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OP67

Monitoring of in vitro caries lesion production by photographic visual method and DIAGNOdent.

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The conventional methods for caries diagnosis have some difficulties in detecting the presence of lesion, mainly in its initial development phase. He DIAGNOdent laser (KaVo) appeared in dental clinic practice in 1998 as a device for diagnosis of caries lesions on smooth and occlusal surfaces. Many studies have reported the good sensitivity and specificity of such device in the diagnosis of lesion in its initial stages. The purpose of this work was the in vitro monitoring of enamel demineralization of deciduous teeth promoted by acid treatment with a saturated hydroxyapatite demineralizing solution for 24, 48 and 96 hours. The monitoring based on photographic visual examination and DIAGNOdent readings has been performed by three calibrated examiners and the correlation between the two methods has been determined. The validation of the mineral loss has been obtained from the determination of the difference in phosphorus concentration of the caries promoter solutions before and after the treatments. According the obtained results, the photographic visual examination and the DIAGNOdent laser device were capable of monitoring the caries lesion production by acid treatment and a positive correlation between the methods has been found.

OP68

Effect of Er:YAG and diode lasers in the adhesion of blood components and in the morphology of irradiated root surfaces.

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The aim of this study was to evaluate in vitro the adhesion of blood components on root surfaces irradiated with Er:YAG (2.94??m) and GaAlAs Diode (808 nm) lasers and these effects on irradiated root surfaces. It was obtained 100 samples of human teeth. They were scaled and divided into five groups of 20 samples each: G1 (Control); G2 -Er:YAG laser (7.6 J/cm2); G3 - Er:YAG laser (12.9 J/cm2); G4 -Diode laser (90 J/cm2) and G5 - Diode laser (108 J/cm2). After these treatments were conducted, 10 samples of each group received a blood tissue, and the reminiscent 10 samples did not receive such treatment. After laboratorial treatments the samples were analysed by scanning electron microscopy. The results have shown that there were no significant differences between the Control Group and the groups treated with Er:YAG laser (p=0,9633 and 0,6229); G4 and G5 were less effective than the Control Group and the Er:YAG laser groups (p<0,01). No proposed treatment increased the adhesion of blood components in a significant way when compared to the Control Group; although the Er:YAG laser did not interfere in the adhesion of blood components it caused
more changes on the root surface, while the Diode laser inhibited the adhesion.

OP69

Clearness efect of Er:YAG and Nd:YAG laser radiation on root canal walls.

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The purpose of this study was to evaluate the effect of laser radiation (Er:YAG and Nd:YAG) after conventional endodontic treatment on the clearness of root canal walls. 13 extracted single root human teeth were divided into 3 groups: 1- Er:YAG laser radiation (Key-Laser 3, Kavo Germany - 120mJ, 1.8W, 15Hz) (n=5); 2- Nd:YAG laser radiation (Pulse Master 1000IQ, American Dental Technologies - TX USA - 100mJ, 1.5W, 15Hz) (n=5); 3- Control group, not irradiated (n=3). The teeth were irradiated 3 times with rotational movements in apical-coronal direction, 1 second per 2 mm of root canal. The teeth were longitudinally bisected and prepared for scanning electron microscope (SEM) study. Independently of the experimental group, both clean and dirty areas could be observed at the same sample. The samples treated with Er:YAG laser mostly presented clean areas, whereas the control canal walls mostly exhibited areas covered by smear layer. These results showed that fully cleaned root canal walls are difficult to obtain. Thus, changes in laser radiation parameters and technique should be tested to achieve better results.