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Name of the Partnering Agency/Institution: Maratha Mandal's Nathajirao G Halgekar Institute of Dental Sciences and Research Centre, Belagavi

Number of Participants : 1 faculty

A collaborative research is being carried out at Maratha Mandal's Nathajirao G Halgekar Institute of Dental Sciences and Research Centre, Belagavi titled " **Comparative evaluation of Mechanical Curettage vs Socket sterilization with Photobiomodulation in chronically infected socket to promote bone regeneration and wound healing in alveolar ridge preservation – A microbiological, clinical, Histological and Radiographic study"** The synopsis of the aforementioned study has been drafted and is pending IEC approval with both the parties. Dr Bhagyashree Jabade from the Department of Periodontics and Oral Implantology is involved in the research.

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Comparative evaluation of Mechanical Curettage vs socket Disinfection vs Laser socket sterlisation with Photobiomodulation in chronically infected socket to Promote Bone Regeneration and Wound Healing in Alveolar Ridge Preservation—A Microbiological,Clinical ,Histological and Radiographic study

Introduction:

Socket preservation maintains bone volume post-extraction in anticipation of an implant placement. This procedure helps compensate for the resorption of the facial bone wall. Socket preservation should be considered when implant placement needs to be delayed for patient or site-related reasons. The ideal healing time before implant placement is six months. Socket preservation can reduce the need for later bone augmentation. By reducing bone resorption and accelerating bone formation it increases implant success and survival.

However, active infection in the extraction site may adversely affect the outcome of this procedure. Thus thorough mechanical curettage or disinfection with 1% chlorhexidine has been advised to remove infected granulation tissue.But their effect on bacteria was questionable.With invention of photodynamic therapy its bactericidal effect has been proven.

This study is for the maintenance of dental Implants as per CIST protocol and its effect on P. gingivalis.

It is designed to assess the clinical.microbiological ,histological results of immediate placement of bone grafts in infected extraction sockets by using a standardized protocol, which included

(*a*) the use of curettage decontamination of the infected socket prior to bone graft insertion,

(b) use of chlorhexidine for disinfection

(*c*) the utilization of an antimicrobial photodynamic therapy that combines advanced non-thermal diode laser technology with a photosensitizing solution for the treatment.

Materials and methods:

45 extraction sites will be disinfected by above three protocol (15 each) and bone graft will be placed .Pre and post operative sample will be taken. Qualitative and quantitative microbiological analysis for P.gingivalis using Real Time PCR will be performed

- Microbiological evaluation will be done on the basis of quantitative and qualitative reduction of bacterial load in particular P.gingivalis.
- Clinical evaluation will be done on the basis of healing index.
- Radiographic evaluation will be done on the basis of pre and post CBCT (6 months).
- Histological evaluation will be done after 6 months.

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