

## Oral Presentation

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lesions and periodontal pockets. Recent reports have drawn attention to the problems of antimicrobial resistance and resistance of oral bacteria to antibiotics and local antiseptics is of increasing concern, thus photodynamic therapy could be an alternative antimicrobial approach to treat localized infections in oral cavity. In this study the fluorescence spectra of TB were obtained before and after laser exposure in the presence or absence of *Streptococcus mutans*. The dye concentration was 0.01%, the irradiation was performed with a diode laser,  $\lambda = 660 \text{ nm}$ ,  $P = 40 \text{ mW}$ , exposure time of 3 minutes in a volume of 0.5 ml, with a pre-irradiation time (PIT) of one or five minutes. The results showed shifts in fluorescence spectra observed for different pre-irradiation times in the presence of *S. mutans*. In the absence of bacteria, a shift in the spectra was observed in the dye before and after irradiation. These findings may indicate a photobleaching of the dye denoting structural alterations after irradiation and confirm the importance of the PIT for the success of this therapy.

### OP55

#### **Comparative study between photodynamic therapy and chemical solution on bacterial reduction in root canals.**

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One of the major medical problems facing mankind in the next century will be the resistance of many pathogenic microbes to existing antibiotics. Oral bacteria can easily reach other body sites and also spread to other individuals. Therefore, antibiotic-resistant oral bacteria have the opportunity for rapid dissemination through the community and to transfer their resistance genes to other bacterial species. Photodynamic therapy involves the use of light-activated drugs which may offer an alternative approach to the use of traditional antimicrobial agents. The purpose of this study was to evaluate bacterial reduction in infected root canal. Thirty teeth with their root canals prepared were contaminated with *Enterococcus faecalis*. Control group was untreated. Chemical group was treated with sodium hypochlorite for 30 minutes and in the laser group, a photosensitizer paste was placed and maintained in the root canals for 5 minutes and irradiated with a diode laser, output power 10 mW and  $\lambda = 685 \text{ nm}$  for 3 minutes. The bacterial reduction was significantly higher for laser group when compared

to chemical and control groups. These results indicate photodynamic therapy as an effective method to kill *E. faecalis*.

### OP56

#### **Effects of the lasertherapy on cutaneous wounds infected by *Staphylococcus aureus*.**

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The literature shows several studies showing positive effect of the use of lasertherapy on wound healing, but no study was found on infected wounds. The aim of the present study was to assess the effects of the lasertherapy on cutaneous wounds infected by *Staphylococcus aureus*. Twelve rats had a standard wound created on the dorsum. Four hours after wounding the wound was contaminated with a solution containing *Staphylococcus aureus*. Forty-eight hours after contamination and assessment of infection, the animals were divided: Control-removal of the crust and no further treatment; Laser-removal of the crust and a single application of lasertherapy ( $660 \text{ nm}$ ,  $50 \text{ mW}$ ,  $30 \text{ J/cm}^2$ , CW, 15min). Immediately after a swab was used to collect material from the wound surface. The swab was placed in a tube containing PBS, diluted and placed in Baird-Parker medium. Colony counts were then performed. Eight days after contamination, the same procedure was carried out and the animals were humanely sacrificed. The specimens were stained with HE and Picrosírius stains. The result of the colony count showed no significant differences between the groups. Histological analysis showed increases collagen deposition and epithelial migration and mild inflammatory reaction was seen on laser-treated subjects. The Lasertherapy improved healing on infected wounds.

### OP57

#### **In vivo study of photodynamic therapy effect on deciduous dentin: microbiologic and SEM analysis.**

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In vivo decayed dentine of deciduous teeth ( $n=29$ ) were treated with 0.005% toluidine blue O and sensitized with a low-power