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the presence of light inthe blue range (470 nm a 500 nm) (BLANKENAUet al, 1995). The halogen light has normally been applied, however its effectiveness is educed bay the utilization of optical filters. The light from Argon Laser (488 nm) is studied as a substitute. The purpose of their hardness and temperature increase when photopolymerized by the light of a Argon laser device (488 nm) (LASER) and by the light of a commercial photopolymerizer (PHOTO). Measures of hardness (Vickers) and dental pulp temperature had been made. According to the applied methodology and the obtained results, it can be concluded that both methods for composit resins polimerization promote small temperature increases of statiscally equivalent values. In addition, the polimerization activation by argon laser produces composite resins which are harder than those polimerized by halogen lighit, what indicates the superior effectiveness of that method over the latter.

P105

Monte-Carlo Modelling of light propagation in hard dental tissues.

Zezell, D.M. ; Miyakawa, W.; Riva, R.; Watanuki, J.T..

In the Monte-Carlo model, we simulated the propagation of visible light and the temperature distribution in human tooth, which reflects the energy deposited in the tooth by the laser. As a turbid medium, differences in absorption and scattering coefficients of the enamel and dentine must be taken into account. These data are not completely established in the literature in the visible range. The results are compared with experimental data of Cu-HyBrID laser light propagation in human molar teeth, in order to evaluate the scattering coefficient. The Cu-HyBrID laser emits green (510 nm) and yellow (578 nm) radiation with high output peak power (20 kW) at high repetition rates (13.7 kHz) and there is almost no report of its use in Dentistry. This work aims to correlate the Cu-HyBrID energy deposition with the tooth thermal response. The tooth is predominantly a scattering medium (absorption much lower than scattering) and small variations in the absorption coefficient do not reveal significant alterations in the light distribution curve. According to the simulation, most of the laser energy is accumulated on enamel-dentine junction and the tooth thermal response is strongly affected by the value of the absorption coefficient, which is not yet precisely known.

P106

Fluoride incorporation and acid resistance of dental enamel irradiated with Er:YAG: Atomic absorption spectrometry and Spectrophotometry.

Zezell, D.M.; Bevilacqua, F.M.; Magnani, R.; Ana, P.A.; Eduardo, C.P..

Er:YAG effects on dental enamel surface regarding the resistance to demineralization and the fluoride incorporation were evaluated. 80 samples were divided into 8 groups: G1) control - APF application; G2) conditioning with 37% phosphoric acid and APF application; G3) irradiation with 250 mJ/pulse, 7 Hz, 31,84 J/cm2 (contact) and APF application; G4) irradiation with 200 mJ/pulse, 7 Hz, 25,47 J/cm2 (contact) and APF application; G5) irradiation with 150 mJ/pulse, 7 Hz, 19,10 J/cm2 (contact) and APF application; G6) irradiation with 250 mJ/pulse, 7 Hz, 2,08 J/cm2 (non-contact) and APF application; G7) irradiation with 200 mJ/pulse, 7 Hz, 1,8 J/cm2 (non-contact) and APF application; G8) irradiation with 100 mJ/pulse, 7 Hz, 0,9 J/cm2 (non-contact) and APF application. All samples were immersed in 2,0 M acetic-acetate acid solution, pH 4,5 for 8 hours. The fluoride, calcium and phosphorous ions were analyzed, by atomic absorption spectrometry and spectrophotometry. Groups laser irradiated before topic APF application presented better results than the control. There was higher fluoride incorporation on G7 and G8. Calcium and phosphorous analysis reveled a decrease on the enamel demineralization on G2 and G3 groups. The Er:YAG laser on irradiation conditions of this work is a promissory alternative for the Preventive Dentistry.

P107

Quantitative evaluation of intact peripheral nerve structures after CO2 laser, electrocautery and scalpel.

Weber, J.B. ; Soares, L.P.; Rocha,E. ; Pinheiro, A.L.B. ; Pozza, D.H. ; Oliveira, M.G..

Doutor em Cirurgia e Traumatologia Bucomaxilofacial.

This study aimed to evaluate quantitatively integrity of nerve structures near CO2 laser incisions. A comparative study was carried out using 25 animals (Rattus Norvegicus) divided into five groups of 5 animals each. Standard incisions were carried on the dorsum of the tongue of each animal using the electrocautery (group 2), scalpel (group 3), CW CO2 laser (group 4) and SPS