forms and can occur at any stage of the research cycle from the initial selection of the research problem, through to the dissemination of the research outputs, to fellow researchers, decision-makers, and the public at large.

Dr. Prabhuswami Hiremath, Department of Psychiatry, KIMSDU, KINS, Karad. India. Presented on Reliability And Validity of tool. Define reliability, including the different types and how they are assessed. He Defined validity, including the different types and how they are assessed and Described the kinds of evidence that would be relevant to assessing the reliability and validity of a particular measure.

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Total participants registered were 150 including faculty, students and participants from other institutes.

Learning Gain= Aggregate Post-test knowledge score-Pre-test Score/No of Questions X100

Learning Gain= 8.5-3 / 10 = 55

Mr .Girish Degavi Faculty of nursing, College of Health and Medical sciences, BHU, Ethiopia presented vote of thanks. Mr. Manisha Gholap, Dept. of Medical Surgical Nursing, KIMSDU,KINS ,Karad. India coordinated the session.

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KIMSDU
KARAD

DR. (Mrs.) Vaishali R. Mohite
Dean
Krishna Institute of Nursing Sciences, Karad

DR.(Mrs.) V. R. Mohite
M.Sc.(N) Ph.D. D.Litt.
Dean / Principal
Krishna Institute of Nursing Sciences
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Article

PanAfrican Medical Journal

Research

Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia

Girish Degavi, Shiferaw Gelchu Adola, Hazaratali Panari, Shivaji Pawar, Chala Wata Dereso

Corresponding author: Girish Degavi, Department of Nursing, College of Health and Medical Science, Bule Hora University, Hagere Maryam, Ethiopia. girishdegavi1984@gmail.com

Received: 21 Aug 2020 - **Accepted:** 07 Nov 2020 - **Published:** 10 Dec 2020

Keywords: Occupational exposure, HIV, Bule Hora Hospital, nurses

Cite this article: Girish Degavi et al. Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia. Pan African Medical Journal. 2020;37(333). 10.11604/pamj.2020.37.333.25680

Available online at: https://www.panafrican-med-journal.com//content/article/37/333/full

Prevalence of occupational exposure to HIV and utilization of HIV post-exposure prophylaxis among health staff at Bule Hora General Hospital, Bule Hora, Ethiopia

Girish Degavi[1,&], Shiferaw Gelchu Adola[1], Hazaratali Panari[2], Shivaji Pawar[3], Chala Wata Dereso[4]

[1]Department of Nursing, College of Health and Medical Science, Bule Hora University, Hagere Maryam, Ethiopia, [2]Department of Nursing, Institute of Medicine and Health Sciences, Debre Berhan University, Debre Berhan, Ethiopia, [3]Krishna Institute of Medical Sciences University, Krishna Institute of Nursing Sciences, Karad, Maharashtra, India, [4]Bule Hora University, Hagere Maryam, Ethiopia

[&]Corresponding author
Girish Degavi, Department of Nursing, College of Health and Medical Science, Bule Hora University, Hagere Maryam, Ethiopia

جامعة عجمان
AJMAN UNIVERSITY

Ajman University

United Arab Emirates
Represented by
Chancellor, Dr. Abdelkrim Seghir

and

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

Malkapur 415539, Tal. Karad, Dist. Satara, Maharashtra, India
Represented by
Registrar, Dr. M. V. Ghorpade

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

Recoverable Signature

X Legally approved

Raghid Fattal
Legal Advisor to AU Chancellor
Signed by: Raghid Fattal

Memorandum of Understanding

The Memorandum of Understanding (MoU) is made by and between Ajman University, UAE, hereafter referred to as "AU" and Krishna Institute of Medical Sciences "Deemed to be University", Karad hereafter referred to as "KIMSDU". Each a "Party" and collectively the "Parties".

Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) was declared as "Deemed to be University" under section 3 of UGC Act, 1956 by Ministry of Human Resources Development vide notification No. F. 9-15/2001-U.3 dated May 24, 2005 having its registered office at near Dhebewadi Road, Malkapur 415539, Tal. Karad, Dist. Satara.

Krishna Institute of Medical sciences "Deemed To Be University", Karad is accredited by NAAC 'A' grade and has been conferred with ISO 9001:2015 certification. The University is ranked by National Institute of Ranking Framework 2020 - University 90 & Medical College 37. The constituent faculties of the Deemed to be University include Medical, Dental, Physiotherapy, Nursing, Allied (Pharmacy, Microbiology and Biotechnology) offering undergraduate and postgraduate courses in respective faculties. It also runs PhD programmes and Post-Doctoral Fellowships in various subjects.

WHEREAS the Parties consider the common interest in promoting mutual cooperation in the area of education and research and shared interests in pursuing academic and scientific goals and professional and cordial relations;

NOW THEREFORE, in consideration of the mutual covenants and representations set forth, the Parties have set forth the following MoU as follows:

Article 1 – Purpose

The purpose of this MoU is to develop academic and educational cooperation on the basis of equality and reciprocity and to promote sustainable partnerships and mutual understanding between both universities.

Article 2 – Scope of Activities

Both universities undertake to promote and develop academic cooperation through, but not restricted to, academic exchanges of students and faculty, scientific research, dual degree programs, scholar visits, short-term study tours, cultural exchange, exchange of academic materials, publications, and other scientific information, professional internships, and technical cooperation.

Article 3 – Financial Arrangement

Recommended Signature

X Legally approved

Raghid Fattal
Legal Advisor to AU Chancellor
Signed by: Raghid Fattal

Krishna Institute of Medical Sciences "Deemed To Be University" Karad

Both universities agree that all specific arrangements and plans for activities are to be negotiated and agreed in writing. All agreements shall be made dependent on the availability of funds.

Article 4 – Activity Agreements

A detailed description of the scope of activities shall be defined in separate Activity Agreements for implementation (such as Student Exchange Agreements, Joint Research Agreements, Faculty Exchange Agreements, etc).

The Activity Agreements will include such terms as:

4.1 Elaboration of the responsibilities of each institution for the agreed upon activity
4.2 Schedules for the specific activity
4.3 Budgets and sources of financing for each activity
4.4 Any other items deemed necessary for the efficient management of the activity.

Article 5 – Intellectual Property Rights and Publication

Detailed management of Intellectual Property Rights and Publication shall be defined in specific Agreements.

Article 6 – Settlement of Differences

Differing viewpoints and interpretations of the MoU shall be settled amicably by mutual consultation or negotiation.

Article 7 – Duration & Termination

This MoU shall become effective on the date of final signing and will be for a period of three years or the date upon which the Parties sign the Activity Agreement, whichever occurs later, renewable on written mutual consent. Either university, may, in its absolute discretion, terminate the MoU by giving at least six months' written notice. Notwithstanding any such termination, all commitments already made in respect of particular Exchange Students or academics shall be carried out till completion.

Article 8 - Surviving Provisions

Clauses 5, 6, and 9 will survive indefinitely the termination or expiration of this Agreement.

Article 9 - Notices

Any notice, demand, offer, request or other communication required or permitted to be given by either Party pursuant to the terms of this Agreement must be in writing.

Article 10 - Counterparts

This Agreement is written in English only.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

Retrieved to Signature

X Legally approved

Raghid Fattal
Legal Advisor to AU Chancellor
Signed by: Raghid Fattal

It is executed in two counterparts, each of which will be deemed an original, but all of which together will constitute one and the same agreement.

Article 11 - Assignability

This Agreement may not be assigned or otherwise transferred by either party to a third party without the prior written consent of the other party.

As witness to their consent to this MoU, the appropriate authorities hereunto provide their signatures.

Ajman University, UAE

Dr. Abdelkrim Seghir
Chancellor

K. Seghir

Date: October 5, 2020

Krishna Institute of Medical Sciences "Deemed to be University", Tal. Karad, Dist. Satara, Maharashtra, India

Dr. M. V. Ghorpade
Registrar

Krishna Institute of Medical Sciences 'Deemed To Be University', Karad

Date: OCTOBER 5, 2020

Study of ABO Blood Group Susceptibility to Coronavirus Disease 2019-COVID-19

Sushma Bommanavar[1*], V.C. Patil[2] , Alexander Maniangat Luke[3], Mohamed Jaber[4], and Jagadish Hosmani [5,*]

[1]Assistant Professor, Department of Oral Pathology & Microbiology, School of Dental Sciences, Krishna Institute of Dental College and Hospital, Karad, Maharashtra, India. Email- drsushopath@gmail.com

[2]HOD & Professor, Department of Medicine, Krishna Institute of Dental College and Hospital, Karad, Maharashtra, India. Email –virendracpkimsu@rediffmail.com

[3]Assistant Professor, Department of Clinical Sciences, College of Dentistry, Ajman University, Al Jurf. Ajman Email- a.luke@ajman.ac.ae

[4]HOD & Professor, Department of Clinical Sciences, College of Dentistry, Ajman University, Al Jurf, Ajman Email- Mohamed.Jaber@ajman.ac.ae

[5]Oral Pathology Section, Department of Diagnostic Dental Sciences, College of Dentistry, King Khalid University, Abha, Saudi Arabia Mail id: jhosmani@gmail.com

* Correspondence: drsushopath@gmail.com

Abstract: The pandemic outbreak of COVID 19 highlighting the zoonotic cross over a link in the present century has provoked an emergency worldwide. Recent experimental evidence supporting the proposition of ABO blood grouping and its susceptibility in certain blood group individuals has created interest among researchers to explore more. **Aim:** To find the susceptibility of 'ABO' blood group in COVID 19 positive cases. **Objectives:** Association of ABO blood group patterns with COVID 19 positive cases. **Methodology:** A cross-sectional, observational study design was conducted among 728 confirmed positive COVID 19 admitted to the tertiary health care centre in Maharashtra from 1st June 2020 to 31st August 2020. The inclusion criteria were COVID 19 positive cases confirmed by Positive Real-time Reverse transcriptase Polymerase-chain-reaction

test (RT PCR) of SARS-CoV-2. We collected the demographic details, associated clinical symptoms, and ABO blood groups from all the patients. The data collected were subjected to statistical analysis. **Results:** The most common blood group affected was B+ (35.5%) followed by A+ (26.10%), AB+, (20.60%) and O+ (11.18%) and the least common was AB- (0.96%), O- (1.51%), A- (1.65%), and B- (1.79%). **Conclusion:** ABO Blood grouping can be used as one of the simplest yet efficient markers for COVID 19. Blood group B Rh-positive and A Rh-positive were the most prevalent blood group types in patients with COVID 19.

Keywords: ABO blood group; 2019 novel coronavirus disease; spike glycoprotein; susceptibility.

1. Introduction

Currently, the Coronavirus emerging from SARS-CoV-2 / COVID 19 virus in Wuhan, Hubei Province, China, has been declared as Pandemic disease by the World Health Organization (WHO). Also known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2, SARS2, 2019-nCoV), this epidemic is spreading widely across the globe like a wildfire. Recent reports have highlighted the role of zoonotic links, cross-species transmission (CST), and spillover conjuncture between animals (bats, poultry, snakes, marmots) and human transmission before acquiring direct human-to-human contact.[1,2] This CST agent (virus & it's virions) further causes severe respiratory illness leading to pneumonia, multi-organ failure, and cardiac arrest.[3,4]

Karl Landsteiner in 1900 discovered the phenomena of RBC agglutination, which is a well-documented hypothesis. The dynamic association between the blood group and diseases has been studied from the early 1900s because human blood group antigens can serve as receptors for various pathogens. Even a minute variation in structure can induce antibody productions as a part of the defense mechanism. These oligosaccharide structures with glycosyltransferase enzymes and sugar moiety found on various cell surfaces and body secretions can be mimicked by pathogens and act as a predisposing factor for disease progression.[5] Based on this phenomenon, a study was conducted to assess the relationship between the ABO Blood Group and the COVID-19 susceptibility among Chinese populations. The results inferred that blood group O individuals were at low risk, and blood group A was at high risk to COVID-19 infection. [6]. Considering this, the present study aims to study the relation of ABO blood group in COVID 19 cases among the Indian population and correlate its susceptibility pattern among the various blood groups.

2. Materials and Methods

After clearance from the ethical committee with Designated Protocol no 340/2019-2020, we conducted a time-bound, cross-sectional, observational study from 1st June 2020 to 31st August 2020 at Krishna Institute of Medical Sciences, Karad, Western Maharashtra, India. For the course, we rationalized that there are an association, linkage, and high susceptibility between specific blood group individuals and COVID 19 positive cases. We calculated the total sample size of about 728. All the patients with COVID positive cases confirmed by positive real-time reverse transcriptase polymerase-chain-reaction test (RT PCR) of SARS-CoV-2 on nasal and pharyngeal swab specimens were enrolled in the study. Ethical considerations were fulfilled by obtaining verbal informed consent from all the participants who fit the study inclusion criteria. No threat or pressure was imposed on the participants who denied participation in the study. The confidentiality of all the participants was maintained. The demographic details, travel history, and associated symptoms were noted. Clinical confirmation of positive cases was done using RT PCR test (Bio- Rad CFX 96) and applying the clinical and laboratory staging system. We classified the instances based on Clinical and laboratory Staging System as Stage 1: Mild (Early Infection) - Groups A B & C; Stage IIa: Moderate (Pulmonary Involvement Without Hypoxia) - Group D; Stage IIb: Moderate (Pulmonary Involvement With Hypoxia) - Group E; Stage III: Severe (Systemic Hyperinflammation with Cytokine Storm)- Group F. We further investigated biochemical parameters on the classified group. Individuals with known blood groups were noted, and those who were not aware of the blood group were subjected to the standard ABO blood grouping method as given by Karl Landsteiner. A simple random sampling method and lottery method of blinding participants was employed to avoid selection and performance bias. The data collected were subjected to statistical analysis using SPSS.

3. Results

A total of 728 COVID positive cases were included, of which 61 % were males, and 39 % were females. All the values were expressed in mean and standard deviation. Statistical analysis was done using the Chi-Square test. The mean age group was 40.37 (SD ± 18.36).Out of total 728 patients, 190 (26.10%) were A +; 12 (1.65%) were A - ; 259 (35.5%) were B +; 13 (1.79%) were B - ; 86(11.81%) were O +; 11(1.51%) were O - ; 150 (20.60%) were AB + & 7 (0.96%) were AB - . The percentage distribution of ABO blood grouping with COVID 19 is shown in Figure 1. The highest percentage involved was B +

blood group patients with 35.5 % and the least being AB – with 0.96%. The Chi-Square test was applied. The p value was found to be <0.001, indicating that the B blood group was statistically prevalent than other blood groups in the present population with COVID 19 disease.

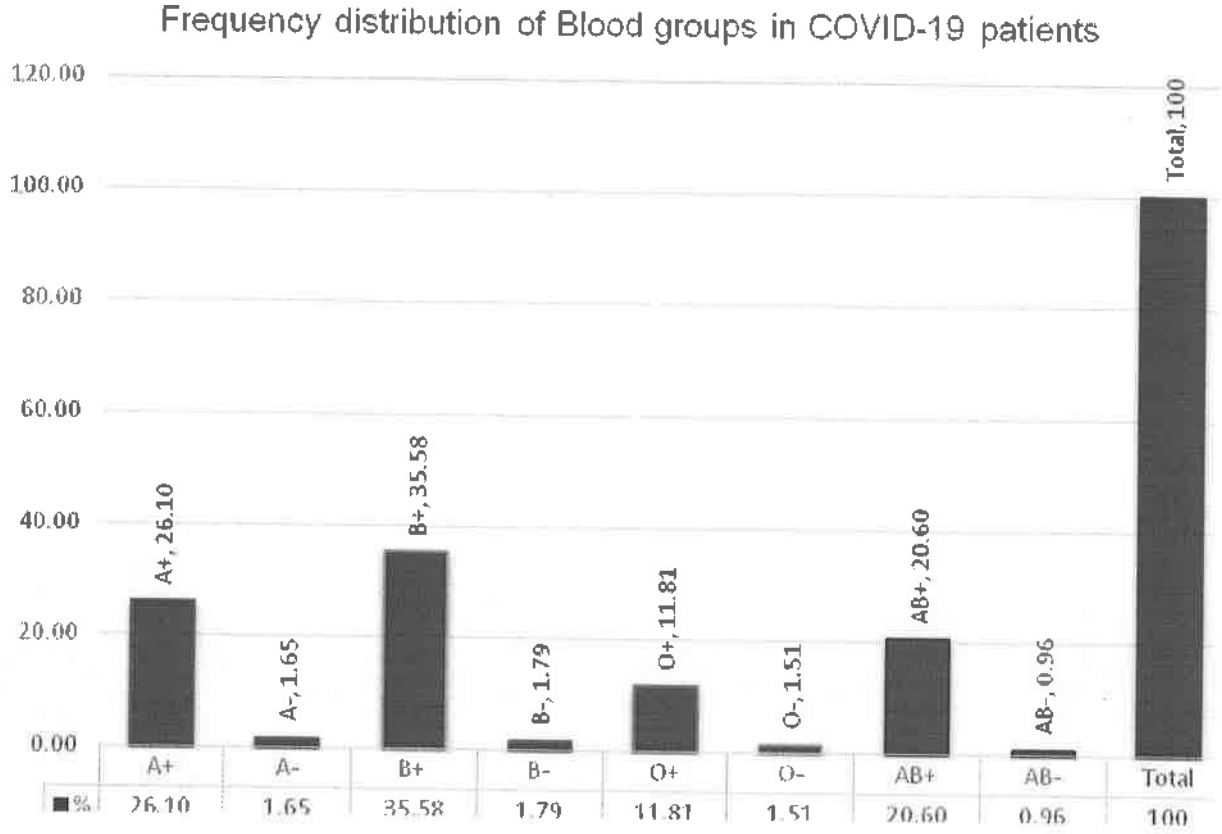

Figure 1. Frequency distribution of Blood groups in COVID-19 patients

4. Discussion

Blood group antigens are the most common target for epidemiological study as they are polymorphic traits inherited in different populations and among other individuals. [7] Being considered part of innate immunity, these dynamic entities have always proved interested among researchers for their direct role in various infectious diseases. Equipped with receptor moiety and membrane microdomains, they promote and 'grease the wheels' for colonization, invasion, and signal transduction for micro-organisms. The symbiotic relationship between the blood groups and microbes, including the virus, has reopened the mystery for future research. Recently few factual hypotheses have linked the strong affinity of spike protein of corona virus with sugar moiety- N-acetyl galactosamine present on the cattle RBCs, inferring that A blood group individuals bear an extra sugar molecule, are more susceptible to this zoonotic CST infection.[7,8] Based on this phenomenon, we undertook a study to see an association, linkage, and high susceptibility between specific

blood group individuals and COVID 19 positive cases among the Indian population.

This study found that ABO blood groups display an association and connection with COVID 19 positive cases. Precisely the proposition of blood group B+ was highest with 35.58% of admitted patients, and the proportion of AB- displayed the lowest percentage of about 0.96%. This difference in the proportion of susceptibility of positive cases of COVID 19 among blood groups in the Indian population showed significant discordance with a previous documented study conducted by Jiao Jhang et al. from the Chinese community (2173 positive cases) [6] and Zietz M et al. from Newyork population (1559 positive cases) [8].

Based on agglutination law, O blood group individuals with anti-A and anti-B antibody should be least suspected of any infection. To correlate in-depth on how the O blood group individuals are least suspected, Yamamoto.et al; in 2020 said that the Coronavirus is a single-stranded RNA Virus with four Madrid of proteins, amongst which Spike, i.e., the S protein that facilities interaction with the ACE receptors of respiratory epithelium can synthesize A or B glycan antigens, depending on the phenotype. [7,9] According to the author, the S protein of an A, B, or AB group individual carries respective glycan antigens and respective antibodies, can block the interaction between S protein and ACE2, thereby offering complete or incomplete protection. This could further explain why blood group O individuals were least affected. With support for this existing hypothesis, another possible explanation suggested by Arend Peter [10] was that, during the evolutionary phenotype formation, epitopes were exposed to the ancestral, non-immune immunoglobulin IgM & its highly anti-glycan ABO isoagglutinin activities that further downregulated the phenotypic glycosylation in the non-O groups than the O group individuals, thus making the Blood group O as universal groundbreakers of immunity. [9]

In the present study, B + individuals with anti-A antibodies were at high risk among the Indian population compared to the Chinese community, which increased the risk of a blood group bearing anti-B antibodies. The hypothesis of additional sugar moiety- N-acetyl galactosamine present in A blood group was considered the precise reason why A blood group was at high risk among the Chinese population and should be reevaluated and quantitatively assessed even in B blood group individuals. To add on, the demographic population variations should be correlated to prove the hypothesis. O blood group concept for coronavirus protection favors Chinese populations, further making their evidence concrete and robust. The disparity lies among the non-O blood groups individuals among the Indian community, as shown in our study. Hence future studies with more samples

amongst different communities should be undertaken. Once verified, several clinical implications such as more vigilant surveillance and treatment with extra personnel protection should be given for the blood group individuals who are at more risk than other blood groups.

Correlations between sex and gender differences have also been observed in various infectious diseases in past research. The importance of sex as a variable gained more interest in 2016 when NIH and SBGM (Sex-Based Gender Medicine) reinforced the inclusion of SABV(Sex As A Biological Variable) in study design.[11] According to descriptive and observational data from Wuhan, China, about 51%-66.7%of affected patients were male. [12] The percentage was per other countries such as Italy with 58%. The Economic Survey of India (2020) has also documented that 60% of males are more probing for acquiring COVID 19 than 25% of females. In the present study, 61 % were males, and 39 % were females, making males more susceptible to COVID infections. This interrelationship can be connected to confounding variables like the habit of smoking, the effect of sex hormones, and increased ACE 2 activity among males. [12] Schurz H et al. hypothesized that the X chromosome is equipped with more immune-related genes than the Y chromosome, making females as supreme power with dynamic immune response. But at the opposing end, females are more prone to autoimmune diseases due to the overproduction of these genes. [13] Tran C (1998) & Franconi et al. (2014) have documented that most of the adverse drug reactions (ADRs) occur more in females because the majority of clinical drug trials were performed on males. [14,15] All these studies emphasize that we focus on even minor vital information that is often neglected during the research study design.

The highest prevalence of smoking among males has also contributed to increased susceptibility for the current COVD 19 pandemic. Approximately about 288 million men in China and 17.6% of males in the USA were smokers compared to 12.6 million women in China and 13.6 % females in the USA. [16-18] Controversial studies have documented that the nicotinic acetylcholine receptor (nACfR) acts as a co-receptor for viral cell entry within the respiratory tract and central nervous system inhibit the binding of SARS - COV 2, thus preventing the adhesion. Changeux JP et al. in 2020 inferred nicotine's use as a protective therapy against COVID 19, preventing the replication of the virus and acting as a positive allosteric modulator for nAChRs. However, there is no empirical evidence

proving this hypothesis. Hence, the WHO has strongly recommended further revaluate this hypothesis as nicotine is a drug of abuse and can lead to other complications. [19]

5. Conclusions

Thus to conclude, blood grouping can be used as one of the most straightforward yet efficient biomarkers for COVID 19. Blood group B Rh-positive and A Rh-positive were the most prevalent blood group types in patients with COVID 19. Furthermore, research should also be focused on including minor parameters such as ABO blood grouping, sex, and habits like smoking and correlate them with disease progression. As documented by our study, males with B positive blood groups were at high risk and should be kept under surveillance. Newer precautionary protocols should be developed and formulated on this basis.

Author Contributions: For research articles with several authors, a short paragraph specifying their individual contributions must be provided. The following statements should be used "Conceptualization, X.X. and Y.Y.; methodology, X.X.; software, X.X.; validation, X.X., Y.Y. and Z.Z.; formal analysis, X.X.; investigation, X.X.; resources, X.X.; data curation, X.X.; writing—original draft preparation, X.X.; writing—review and editing, X.X.; visualization, X.X.; supervision, X.X.; project administration, X.X.; funding acquisition, Y.Y. All authors have read and agreed to the published version of the manuscript.", please turn to the CRediT taxonomy for the term explanation. Authorship must be limited to those who have contributed substantially to the work reported.

Funding: Please add: "This research received no external funding" or "This research was funded by NAME OF FUNDER, grant number XXX" and "The APC was funded by XXX". Check carefully that the details given are accurate and use the standard spelling of funding agency names at https://search.crossref.org/funding, any errors may affect your future funding.

Acknowledgments: In this section you can acknowledge any support given which is not covered by the author contribution or funding sections. This may include administrative and technical support, or donations in kind (e.g., materials used for experiments).

Conflicts of Interest: Declare conflicts of interest or state "The authors declare no conflict of interest."

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1. Author 1, A.B.; Author 2, C. Title of Unpublished Work. *Abbreviated Journal Name* stage of publication
   (under review; accepted; in press).
2. Author 1, A.B. (University, City, State, Country); Author 2, C. (Institute, City, State, Country). Personal communication, 2012.
3. Author 1, A.B.; Author 2, C.D.; Author 3, E.F. Title of Presentation. In Title of the Collected Work (if available), Proceedings of the Name of the Conference, Location of Conference, Country, Date of Conference; Editor 1, Editor 2, Eds. (if available); Publisher: City, Country, Year (if available); Abstract Number (optional), Pagination (optional).

4. Author 1, A.B. Title of Thesis. Level of Thesis, Degree-Granting University, Location of University, Date of Completion.
5. Title of Site. Available online: URL (accessed on Day Month Year).

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Gmail Sushma Bommanavar <drsushopath@gmail.com>

Fw: Study details

message

DINESH AGARWAL <dkagarwal_1512@yahoo.co.in> Tue, Aug 25, 2020 at 12:30 PM
To: Sushma Bommanavar <drsushopath@gmail.com>

----- Forwarded message -----
From: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
To: Jayant Pawar <jayantpawar26@gmail.com>
Sent: Tuesday, 25 August, 2020, 12:30:24 pm IST
Subject: Fw: Study details

----- Forwarded message -----
From: Dr. Mansing Pawar <mansing@drpawars.com>
To: DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Sent: Tuesday, 25 August, 2020, 11:40:11 am IST
Subject: Fwd: FW: Study details

Dear DINESH Agarwal
Director Research KIMSDU

Greetings of the Day

I am here with attaching the Research study proposed by Faculties of College of Dentistry Ajman University as We Proposed,Discussed and agreed between both Universities , for your Review,consideration and further action.

1) As discussed with Dr Alexander the Study is proposed by Ajman Univercity and KIMSDU Karad
2)The Study is approved by their Ethical committee....
3)We May allocate Two Facilities as investors one May be from Microbiology Department and one from Dental pathology and Microbiology Department KIMSDU
4) As discussed Const of the consumables will be reimbursed by Ajman University

Please feel free to clear your droughts if any or questions

Requesting you to do the needful

Waiting for your reply

Regards and best wishes

Dr Mansing Pawar

--------- Forwarded message ---------
From: **Dr. Alexander Luke** <a.luke@ajman.ac.ae>
Date: Mon, 24 Aug 2020 at 10:46 PM
Subject: FW: Study details
To: Mansing Pawar <mansing@drpawars.com>

Dr. Alexander Luke
Assistant Professor
College of Dentistry
T: +97167056243
www.ajman.ac.ae

From: Dr. Alexander Luke

Sent: Monday, August 24, 2020 9:11 PM

To: Mansing Pawar <mansing@drpawars.com>

Subject: Study details

Dear Dr Pawar

As discussed iam hereby sending you the details of the research proposal. We have the ethical approval .

Please let me know in what best way it can be done

Hoping to get full support

Gmail

alexander luke

Compose

Inbox 10,303
Starred
Snoozed
Important
Chats
Sent
Drafts 109
All Mail

Meet

New meeting
Join a meeting

Hangouts

Sushma

No Hangouts contacts
Find someone

(no subject)

Inbox ×

Sushma Bommanavar <drsushopath@gmail.com>
to mansing, Alexander, DINESH

Good Evening Sir, Sir hereby sending the completed manuscript of Corona proje
Scopus indexed journal bearing h index of 20) needs corona related original stud
are always welcome . Kindly let us know

Thank you

Corona Article 1.doc

Dr. Alexander Luke
to me, mansing@drpawar.com, DINESH

Dear Dr Sushma
Thank you so much for the mail
The manuscript is well written. I wanted to ask which journal you are planning to

I also wanted to know about the update on our study which we had discussed. Th
already in extension. I had briefed dr Mansing about this. Hope we can do somet
I will be happy to discuss with you about the same if you let me know
Regards
Thanks a lot for your excellent cooperation
Alex
Get Outlook for iOS

--

Dr Mansing G.Pawar
BDS, MDS
President, MNR Educational Council.
President, 3D printing Education and Research Association of India.
Former Dean, Government Dental College, Mumbai.
Former Dean of Faculty (Dental), Maharashtra University of Health Sciences.
Former Member SENATE, Maharashtra University of Health Sciences.
Former Joint Director, Medical Education Government of Maharashtra India.
Former Member, Dental Council of India.

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Date: 9 th October 2020
Dear Dr Sushma
Thank you very much for the mail. As we discussed we will be surely getting the money reimbursed but the budget is granted what is already approved, once you provide the invoice I can discuss with the P I Dr Mohamed jaber and let you know. But we can get it reimbursed only once the study is finished and I request if we can finish maximum by January since this grant is already in extension period till December . If we do not finish then the grant will not be released. For manuscript I can take the permission till march for submitting. I request your full support and cooperation in this study and making a good publication
Thanking you
Regards
Dr Alexander

Dr. Alexander Luke

Assistant Professor

College of Dentistry

T +97167056243

Date: 14th October 2020

Dear Dr Sushma
Thanks a lot for your mail. We are very happy to get involved with your research as per your mail. The only challenge here we will have is getting samples and testing should be done outside which will be very expensive and also the ministry of health approval is a hard task to get for these, we will be happy to contribute from our side if these approvals were not difficult, I request you to consider in what way we can participate so that we can actively take this collaboration .
Second as per the previous confirmation you will be second author in the project we have given you .
Thanking you
Regards
Dr Alex

Dr. Alexander Luke

Assistant Professor

College of Dentistry

T +97167056243

Gmail Sushma Bommanavar <drsushopath@gmail.com>

no subject)

messages

ushma Bommanavar <drsushopath@gmail.com> Mon, Nov 2, 2020 at 6:10 PM
o: "Dr. Alexander Luke" <a.luke@ajman.ac.ae>, DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>

Good Evening Sir ,
Sir as per conversation by D K Agarwal sir (Additional directorate of research) we are glad to include you as one of the author in our project titled "STUDY OF ABO BLOOD GROUP SUSCEPTIBILITY TO CORONA VIRUS DISEASE (COVID 19)"
Sir u can also suggest one more author from your side who can be included in the same project. Let us know if any

Thank you

COVID 1.docx
32K

r. Alexander Luke <a.luke@ajman.ac.ae> Mon, Nov 2, 2020 at 8:10 PM
o: Sushma Bommanavar <drsushopath@gmail.com>

Good evening Dr

Thank you so much for your mail. We are happy to be a part in your research. I will surely let you know by tomorrow the additional one person whose name can be included

Thanking you

Regards

Dr Alex

Dr. Alexander Luke
Assistant Professor
College of Dentistry
T: +97167056243
www.ajman.ac.ae

From: Sushma Bommanavar <drsushopath@gmail.com>
Sent: Monday, November 2, 2020 4:40 PM
To: Dr. Alexander Luke <a.luke@ajman.ac.ae>; DINESH AGARWAL <dkagarwal_1512@yahoo.co.in>
Subject:

Good Morning Sir
Yes Sir kindly let us know to the earliest

Thank You
[Quoted text hidden]

---

r. Alexander Luke <a.luke@ajman.ac.ae> Tue, Nov 3, 2020 at 8:54 AM
o: Sushma Bommanavar <drsushopath@gmail.com>

Good morning Dr
I will surely let you know today itself.
Thank you for your cooperation
Regards
Dr Alex

Get Outlook for iOS
Dr. Alexander Luke
Assistant Professor
College of Dentistry
T: +97167056243
www.ajman.ac.ae

From: Sushma Bommanavar <drsushopath@gmail.com>
Sent: Tuesday, November 3, 2020 3:42:51 AM
To: Dr. Alexander Luke <a.luke@ajman.ac.ae>
Subject: Re:

[Quoted text hidden]

Gmail Sushma Bommanavar <drsushopath@gmail.com>

uthor New Submission Acknowledgement letter: jomfp_21_21

message

ditor In Chief <editor@jomfp.in> Thu, Jan 21, 2021 at 12:25 PM
o: drsushopath@gmail.com

Dear Dr Dr. Sushma Bommanavar,

Journal of Oral and Maxillofacial Pathology has received your manuscript entitled "Study of ABO Blood Group Susceptibility to Coronavirus Disease 2019-COVID-19" for consideration for publication. The reference number for this manuscript is "jomfp_21_21". Kindly quote this in future correspondences related to this manuscript.

The manuscript is being reviewed for possible publication with the understanding that it is being submitted to ONE journal at a time and has NOT been published, simultaneously submitted, or already accepted for publication elsewhere either as a whole or in a part.

Online submission of this article implies that the corresponding author has written consent from all the contributors to act as the corresponding author.

All contributors are requested to send the **Digital Copyright Agreement Consent** within 1 week. The status can be viewed in the 'Manuscript Information page' from your area. The decision about the manuscript will be conveyed only on receipt of the agreement on copyright form received from all contributors.

High-resolution images are required at the time of acceptance, you should be notified separately for the same if images uploaded by you are not of printable quality.

The Editors will review the submitted manuscript initially. If found suitable, it will follow a double-blinded peer review. We aim to finish this review process within a short time frame, at the end of which a decision on the suitability or otherwise of the manuscript will be conveyed to you via this system.

During this process, you are free to check the progress of the manuscript through various phases from our online manuscript processing site https://review.jow.medknow.com/jomfp.

We thank you for submitting your valuable work to the Journal of Oral and Maxillofacial Pathology.

Yours sincerely,

Editorial Team

Journal of Oral and Maxillofacial Pathology

महाराष्ट्र MAHARASHTRA ◐ 2019 ◐ WL 501280

SUB. TREASURY OFFICE KARAD
23 SEP 2020
SUB TREASURY OFFICER KARAD

Memorandum of Understanding

This Memorandum of Understanding (this "MoU") is made on this day the 14/12/2020.

BY

HELLA India Automotive Pvt. Ltd., a Private Limited Company duly incorporated under the Companies Act 1956 and validly existing under Companies Act 2013 and having its Registered Office at K-61B, LGF, Kalkaji, New Delhi – 110019 and Design Office in 2nd floor Nano Spaces, Baner Pashan link Road, Pune 411045 represented by YOGESH MAHAPARLE, [hereinafter referred to as "Hella" which expression shall unless it be repugnant to the context or meaning thereof mean and include its authorized representatives, successors, legal heirs, executors, administrators and permitted assigns] OF THE ONE PART;

AND

Krishna Institute of Medical Sciences "Deemed To Be University", Karad.
Near Dhebewadi road, Malkapur. Tal- Karad, Pin- 415539, Dist- Satara, Maharashtra hereinafter referred to as "KIMSDU" which expression shall unless it be repugnant to the context or meaning thereof mean and include its authorized representatives, successors, legal heirs, executors, administrators and permitted assigns] OF THE OTHER PART

HELLA AUTOMOTIVE PVT. LTD. BANER, PUNE-45

Krishna Institute of Medical Sciences "Deemed To Be University" Karad

WHEREAS:

A. **Krishna Hospital and Medical Research Centre,** the teaching hospital of Krishna Institute of Medical Sciences (Krishna Institute of Medical Sciences "Deemed to be University") is a fully equipped super-specialty hospital set up as per international standards in the State of Maharashtra with modern infrastructure and facilities to handle all healthcare needs.

B. Hella is an electronics devices manufacturer with one of the development center at Pune, Maharashtra.

C. Hella having its design and development center at 2nd floor Nano Spaces, Baner Pashan link Road, Pune 411045 is engaged in the business of design and manufacturing of electronics devices for Automotive OEMs.

D. In the pandemic situation, as a social responsibility Hella through its CSR activity decided to design and manufacture Ventilators and wish to conduct clinical trials of their ventilator in India.

E. Hella has approached **Krishna Institute of Medical Sciences "Deemed to be University", Karad** for the purpose of conducting clinical trials in its premises.

F. "Clinical Trial" to be conducted under the direction and supervision of the Hella using the facilities of the Hospital.

Scope of Krishna Institute of Medical Sciences "Deemed to be University", Karad

1) To provide Separate area/space for the Research department
2) To provide doctors/consultants who will be appointed as the Principal Investigator (PI) for the respective studies.
3) Support for infrastructure required for conduct of trial eg. Computer, printer, Power back up, Refrigerator, centrifuge machine etc
4) Take part in research with prior permission of PI (principal investigator) and hospital and facilitate counselling of the patients for the same.

Scope of Hella

1) To get clinical trials sanctioned for Krishna Institute of Medical Sciences "Deemed to be University", Karad
2) To provide enough Clinical Research coordinators (CRC). The salaries will be borne by Hella if any.
3) To conduct clinical trials according to International Conference of Harmonization for Good Clinical Practice guidelines and Documentations, as prescribed by Local regulatory guideline, USFDA, EMEA and Japan regulatory authority.
4) To conduct clinical trials under the guidelines of the Drug Controller General of India (DCGI), New-Delhi.

HELLA INDIA AUTOMOTIVE PVT. LTD. BANER, PUNE-45

5) To have necessary support for building Artificial Intelligence (AI) based features for ventilator. This involves technical support and data for algorithm development and validation.
6) To negotiate and fix budgets for clinical trials if any.
7) To provide overall Technical support required for the activities being done for the clinical trials.

Confidentiality

Confidentiality of the Research Project and patients will be maintained by both the parties.

Financial terms:

KIMSDU shall not charge any fees. However, any fees of the committee shall be paid by Hella as and when invoice is being raised by KIMS.

This Agreement is valid for a period of 2 years from date of signing of both parties.
IN WITNESS whereof parties have executed this deal on the day and place herein above mentioned through their authorized representatives.

For and on behalf of
Krishna Institute of Medical Sciences
"Deemed to be University", Karad.

Name: Dr. M. V. Ghorpade
Title: REGISTRAR
Krishna Institute of Medical Sciences "Deemed To Be University", Karad

For and on behalf of
Hella India Automotive (P) Ltd

Name: Yogesh Mahaparle
Title:

WITNESSES:

Krishna Institute of Medical Sciences
"Deemed to be University", Karad.

Name: Dr. Dinesh K. Agarwal.

Hella India Automotive (P) Ltd

Name: Dr. Rohan S. Phatak

Minutes of meeting held on 07.01.21 in the campus HELLA India Automotive Pvt. Ltd with their executives for the purpose of signing MoU between both the institutions

The meeting was held at 3.00 pm on 7th Jan 21 and attended by following persons from both sides.

1. Dr D. K. Agrawal
2. Dr Jayant Pawar
3. Mr Yogesh Mahaparale
4. Mr Ravi

The following points were discussed before signing the MoU.

1. The Krishna Hospital & Medical Research Centre on behalf of KIMSDU will extend the support and other services along with certification after the conduct of clinical trial of proposed ventilator which has been manufactured by HELLA India Automotive Pvt. Ltd under the CSR activities.
2. The product is developed, designed and manufactured by HELLA India Automotive Pvt. Ltd at their Pune center.
3. The undersigned has discussed about the expenditure involved along with human resources for the clinical trial shall be paid by the HELLA India Automotive Pvt. Ltd.
4. The undersigned has also discussed in view of routine work of HELLA India Automotive Pvt. Ltd in the field of automation and simulation, therefore for other products as and when KIMSDU will come out in the form of medico device the whole support for the product development and its manufacturing shall be provided from the other side as and when required.
5. HELLA India Automotive Pvt. Ltd have also shown their willingness to donate few pieces of ventilators to Krishna Hospital as a societal responsibility in CSR.

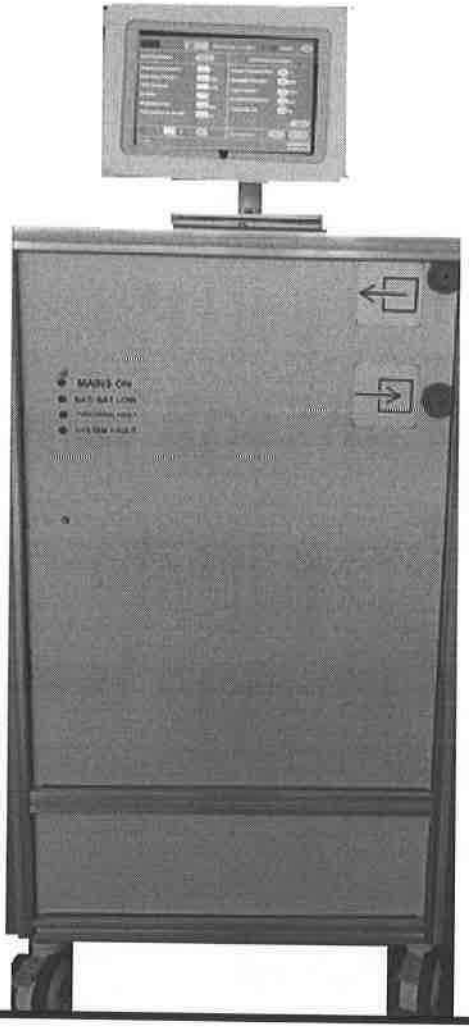
After the discussion, it was decided to sign the MoU between both the parties for further implementation.

The meeting is ended with thanks to the chair.

Dr D. K. Agrawal
Additional Director Research

HELLA VENTILATOR 1.0

Technical Specification



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1.1 Physical specification

All specifications are approximate, maybe changed at any moment.

1.1.1. Main Unit:

- Height:860 mm
- Depth: 580 mm
- Width: 580 mm
- Weight: 40 kg

1.1.2 Display Unit:

- Monitor: Lenovo M10 HD 25.65 cm (10.1 inch) Wi-Fi Tablet 2 GB RAM, 32 GB, Black ZA4G0007IN
- Encloser: Plastic enclosure to hold and lock Tablet
- Communication Interface (Display Unit and Main Unit): Bluetooth

1.1.3 Temperature ranges:

- Operating: -10 to 50 degree Celsius
- Storage: -40 to 140 degree Celsius

1.1.4 Enclosure:

- ACP sheet with Seals to prevent water ingress
- IP21

1.2 Setting Parameters

HELLA Ventilator supports following multiple Ventilation modes.

- Mandatory Ventilation:
  - VCCMV (Volume Control Continuous Mandatory Ventilation)
  - VCAC (Volume Control Assist Control)
- Spontaneous breathing:
  - BIPAP (Bilevel Positive Airway Pressure)

User Set parameter with Defaults values, Range, Step size are described in table below.

All the above are configurable from Configuration Screen of the HMI Tab.

User Set Parameter	Range	Default value	Step Size	Applicable Modes	Units
Inspiratory Pressure	20-70	35	2	VC-CMV, VC-AC	mbar
I/E Ratio	1:1 to 1:4	1:2	0.5	VC-CMV, VC-AC	
BPM	1-20	20	2	VC-CMV, VC-AC	/minute
PEEP	0-20	5	1	VC-CMV, VC-AC, BIPAP	mbar
Inspiratory Tidal Volume	100-600	350	50	VC-CMV, VC-AC	mbar
FiO2 Ratio	21-100	50	5	VC-CMV, VC-AC, BIPAP	%
Pressure support	5-30	10	2	BIPAP	mbar

1.3 Ventilator Performance

Monitoring accuracy: Monitor equipment accuracy (For example: flow sensors)

Control Accuracy: Ventilator performance to deliver the output measured against Standard equipment.

Parameter	Unit	Range	Monitoring Accuracy	Control Accuracy
Oxygen concentration	%	21-100	+-2%	+-5%
Inhalation Pressure	mbar	0-70	+-1mbar	+-1mbar
Peep Pressure	mbar	0 - 20	+-1mbar	+-2 mbar
Breathing frequency	bpm	0-30	+-1 BPM	+-1 BPM
Inspiratory Tidal Volume >=300ml	ml	0 - 600	+-15%	+-10%
Expiratory Tidal Volume>=300ml	Ml	0-600	+-15%	+-10%

Table below defines the O2 concentration response time.

Tidal Volume	BPM & I:E Ratio	O2 Concentration response time from (21% to 90%)	O2 Concentration response time from (21% to 95%)
500 ml	10BPM and 1:2	406 seconds	545 seconds
200 ml	20BPM and 1:2	508 seconds	645 seconds

1.4 Alarms

1.4.1 General

Supports following alarms

- **Input pressure O2 Supply failure:** Insufficient Input O2 supply for Normal operation.
- **Input pressure Air Supply Failure:** Insufficient Input Air supply for Normal operation.
- **Mains to battery Switchover, Low Battery:** Electricity supply indications.
- **PEEP Pressure exceeded**: Monitored PEEP pressure exceeds allowed range.
- **PEEP Pressure not achieved**: Monitored PEEP pressure not in allowed range.
- **Inspiratory Tidal Volume not achieved:** Minimum required inspiratory Tidal Volume not achieved.
- **Inspiratory Tidal Volume exceeded**: Inspiratory Tidal Volume exceeds allowed range.
- **Inspiratory Airway Pressure exceeded**: Inspiratory pressure exceeds allowed range.
- **Inspiratory Airway Pressure not achieved**: Minimum required inspiratory pressure not achieved.
- **Patient disconnected**: Inspiratory and expiratory line disconnected
- **Breathing Frequency Mismatch:** Monitored BPM not in expected range
- **O2 Concentration Mismatch**: Monitored Fio2 ratio not in expected range
- **Memory Read/write operation failed**: Controller Read write memory operation failed
- **Ventilator CPU Temperature Exceeds**: Controller Temp exceeds operating range
- **Communication Failure**: Display unit and main unit Communication breaks
- **Sensor Failure**: All pressure sensor failure detection
- **Airway obstruction**: If there is any blockage present in inhalation and exhalation lines of the Ventilator

- **Alarm Pause**: 120 seconds
- **Alarm/Event logging**: Logs all Alarms, events, user settings, monitoring parameter with timestamps

1.5 Power Characteristics

- Power Supply: AC 140V to 250V, 47 ~ 55 Hz, PF> 0.95
- Power Input: 324W
- AC fuse: 230VAC, 2A, 20X5mm, glass Cartridge fuse
- DC fuse: 24VDC, 20A, 20X5mm, glass Cartridge fuse
- Earth resistance: < 0.1 Ω
- Internal Battery Type: 2x 12V 9AH Lead Acid Battery
- Battery life: 1.5 Hour

1.6 External Pneumatic Source Characteristics

1.6.1 Pressure Ranges:

- O2 source: 0.7 to 5.5 bar, Typical pressure: 4 bar
- O2 Source Flow rate: Peak 30LPM
- Compressed Air source: 0.7 to 5.5 bar, Typical pressure: 4 bar.
- Compressed Air Source Flow rate: Peak 30LPM

1.6.2 Connector Specifications:

- O2: As per std. ISO 5356-1:2015, for Air and O2, 22mm Male
- Compressed Air: As per std. ISO 5356-1:2015, for Air and O2, 22mm Male

1.7 BTPS Compensation

Ventilator provides the volume with Body temperature and pressure saturated correction factor. For the BTPS compensation, Body temperature is assumed to be 37-degree Celsius and Body humidity is assumed to be 100%.

Air humidity is assumed to be 30.5% and Ambient air pressure is calculated by the input of height above sea level. User needs to enter the height of the location in the configuration screen.

KRISHNA COLLEGE OF PHYSIOTHERAPY
KIMSDU, KARAD

27th Mar 2019

VISIT REPORT

Venue: Mahatma Gandhi Vidyalaya, Umbraj and Krishna College of Physiotherapy, Karad

Date: 22nd Mar 2019, 26th Mar 2019

Participants: Dept. of Pediatric Physiotherapy, KCPT, KIMS, Karad

Beneficiaries: Children enrolled in ZilaParishad Schools in KaradTaluka

Goal: Assessment of differently abled children

Outcome:

1. Different levels of physical and behavioral problems in children
2. Setting treatment plan for specific needs in children

The session started with introduction between the faculty, school teachers and parents. Fifty children were assessed within two days. Their problems discussed with parents regarding physical and behavioral issues. The detailed data was collected for future reference.

Dean
Faculty of Physiotherapy
KCPT, KIMSDU
Karad

महाराष्ट्र MAHARASHTRA ◐ 2019 ◐ WN 151457

22 JUN 2020

Memorandum of Understanding for Academic and Research Collaboration

Between

Krishna Institute of Medical Sciences "Deemed to be University", Karad

And

iSERA Biological Pvt. Ltd., Shirala MIDC (Dist: Sangli), Maharashtra.

Preamble-

Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and iSERA Biological Pvt. Ltd., Shirala MIDC appreciate each other's for their contribution in the specialized field of each other (viz; academics: KIMSDU and iSERA Biological Pvt. Ltd., Shirala MIDC: industry) and are of opinion that academic collaboration between the two shall be of

Krishna Institute of Medical Sciences "Deemed To Be University" Karad

mutual benefits to both the institutes and to the students of Faculty of Allied Sciences (Microbiology, Biotechnology) of KIMSDU.

This agreement is made and entered into on 30th day of June 2020 between the KIMSDU and ISERA Biological Pvt. Ltd., Shirala MIDC (the parties) KIMSDU and ISERA Biological Pvt. Ltd., Shirala MIDC recognize their strengths in their respective fields and their mutual interest in integrating themselves in academic and research co-operation.

Therefore, KIMSDU, Karad and ISERA Biological Pvt. Ltd., Shirala MIDC agree to establish collaboration for research cooperation in areas of mutual interest and in accordance with terms and conditions set forth in this Memorandum of Understanding (MOU).

Educational / Industrial Visits and Vocational Training of the students of KIMSDU in ISERA Biological and to avail the research facility among both parties.

About Organizations:

1. **KIMSDU:**

   Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, a recognized Medical "Deemed to be University", accredited by NAAC with A grade, an ISO 9001:2015 certified University and is accredited by various reputed National and International bodies, having its office address at Malkapur, Karad (Dist. Satara) 415539 Maharashtra, India, website: www.kimskarad.in through its authorized signatory Dr. M. V. Ghorpade, Registrar, Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra. (hereinafter referred to as **'First Party'**)

2. **ISERA Biological Pvt. Ltd., Shirala MIDC:**

   ISRA is multi-faceted company, focusing not only on Innovation but also on training and development of the best and brightest scientific manpower. We strongly believe that in the free, liberal and resourceful atmosphere, our team of excellent scientists, will lead to the valuable inventions contributing in the scientific advancement beneficial to the mankind. (hereinafter referred to as **'Second Party'**).

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

A. Objectives of the MOU

The goal of this cooperation is to foster collaboration, to provide opportunity for global experience and to facilitate industry efforts, mutual benefit and frequent interactions. KIMSDU and iSERA Biological Pvt. Ltd., Shirala MIDC agree to explore the possibility of creation and advancement of knowledge with the following but not limited to these:

a. To promote interaction between students and faculty of KIMSDU and Technical and managerial personnel's from iSERA Biological Pvt. Ltd., Shirala MIDC in mutually beneficial areas.

b. To facilitate the on site training programme of students in specialized industry.

c. Promote collaborative Interdisciplinary research and development.

d. All activities arising from this MOU is self- supported or supported by the various funding agencies.

KIMSDU and iSERA Biological Pvt. Ltd., Shirala MIDC agree that the following technical descriptions will guide each proposed activity identified and agreed upon by the two institutions.

The terms of any financial arrangements will be subject to separate agreements made on case by case basis; such further agreements will include the names of those persons responsible for managing the implementation of collaborative activity.

B. Students Vocational Training and Educational Visits

1. Students Vocational Training

It is mutually agreed by KIMSDU, Karad and iSERA Biological Pvt. Ltd., Shirala MIDC Students of Microbiology/ Biotechnology who are willing to undergo Vocational Training and are recommended by KIMSDU, in each academic year, will be accepted by iSERA Biological Pvt. Ltd., Shirala MIDC for the training Quality Control/Quality Assurance/Production Departments/Sections for period of 2- 4 weeks.

2. Educational Visits of Students:

Educational Visits of Students of Microbiology and Biotechnology of Faculty of Allied Sciences of KIMSDU, Karad will be allowed by iSERA Biological Pvt. Ltd., Shirala MIDC once in year as per mutual convenience of both the organizations.

C. Promoting Research and Development

KIMSDU and iSERA Biological Pvt. Ltd., Shirala MIDC agreed to explore ways of encouraging collaboration between faculty and scientists/technical staff from the two institutions, in area of research and developments. The two institutions would encourage members of their faculty/technical staff to undertake short visits or take up fixed - term assignments as consultant and visiting professor. The term and conditions for each visit or an assignment would be worked out between the partner institutions.

D. Non-Exclusivity:

The relationship of the party under this MOU shall be non- exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular research agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

E. Tenure and Termination:

This MOU will take effect from the date it is signed by representatives of the two institutions. It will remain valid for a period of 05 years. This MOU may be amended by mutual written agreement prior to the date of review. Any extension to this MOU will be formally agreed in writing by the parties.

Either institution may terminate the MOU by written notice to the other institution six months in advance. Once terminated, neither KIMSDU nor iSERA Biological Pvt. Ltd., Shirala MIDC will be responsible for any losses financial or otherwise which the other institutions may suffer. However, KIMSDU and iSERA Biological Pvt. Ltd., Shirala MIDC will ensure that all activities in progress are all allowed to be completed.

F. Assignment:

It is understood by the parties herein this MOU is based on the professional competence and expertise of each party and hence neither party shall transfer assign this agreement or rights or obligations arising hereunder, either wholly or in part to any third party.

G. Arbitration Clause:

Each activity will be planned executed on mutually agreeable terms and conditions and therefore there is no likely hood of any dispute. However any dispute arise relating to any aspect of academic cooperation, The Registrar, Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and Managing Director, ISERA Biological Pvt. Ltd., Shirala MIDC will jointly resolve in spirit of independence, mutual respect and shared responsibility.

By signing below, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

PARTIES

Managing Director
iSERA Biological Pvt. Ltd.,
Shirala MIDC.
(Nandkumar Kadam)

iSERA BIOLOGICAL PVT. LTD.
Flat-504, Bldg. A, S.No. 67/2A/3,

Witness

The Registrar
KIMSDU, Karad
Near Dhebewadi Road,
Malkapur, Karad.

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad

Witness

The Director
iSERA Biological Pvt. Ltd.
Shirala MIDC.
(Mr. Dhairyasheel Yadav)

iSERA BIOLOGICAL PVT. LTD.
Flat-504, Bldg. A, S.No. 67/2A/3,
Navkar Residency, Bh-Chowky,
Bibwewadi, Pune-411037

The Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology),
KIMSDU, Karad.

Dean
Faculty of Allied Sciences (Microbiology, Biotechnology)
KIMS Deemed University Karad

Krishna Institute of Medical Sciences "Deemed to be University", Karad

Minutes of the Meting held between KIMSDU, Karad & iSERA Biological Pvt. Ltd. (Shirala MIDC, Dist- Sangli) and Yashraj Biotechnology Ltd., Navi Mumbai.

The meeting was held on 21/12/2020 for the preliminary discussions between iSERA Biological, Pvt. Ltd. (Shirala MIDC, Sangli) at KIMSDU, Karad and KIMSDU and Yashraj Biotechnology Ltd., Navi Mumbai regarding exploring the possibilities of collaboration between KIMSDU, Karad and Yashraj Biotechnology Ltd., Navi Mumbai.

Following members attended the meeting.

1) Dr. D. K. Agarwal – Additional Director of Research, KIMSDU, Karad.
2) Dr. S. C. Kale – Dean, Faculty of Allied Sciences (Microbiology, Biotechnology), KIMSDU, Karad.
3) Dr. Kailas D. Datkhile – Incharge, Molecular & Genetic Laboratory, KIMSDU, Karad.
4) Mr. Nandkumar Kadam- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).
5) Dr. Dhairyashil Yadav- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).
6) Dr. Sushilkumar Ramdasi – Scientist B Manager, Stem cell Dept., Yashraj Biotech. Ltd., Navi Mumbai.

Detailed discussion on following points were made:

1) To promote interaction between students and faculties of KIMSDU, Karad and Technical and managerial personals from iSERA Biological Pvt. Ltd. MIDC, Shirala.
2) To facilitate onsite training programme of students in the industry.
3) The research proposal concept for collaboration between the two institutes put forth by Yashraj Biotechnology Ltd. , Navi Mumbai was discussed in detail, regarding the collaborative research on stem cells and regenerative medicine was discussed.
4) Further it was also decided to work on a common platform among three institutions for up gradation of Research being carried out by the students of KIMSDU, upon which both Institution shown their willingness.
5) A brief presentation of Yash Raj Biotech pvt Ltd, Navi Mumbai was presented in front of Honorable Chancellor in the Board room, through which they have summarized about their present status and contribution in Research and how both Institution can work together particularly in the field of Onchology , Gynaecology and in few other areas.

After the presentation honorable Chancellor has highlighted the status of KIMSDU in the field of hospital services with special emphasis on deptt of Onchology , Gynaecology and Molecular biology etc. at the end of the meeting Honorable Chancellor has given his preliminary consent to proceed for signing

MoU with Yash Raj Pvt. Ltd., Navi Mumbai, and asked Additional Director of Research for further proceedings.

During the proceeding of meeting Dr Kailash Datkhile also highlighted the thrust areas of common interest of all three Institution and how everyone can be benefitted for the welfare of society.

Dr Kale has particularly pointed out about the Faculty exchange and hands on training, on site visit of students and providing training to the selective students through both Institutions.

Mr Kadam and Mr Yadav from iSERA has deliberated with area of their expertise and shown keen interest to work with KIMSDU as they are already a partner Institution through MoU which has been signed earlier.

Dr D K Agrawal has pointed out about the need of improving post graduate students through Academic and Research, he has emphasized upon the Project/Dissertation allotted to the students should be upon some Application theme, and few expert persons from other department of KIMSDU and from partner Institution to whom we are collaborated through MoU can be opted as co Guide for the purposes of completion of Project work to make them more employable and to inculcate research culture among students in holistic manner.

After detailed discussions following resolutions were made.

Resolution 1: Resolved that the research proposal for collaborative research between KIMSDU, Karad and Yashraj Biotech Ltd. , Navi Mumbai be accepted in principle.

Resolution 2: Resolved that draft agreement of memorandum of understanding (MOU) between KIMSDU, Karad and Yashraj Biotech Ltd. , Navi Mumbai be prepared for consideration at the earliest.

Resolution 3: Resolved that in the MOU between KIMSDU, Karad and Yashraj Biotechn. Ltd., Navi Mumbai, provision should be kept for the training of students and faculty of KIMSDU, Karad at Yashraj Biotech. Ltd. as well for the visits of the technical and managerial personals from Yashraj Biotech Ltd. , Navi Mumbai to the KIMSDU, Karad to help to promote the research activities.

Name and Signature

1) Dr. D. K. Agarwal – _____
2) Dr. S. C. Kale – _____
3) Dr. Kailas D. Datkhile – _____
4) Mr. Nandkumar Kadam- _____
5) Dr. Dhairyashil Yadav- _____
6) Dr. Sushilkumar Ramdasi _____

Faculty of Allied Sciences
(Microbiology, Biotechnology)

Brief Report of MOU related Activities
between
Krishna Institute of Medical Sciences "Deemed to be University", Karad
&
iSERA Biological, Pvt. Ltd. (Shirala MIDC, Sangli) (2019-20)

1) **Organization of the meeting with industry having MOU with KIMSDU:**
The meeting was held on 21/12/2020 for the preliminary discussions between iSERA Biological, Pvt. Ltd. (Shirala MIDC, Sangli) at KIMSDU, Karad and KIMSDU and Yashraj Biotechnology Ltd., Navi Mumbai regarding exploring the possibilities of collaboration between KIMSDU, Karad and Yashraj Biotechnology Ltd., Navi Mumbai. After discussion it was accepted in principle to go in for collaborative research and prepare the final draft of MOU for approval in the next meeting.

Following members attended and participated in discussion.

1) Dr. D. K. Agarwal – Additional Director of Research, KIMSDU, Karad.

2) Dr. S. C. Kale – Dean, Faculty of Allied Sciences (Microbiology, Biotechnology), KIMSDU, Karad.

3) Dr. Kailas D. Datkhile – Incharge, Molecular & Genetic Laboratory, KIMSDU, Karad.
4) Mr. Nandkumar Kadam- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).

5) Dr. Dhairyashil Yadav- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).

6) Dr. Sushilkumar Ramdasi – Scientist B Manager, Stem cell Dept., Yashraj Biotech. Ltd., Navi Mumbai.

3) As a part of enhancing the interactions between industries and our Faculty of Allied Sciences (Microbiology, Biotechnology) we organized the visits of personells from the following industries (with whom KIMSDU has MOU) to our Faculty of Allied Sciences. Following persons from industries visited our Faculty of Allied Sciences and interacted with the Dean and other faculty members & Ph.D. research workers on various aspects of collaborative activities as mentioned in MOU.

Name of the persons visited & Industry	Date of Visit
1) Nandkumar Kadam - iSERA Biological Pvt. Ltd., Shirala MIDC, (Dist.- Sangli)	14/09/2020
2)Dhairyashil Yadav - iSERA Biological Pvt. Ltd., Shirala MIDC, (Dist.- Sangli)	14/09/2020

21/12/2020

Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)

Faculty of Allied Sciences
(Microbiology, Biotechnology)

Brief Report of MOU related Activities in January 2021
between
Krishna Institute of Medical Sciences "Deemed to be University", Karad
&
Krishna Institute of Medical Sciences "Deemed to be University", Karad
&
iSERA Biological, Pvt. Ltd. (Shirala MIDC, Sangli)

An Interactive session for M. Sc. Part II Microbiology and Biotechnology students and Faculty with industry Technical/Managerial persons from iSERA Biological Pvt. Ltd. Shirala MIDC, (Dist: Sangli) on the topic: **"What are the Basic subject knowledge and soft skill requirements for Microbiology and Biotechnology students seeking jobs in Pharmaceutical and Biotech Industries?"** was organized on 21st January 2021 between 4:00 p.m. to 5:00p.m. in the Faculty of Allied Sciences.

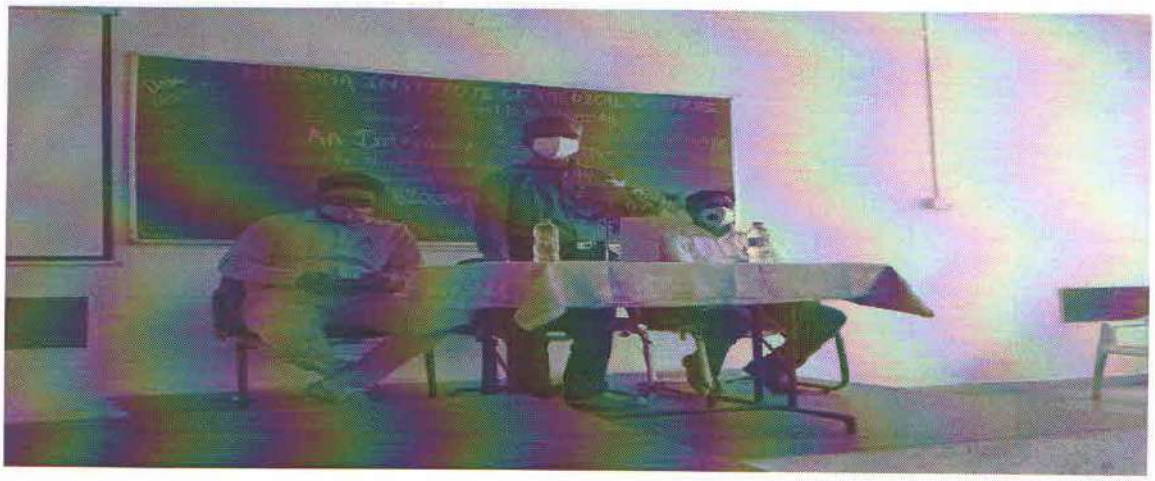
Following two Technical/Managerial persons from iSERA participated and guided the students.

1) Mr. Nandkumar Kadam
   Director, iSERA Biological Pvt. Ltd. Shirala MIDC (Dist: Sangli)

2) Mr. Dhairyashil Yadav
   Director, iSERA Biological Pvt. Ltd. Shirala MIDC (Dist: Sangli)

Interactive session was very interesting and useful.

Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)



Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)

महाराष्ट्र MAHARASHTRA ◐ 2019 ◐ WN 151456

22 JUN 2020

Memorandum of Understanding for Academic Collaboration

Between

Krishna Institute of Medical Sciences "Deemed to be University", Karad

And

Kshitij Biotech Corporation,

1480/1, Wing, Tal: Karad (Dist: Satara), Maharashtra, Pin Code: 415122.

Preamble-

Krishna Institute of Medical Sciences "Deemed to be University", Karad (KIMSDU) and Kshitij Biotech Corporation (KBC), Wing Tal: Karad appreciate each other's for their contribution in the specialized field of each other (viz: academics KIMSDU and KBC: industry) and are of opinion

Krishna Institute of Medical Sciences 'Deemed To Be University', Karad

that academic collaboration between the two shall be of mutual benefits to both the institutes and to the students of Faculty of Allied Sciences (Microbiology, Biotechnology) of KIMSDU.

This agreement is made and entered into on 30th day of June 2020 between the KIMSDU and Kshitij Biotech Corporation, Wing, Tal: Karad. (the parties) KIMSDU and Kshitij Biotech Corporation recognize their strengths in their respective fields and their mutual interest in integrating engaging themselves in academic and research co-operation.

Therefore, KIMSDU, Karad and KBC, Karad agree to establish collaboration for research cooperation in areas of mutual interest and in accordance with terms and conditions set forth in this Memorandum of Understanding (MOU).

Educational / Industrial Visits and Vocational Training of the students of KIMSDU in KBC and to avail the research facilities to each other as per availability.

About Organizations:

1. **KIMSDU:**

   Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra, a recognized Medical "Deemed to be University", accredited by NAAC with A grade, an ISO 9001:2015 certified University and is accredited by various reputed National and International bodies, having its office address at Malkapur, Karad (Dist. Satara) 415539 Maharashtra, India, website: www.kimskarad.in through its authorized signatory Dr. M. V. Ghorpade, Registrar, Krishna Institute of Medical Sciences "Deemed to be University", Karad, Maharashtra (hereinafter referred to as **'First Party'**)

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

2. **Kshitij Biotech Corporation:**

Kshtitij Biotech Corporation was founded in the year 2008 at Wing, Tal. Karad, Dist. Satara by Mr. Tushar Shinde, Proprietor. Objective of starting this project was to provide employment opportunities to women in rural area of Wing and periphery villages and introduce a project with new technology in agriculture in Satara District. They produce Tissue culture Banana Plants and Strawberry plants .Laboratory is certified by the Department of Biotechnology, Govt. of India. We produce 10 lacs plants per year. Currently we are producing two varieties in banana. We are also engaged in the research of new varieties of strawberry.

(hereinafter referred to as **'Second Party'**).

A. Objectives of the MOU

The goal of this cooperation is to foster collaboration, to provide opportunity for global experience and to facilitate industry efforts, mutual benefit and frequent interactions. KIMSDU and Kshitij Biotech Corporation agree to explore the possibility of creation and advancement of knowledge with the following but not limited to these:

a. To promote interaction between students and faculty of KIMSDU and Technical and managerial personnel's from Kshitij Biotech Corporation in mutually beneficial areas.
b. To facilitate the on site training programme of students in specialized industry.
c. Promote collaborative interdisciplinary research and development.
d. All activities arising from this MOU is self- supported or supported by the various funding agencies.

Krishna Institute of Medical Sciences "Deemed To Be University", Karad

KIMSDU and Kshitij Biotech Corporation agree that the following technical descriptions will guide each proposed activity identified and agreed upon by the two institutions.

The terms of any financial arrangements will be subject to separate agreements made on case by basis; such further agreements will include the names of those persons responsible for managing the implementation etc. of collaborative activity.

B. Students Vocational Training and Educational Visits

1. Students Vocational Training

It is mutually agreed by KIMSDU, Karad and Kshitij Biotech Corporation, Wing Tal: Karad (Dist: Satara) that Students of Microbiology/ Biotechnology who are willing to undergo Vocational Training and are recommended by KIMSDU, in each academic year, will be accepted by Kshitij Biotech Corporation for the training in their Plant Tissue Culture Laboratory for period of 2- 4 weeks.

2. Educational Visits of Students:

Educational Visits of Students of Microbiology and Biotechnology of Faculty and researcher of Allied Sciences of KIMSDU, Karad will be allowed by Kshitij Biotech Corporation once in year as per mutual convenience of both the organizations.

C. Promoting Research and Development

KIMSDU and Kshitij Biotech Corporation agreed to explore ways of encouraging collaboration between faculty and scientists/technical staff from the two institutions, in area of research and developments. The two institutions would encourage members of their faculty/technical staff to undertake short visits or take up fixed - term assignments as

consultant and visiting professor. The term and conditions for each visit or an assignment would be worked out between the partner institutions.

D. Non-Exclusivity:

The relationship of the party under this MOU shall be non- exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular research agreement, the participants may agree to limit each party's right to collaborate with others on that subject.

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Either institution may terminate the MOU by written notice to the other institution six months in advance. Once terminated, neither KIMSDU nor Kshitij Biotech Corporation will be responsible for any losses financial or otherwise which the other institutions may suffer. However, KIMSDU and Kshitij Biotech Corporation will ensure that all activities in progress are all allowed to be completed.

F. Assignment:

It is understood by the parties herein this MOU is based on the professional competence and expertise of each party and hence neither party shall transfer assign this agreement or rights or obligations arising hereunder, either wholly or in part to any third party.

G. Arbitration Clause:

Each activity will be planned executed on mutually agreeable terms and conditions and therefore there is no likely hood of any dispute. However any dispute arise relating to any aspect of academic cooperation, The Registrar, Krishna Institute of Medical Sciences "Deemed to be University", Karad(KIMSDU) and Managing Director, Kshitij Biotech Corporation (KBC) will jointly resolve in spirit of independence, mutual respect and shared responsibility.

By signing below, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

PARTIES

Managing Director
Kshitij Biotech Corporation
1480/1, Wing,
Tal: Karad (Dist: Satara)
Maharashtra Pin Code: 415122

The Registrar
KIMSDU, Karad
Near Dhebewadi Road,
Malkapur, Karad.
Maharashtra Pin Code: 415539

REGISTRAR
Krishna Institute of Medical Sciences
"Deemed To Be University", Karad.

Witness B.A.Koli

Accountant
Kshitij Biotech Corporation,
1480/1, Wing.
Tal. Karad. (Dist.-Satara)
Maharashtra Pin Code-415122
Mr. Bapurao Anna Koli
B.A.Koli

Witness

The Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology),
KIMSDU, Karad.

Dean
Faculty of Allied Sciences (Microbiology, Biotechnology)
KIMS Deemed University, Karad

Faculty of Allied Sciences
(Microbiology, Biotechnology)

Brief Report of MOU related Activities (2019-20)

1) Industrial Visits :

1. Industrial (educational) visits of M. Sc. Part I semester I Microbiology and Biotechnology students and Faculty members of Faculty of Allied Sciences was organized to visit Kshitij Biotech Corporation, Wing(Dist.- Satara)on 28th November, 2019.
2. Our two faculty members Dr. S. C. Kale and Mrs. Snehal A. Masurkar visited the industry - **Kshitij Biotech Corporation, Wing (Dist.- Satara)**on 27th December, 2019, and interacted with the Technical and managerial personells of the industry. Also explored the possibility of MOU with industry.

Note: These two visits were prior to our official MOU with the industry **(Kshitij Biotech Corporation, A/P Wing, Near Tarangan English Medium School, Shidewadi Phata, Tal: Karad. (Dist. Satara.)**

2) Organization of the meeting with industry having MOU with KIMSDU: The meeting was held on 21/12/2020 for the preliminary discussions between iSERA Biological, Pvt. Ltd. (Shirala MIDC, Sangli) at KIMSDU, Karad and KIMSDU and Yashraj Biotechnology Ltd., Navi Mumbai regarding exploring the possibilities of collaboration between KIMSDU, Karad and Yashraj Biotechnology Ltd., Navi Mumbai. After discussion it was accepted in principle to go in for collaborative research and prepare the final draft of MOU for approval in the next meeting.

Following members attended and participated in discussion.

1) Dr. D. K. Agarwal – Additional Director of Research, KIMSDU, Karad.
2) Dr. S. C. Kale – Dean, Faculty of Allied Sciences (Microbiology, Biotechnology), KIMSDU, Karad.
3) Dr. Kailas D. Datkhile – Incharge, Molecular & Genetic Laboratory, KIMSDU, Karad.
4) Mr. Nandkumar Kadam- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).
5) Dr. Dhairyashil Yadav- Director, iSERA Biological Pvt. Ltd., Shirala MIDC (Dist- Sangli).
6) Dr. Sushilkumar Ramdasi – Scientist B Manager, Stem cell Dept., Yashraj Biotech. Ltd., Navi Mumbai.

3) As a part of enhancing the interactions between industries and our Faculty of Allied Sciences (Microbiology, Biotechnology) we organized the visits of personells fro the following industries (with whom KIMSDU has MOU) to our Faculty of Allied Sciences. Following persons from industries visited our Faculty of Allied Sciences and interacted with the Dean and other faculty members & Ph.D. research workers on various aspects of collaborative activities as mentioned in MOU.

Name of the persons visited & Industry	**Date of Visit**
1) Nandkumar Kadam - iSERA Biological Pvt. Ltd., Shirala MIDC, (Dist.- Sangli)	14/09/2020
2)Dhairyashil Yadav - iSERA Biological Pvt. Ltd., Shirala MIDC, (Dist.- Sangli)	14/09/2020
3)Tushar Shinde - Kshitij Biotech Corporation, Wing, (Dist.- Satara)	15/09/2020

Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)

O/C

Krishna Institute of Medical Sciences "Deemed To Be University", Karad
Faculty of Allied Sciences

Ref.No. – KIMSDU / FAS / 1002 /2019 Date: 27 / 11/2019

To,

The Managing Director

Kshitij Biotech Corporation,

A/P Wing, Near Tarangan English Medium School,

Shidewadi Phata, Tal: Karad. (Dist. Satara.)

Sub: Permission for educational visit of our M.Sc. Part I Microbiology Sem I and M.Sc. Part I Biotechnology Sem I students to your Industry.

Respected Sir,

Our M.Sc. Part I Microbiology Sem I and M.Sc. Part I Biotechnology Sem I students are on Educational Visit / Tour on Thursday, 28th November 2019 in the morning. We wish to bring them to visit your Industry, particularly the Tissue Culture Laboratory.

We, therefore, request you, sir, to grant us the necessary permission for the same. We have planned to reach there up to 11.00 a.m.

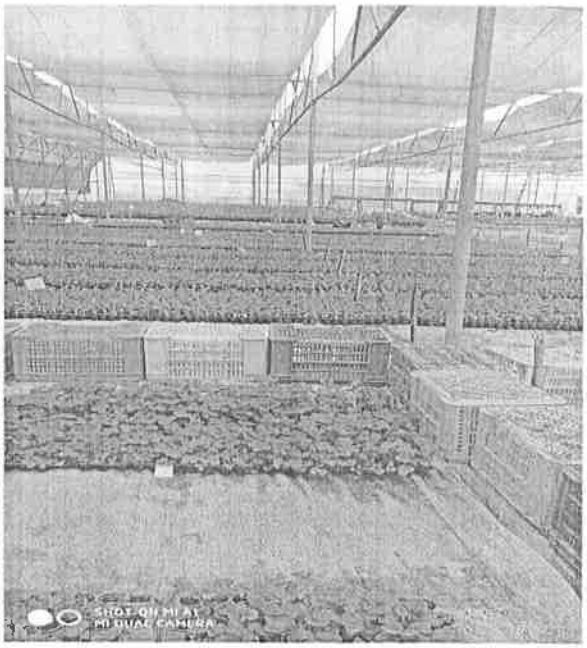
Please confirm your permission.

Thanking you in anticipation.

Yours faithfully,

Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)


KSHITIJ BIOTECH
CORPORATION
Plant Tissue Culture Laboratory

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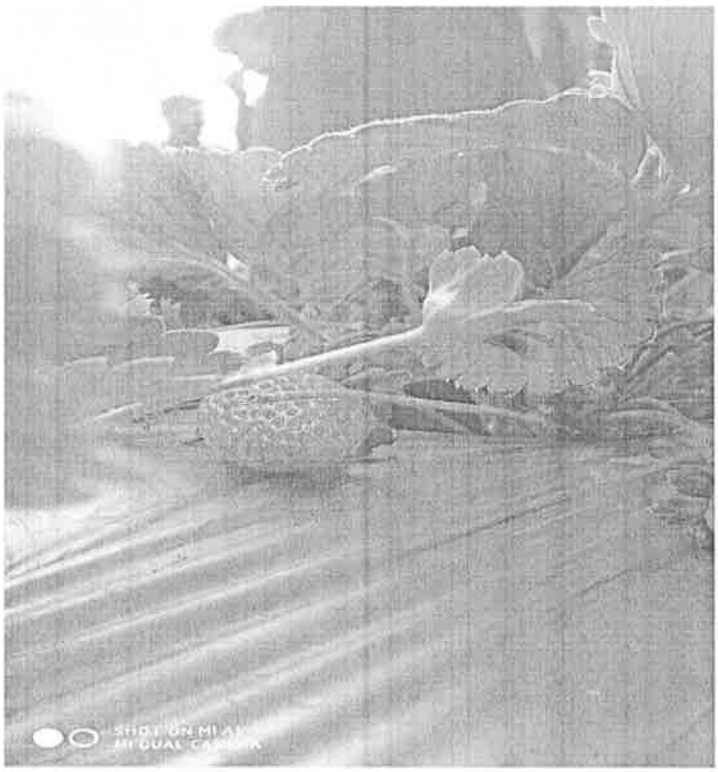


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Krishna Institute of Medical Sciences "Deemed To Be University", Karad

Faculty of Allied Sciences

Ref. No. – KIMSDU / FAS / 380 /2021 **Date: 25/ 02/ 2021**

To,
Dr. D. K. Agarwal
Additional Director of Research,
KIMSDU, karad

Sub: Some of the photographs of visit of students of the Faculty of Allied Sciences (Microbiology, Biotechnology) to the Industries

Respected Sir,
With reference to your E mail 25/02/2021 asking for some of photographs and Letters of Industrial Visits of our Students and Faculty. Please find herewith relevant photographs and letters of Correspondence. (Xerox copies).

Thanking You,

Dr. S. C. Kale
Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)
KIMSDU, Karad

Faculty of Allied Sciences
(Microbiology, Biotechnology)

Brief Report of MOU related Activities
between
Krishna Institute of Medical Sciences "Deemed to be University", Karad
&
Kshitij Biotech Corporation, Wing (Dist.- Satara)
(2019-20)

1) **Industrial Visits :**

   1. Industrial (educational) visits of M. Sc. Part I semester I Microbiology and Biotechnology students and Faculty members of Faculty of Allied Sciences was organized to visit Kshitij Biotech Corporation, Wing(Dist.- Satara)on 28th November, 2019.

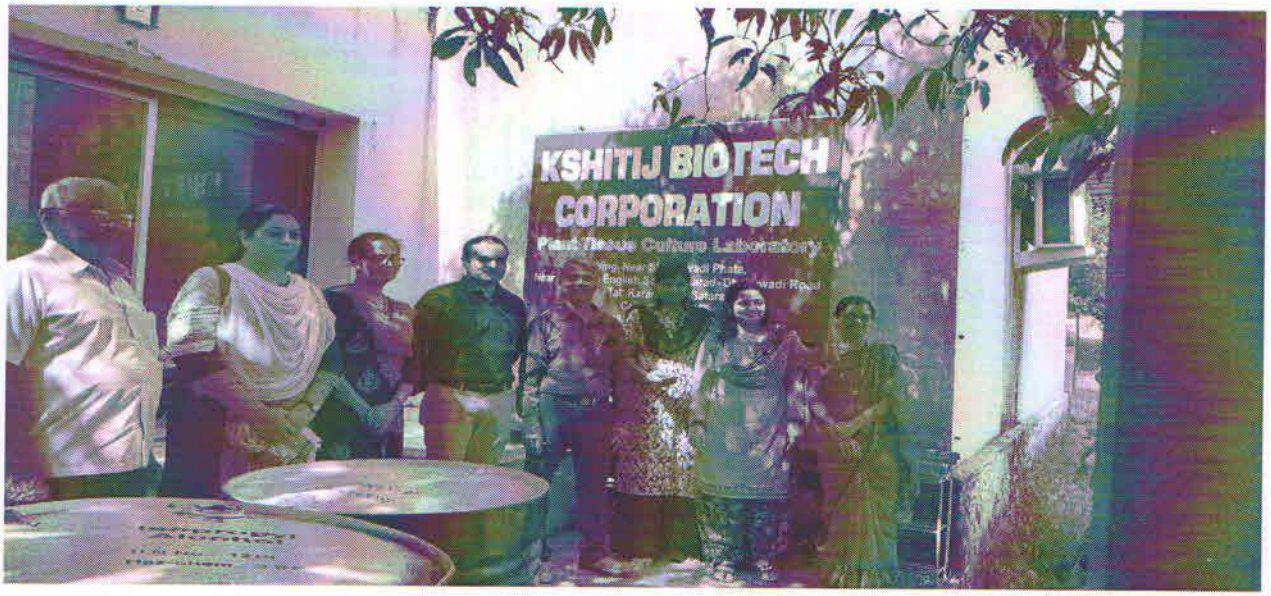
   2. Our two faculty members Dr. S. C. Kale and Mrs. Snehal A. Masurkar visited the industry - **Kshitij Biotech Corporation, Wing (Dist.- Satara)**on 27th December, 2019, and interacted with the Technical and managerial personells of the industry. Also explored the possibility of MOU with industry.

   Note: These two visits were prior to our official MOU with the industry **(Kshitij Biotech Corporation, A/P Wing, Near Tarangan English Medium School, Shidewadi Phata, Tal: Karad. (Dist. Satara.)**

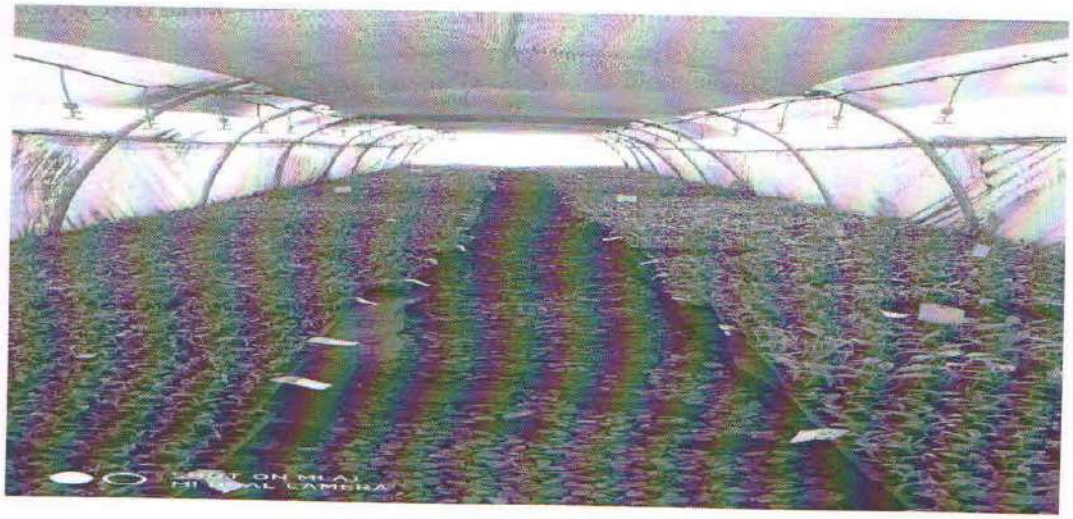
2) As a part of enhancing the interactions between industries and our Faculty of Allied Sciences (Microbiology, Biotechnology) we organized the visits of personells from the following industries (with whom KIMSDU has MOU) to our Faculty of Allied Sciences. Following persons from industries visited our Faculty of Allied Sciences and interacted with the Dean and other faculty members & Ph.D. research workers on various aspects of collaborative activities as mentioned in MOU.

Name of the persons visited & Industry	Date of Visit
1)Tushar Shinde - Kshitij Biotech Corporation, Wing, (Dist.- Satara)	15/09/2020

Dean
Faculty of Allied Sciences
(Microbiology, Biotechnology)



29/12/2020



Dean 27/12/2020
Faculty of Allied Sciences
(Microbiology, Biotechnology)

Krishna Institute of Allied Sciences

Report of the Additional MOU related activity during the month of March 2021 – upto 15th March, 2021 between Krishna Institute of Medical Sciences "Deemed to be University", Karad & Kshitij Biotech Corporation, Wing (Dist.- Satara)

Industrial Visits :

1) Industrial (educational) visits of M. Sc. Part I semester I Microbiology, Biotechnology and Pharmaceutical Microbiology students and Faculty members of Krishna Institute of Allied Sciences was organized to visit Kshitij Biotech Corporation, Wing(Dist.- Satara)on 15th March, 2021. Total number of 47 students as detailed below attended the industrial (educational) visit:

i) M. Sc. Part I Semester I Microbiology – 25

ii) M. Sc. Part I Semester I Biotechnology – 16

iii) M. Sc. Part I Semester I Pharmaceutical Microbiology – 06

2) Our Four faculty members, Dr. S. C. Kale, Mrs. Snehal A. Masurkar, Mrs. Shilpa S. Ruikar & Mrs. Jayashri P. Nanaware visited the industry – **Kshitij Biotech Corporation, Wing (Dist.- Satara)**on 15thMarch,2021, and interacted with the Technical and managerial personells of the industry.

Dean
Krishna Institute of Allied Sciences

15/03/2021

Dean 15/9/2021
Krishna Institute of Allied Sciences