



**YENEPOYA**

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956

Accredited by NAAC with 'A' Grade

### Details of the Collaborative Activity

2018-20

**Name of the Collaborating Institute:** Department of Microbiology, MAHE Institute of Dental Sciences, Puducherry, India

**Name of the Collaborating Department from YDU:** Yenepoya Research Center

**Year of MoU:** 2015 and 2020

#### Activities:

#### Joint Research:

Two Research Scholars from Yenepoya have conducted part of their PHD work in Department of Microbiology, MAHE Institute of Dental Sciences, Puducherry, India

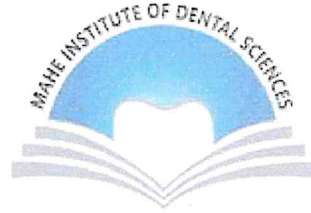
#### Joint Publication:

**Anjali K, Arun AB, Bastian TS, Parthiban R, Selvamani M, Adarsh H.** Oral microbial profile in oral cancer patients before and after radiation therapy in a cancer care center–A prospective study. *Journal of Oral and Maxillofacial Pathology*. 2020 Jan; 24(1):117.

ATTESTED

**Dr.Gangadhara Somayaji K.S.**  
Registrar

Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka



**MINDS**

# MAHE INSTITUTE OF DENTAL SCIENCES & HOSPITAL

A Unit of Mahe Educational & Charitable NRI Trust

## CERTIFICATE

This is to certify that Dr. Selvamani M, has undertaken a part of the PhD research "Age estimation in adult population of Kerala using Pulp Tooth Ratio(PTR) method of maxillary and mandibular permanent anterior teeth" in Oral Pathology & Microbiology at Mahe Institute of Dental Sciences & Hospital, Chalakkara, Mahe, U.T of Puducherry from 28.10.2020 till date.

Research Co-guide

PROFESSOR A. H. D.,  
Department of Oral Pathology &  
Microbiology  
Mahe Institute of Dental Sciences & Hospital  
Chalakkara, Mahe - 673 310



Signature of the Department Head/  
Institutional Head

**Principal**

Mahe Institute of Dental Sciences & Hospital

**MAHE**

**ATTESTED**

Dr. Gangadhara Somayaji K.S.  
Registrar  
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University Road, Derlakatte  
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# Oral microbial profile in oral cancer patients before and after radiation therapy in a cancer care center – A prospective study

K Anjali<sup>1</sup>, A B Arun<sup>2</sup>, T S Bastian<sup>3</sup>, R Parthiban<sup>4</sup>, M Selvamani<sup>3</sup>, H Adarsh<sup>5</sup>

Departments of <sup>1</sup>Microbiology and <sup>3</sup>Oral Pathology and Microbiology, Mahe Institute of Dental Sciences, Puducherry, Yenepoya Research Center, Yenepoya University, Mangalore, <sup>5</sup>Department of Dentistry, BGS Global Institute of Medical Sciences, Bengaluru, Karnataka, <sup>4</sup>Department of Microbiology, Malabar Cancer Center, Thalassery, Kerala, India

## Abstract

**Background:** Head and neck cancer is the sixth most common cancer reported worldwide. In many cases, the level of aggressiveness of therapy adopted in cancer patients may cause the alteration in oral microbiota; the emergence of potential pathogens may cause opportunistic infections in already immune-compromised individuals leading to increases in morbidity and mortality. Hence, this study was conducted to assess the oral microbial profile in oral cancer patients before and after radiotherapy.

**Materials and Methods:** A total of 145 oral swabs were collected before radiotherapy ( $n = 96$ ), 3 months postradiotherapy ( $n = 25$ ), 6 months postradiotherapy ( $n = 12$ ) and controls ( $n = 12$ ). The samples were inoculated into brain–heart infusion broth and later in different media for bacterial isolation. The isolates were subjected to phenotypic characterization by automatic identification system.

**Results:** Among the 96 samples studied from the preradiotherapy patient samples, *Streptococcus* species ( $n = 28$ ) were the predominant isolate, followed by *Staphylococcus* species ( $n = 16$ ), *Enterobacter* species ( $n = 6$ ) and *Enterococcus* species ( $n = 6$ ). Of the 25 samples studied 3 months after radiotherapy, *Klebsiella pneumoniae* ( $n = 4$ ) was isolated and 12 samples studied after 6 months of radiotherapy *Candida* species ( $n = 4$ ) and *Pediococcus* species ( $n = 3$ ) were isolated. Among the control group ( $n = 12$ ) screened, *Streptococcus acidominimus* ( $n = 3$ ) is the predominant bacteria isolated.

**Conclusion:** High prevalence of *Streptococcus* sp. was found in patients of oral cancer before radiotherapy, while *Candida albicans* and *Klebsiella* species and *Pediococcus* species are the significant pathogens isolated in postradiotherapy cancer patients.

**Keywords:** Oral microbial profile, oral microbiota, oral squamous cell carcinoma, radiotherapy

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**Submitted:** 14-Jul-2019, **Accepted:** 14-Oct-2019, **Published:** 08-May-2020

## INTRODUCTION

Head-and-neck cancer is the world's sixth most common type of cancer. More than 600,000 new patients are

diagnosed and about 350,000 individuals die from this disease worldwide each year.<sup>[1]</sup> Occurrence of oral cancer is on the rise, causing major global health problem. Incidence

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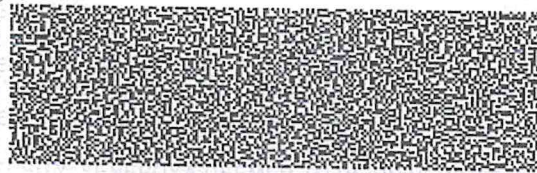
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### Memorandum of Understanding

Between

Yenepoya (Deemed to be University), Mangalore  
and

MAHE Institute of Dental Sciences & Hospital, MAHE

Whereas, both parties have decided to collaborate to work towards the objectives envisioned in the annexed MOU and that, it has been progressing well in letter and spirit, the furtherance of the collaboration is reaffirmed by way of execution of this document adhering to terms of reference cited in original documents dated 05.08.2015 for a period of five years.

Dr.Gangadhara Somayaji K.S.  
Registrar

Principal  
MAHE Institute of  
Dental Sciences & Hospital

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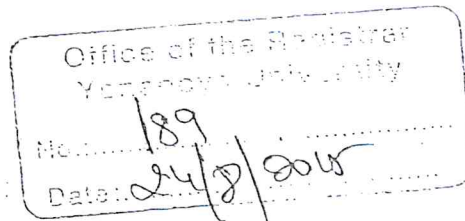
# MAHE INSTITUTE OF DENTAL SCIENCES & HOSPITAL

MINDS/YU-MoU-MHE/2015

19.08.2015

To

The Registrar,  
Yenepoya University,  
Mangalore - 575 018:



Sir,

Sub : MoU between Yenepoya University & Mahe Institute of  
Dental Sciences & Hospital-reg.

I am returning herewith duly signed Memorandum of Understanding  
for favour of necessary action.

Thanking you,

Yours faithfully,

Dr. Anil Melath

PRINCIPAL

Principal

Mahe Institute of  
Dental Sciences & Hospital

MAHE  
ATTESTED

Encl:a.a

Registrar  
Yenepoya University



✓ copy NAAC office, YU

MoU between Yenepoya University, Deralakatte and Mahe Institute of Dental  
Sciences and Hospital, Chalakkara, Mahe, U.T of Puducherry

This MoU is entered into on 5<sup>th</sup> day of August 2015 and executed between Yenepoya University, Deralakatte, Mangalore – 575 018 (First Party) and Mahe Institute of Dental Sciences and Hospital, Chalakkara, Mahe, U.T. of Puducherry – 673 310 (Second Party)

1. The expression and thoughts of both the parties shall be final with respect to this MoU.
2. The purpose of this MoU is to enter into Collaborative Research with the Second party on the projects undertaken by Ms. Anjali K. that research scholar can register for Ph.D at the Yenepoya University, Mangalore and work be done at both the institutions depending on the facilities available within the framework of UGC Regulations.
3. Mahe Institute of Dental Sciences and Hospital, Mahe will be a Centre for Research Collaboration with Yenepoya University for this purpose.
4. Research publications of the Ph.D candidate of Second Party will be under the First Party and the eligible teachers of Second Party will be shown as adjunct faculty of Yenepoya University.
5. There will be no expenditure from the First Party side as the research fund will be generated by the Second Party.
6. Persons working in the Research Centre of the Second Party and holding degree could work for Ph.D degree so as to enhance their career.
7. Ph.D candidate of Second Party will abide by the rules and regulations with regard to Ph.D programme and do course work prescribed by the Yenepoya University and will have personal interaction with the Guides of First Party.

**ATTESTED**  
  
Dr.Gangadhara Somayaji K.S.  
Registrar  
Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka

8. The agreement will come into effect on the day of approval by both, First Party and Second Party which will have duration of five years. Thereafter, it will be renewed as per the requirements.
9. The following action plan be taken:
  - a. Application by the Centre for Research Collaboration to recognized by the Yenepoya University, along with the details of the Centre and the facilities available as well as biodata of potential Ph.D Guides.
  - b. Visit of senior executives of the Yenepoya University to the Centre for Research Collaboration to inspect the facilities available at the Centre.
  - c. Recognition of the Centre for Research Collaboration by the Yenepoya University authorities for research collaborations.
  - d. Recognition of the eligible co-guides available at Centre for Research Collaboration by the Yenepoya University.
  - e. Registration of the Ph.D student as per the Yenepoya University rules.
  - f. Each Ph.D student will have one Guide at the Yenepoya University and one Co-guide from the Research Centre.
  - g. All of them should pass the preliminary examination conducted by the Yenepoya University within the prescribed time limit.
  - h. All the rules of the Ph.D programme, as amended from time to time by the Yenepoya University will be applicable to these students at the Research Centre.

That both the parties will endeavor to settle any controversy, disputes, differences or claims whatsoever related to this Memorandum of Understanding including the existence, validity, interpretation, performance, termination or breach thereof, by arbitration through a Sole Arbitrator to be appointed by the "First Party". The Arbitration and Conciliation Act 1996, shall govern the arbitration proceedings. The arbitration will be in the Hon'ble Courts of Karnataka and the language of arbitration shall be English.

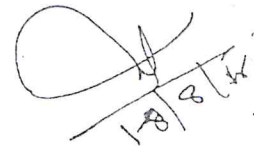
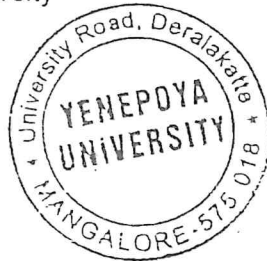
  
Dr.Gangadhara Somayaji K.S.  
Registrar  
Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore- 575 018, Karnataka

Both parties have read over the agreement and have clearly understood its terms and accept the same as binding.

IN WITNESS WHEREOF the parties hereto, have set and subscribed their respective hands the day, month and year hereinabove written.



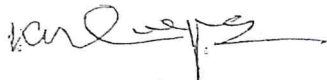
(Prof. (Dr.) C.V. Raghuvver)  
Registrar, Yenepoya University  
Mangalore – 575 018



Principal  
Mahe Institute of Dental Sciences &  
Hospital  
Chalakkara, Mahe, U.T of  
Puducherry – 673 310

Witness

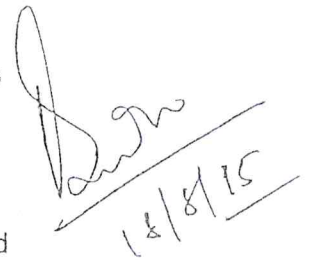
K.B. LAKSHMINARAYANA  
Supdt - Academics.



Signed  
On behalf of First Party

Date: 05-08-2015

Witness



12/8/15

Signed  
On behalf of Second Party

CEO  
Mahe Institute of Dent  
Date: Sciences & Hospital,  
Mahe.

ATTESTED  


Dr. Gangadhara Somayaji K.S.  
Registrar  
Yenepoya (Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka





**MoU between Yenepoya University, Deralakatte, and Mahe Institute of Dental Sciences & Hospital, Challakkara, Mahe, U.T. of Puducherry - 673310**

This MoU is made on 09<sup>th</sup> day of October, 2020, and executed between Yenepoya (Deemed to be University) , Deralakatte, Mangalore – 575 018 (First Party) and Mahe Institute of Dental Sciences & Hospital, Challakkara, Mahe, U.T. of Puducherry – 673310 (Second Party)

1. The expression and thoughts of both the parties shall be final with respect to this MoU.
2. The purpose of this MoU is to enter into Collaborative Research with the Second party on the projects undertaken by Dr. Selvamani M., so that the research scholar can register for Ph.D at the Yenepoya (Deemed to be University, Mangalore, and work be done at both the institutions depending on the facilities available within the framework of UGC Regulations.
3. Mahe Institute of Dental Sciences & Hospital will be a Centre for Research Collaboration with Yenepoya (Deemed to be University) for this project.
4. There will be no expenditure from the First Party side as the research fund will be generated by the Second Party.
5. Dr. Selvamani M. working with the Second Party and holding Post-graduate degree could work for Ph.D degree so as to enhance their career.
6. Ph.D candidate of Second Party will abide by the rules and regulations with regard to Ph.D programme, and do course work prescribed by the Yenepoya (Deemed to be University), and will have personal interaction with the Guides of First Party.

..... 2

ATTESTED  


Dr.Gangadhara Somayaji K.S.  
Registrar  
Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka

7. The MoU will come into effect on the day of approval by both, First Party and Second Party which will have duration of five years. Thereafter, it will be renewed as per the requirements.
8. The following action plan be taken:
  - a. Application by the Centre for Research Collaboration to be recognized by the Yenepoya (Deemed to be University), along with the details of the Centre and the facilities available as well as biodata of potential Ph.D Guides.
  - b. Visit of senior executives of the Yenepoya (Deemed to be University) to the Department of Oral Pathology and Microbiology for Research Collaboration to inspect the facilities available in the Department for the project of Dr. Selvamani M.
  - c. Recognition of the Mahe Institute of Dental Sciences & Hospital for Research Collaboration by the Yenepoya (Deemed to be University) authorities for research collaborations for the project of Dr. Selvamani M.
  - d. Recognition of the eligible co-guides for the project of Dr. Selvamani M. available at the Mahe Institute of Dental Sciences & Hospital Collaboration by the Yenepoya (Deemed to be University).
  - e. Registration of the Ph.D scholar as per the Yenepoya (Deemed to be University) rules.
  - f. Each Ph.D scholar will have one Guide at the Yenepoya (Deemed to be University) and one Co-guide from the Department of Oral Pathology and Microbiology.
  - g. The candidate should pass the preliminary examination conducted by the Yenepoya (Deemed to be University) within the prescribed time limit.

ATTESTED  


Dr.Gangadhara Somayaji K.S.  
Registrar  
Yenepoya(Deemed to be University)  
University Road, Deralakatte  
Mangalore-575 018, Karnataka

- h. All the rules of the Ph.D programme, as amended from time to time by the Yenepoya (Deemed to be University) will be applicable to the students of Second Party registered for PhD with the Yenepoya (Deemed to be University).

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Both parties have read over the MoU and have clearly understood its terms and accept the same as binding.

IN WITNESS WHEREOF the parties hereto, have set and subscribed their respective hands the day, month and year hereinabove written.

Registrar  
Yenepoya (Deemed to be University)  
Deralakatte, Mangalore -575018

Principal  
Mahe Institute of Dental Sciences &  
Hospital, Challakkara, Mahe, U.T. of  
Puducherry – 673310

Witness VINITHA RAMANATH PAI

Signature

Name  
Yenepoya (Deemed to be University)  
Deralakatte, Mangalore -575018

Date: 10-10-2020

Witness DR-RENA EPHRAIM

Signature

Name  
Professor, M.D.D.  
Department of :  
Mahe Institute of Dental  
Sciences & Hospital,  
Challakkara, Mahe, Puducherry - 673310

Date 19/10/2020

ATTESTED

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