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Background: This *in vitro* study aimed to evaluate changes in optical attenuation coefficient of eroded dentine analysed by Optical Coherence Tomography (OCT) after irradiation with Nd: YAG laser and topical fluoride.
Study: The samples were protected with acid resistant varnish, with the exception of the central area of 2 mm diameter and divided into 8 groups (n = 15) and subjected to acidic cycling with citric acid solution for 20 minutes, twice a day, during 20 days. After 10 day submitted to acid challenges, each group received different treatment: control group (no treatment), fluoride group (topical sodium fluoride 2% -by 4 minutes); three laser groups irradiated with Nd:YAG irradiating on contact (1 W, 0.7 W and 0.5 W mean power); and three treated groups associating the fluoride to laser irradiation. The OCT readings were performed at days: 1 prior to first acid challenge (OCT1); at day 5 (OCT2); at day 10 (OCT3); at day 15 (OCT4); at day 17 (OCT5) and at day 20 (OCT6). It was developed a homemade software to retrieve the total optical attenuation coefficient.
Results: It was observed an increase of optical attenuation coefficient among the control group and the others groups. The best result for erosion treatment was the combination of fluoride followed by laser irradiation with radiant exposure of 39.78 J/cm^2.
Conclusion: The optical attenuation coefficient determined by OCT proved to be an important quantitative diagnostic tool.

#95

THE EVALUATION OF EFFECTS OF DIODE LASER WELDING ON SCIATIC NERVE INJURY IN RAT

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Background: Motor nerves injuries and transections are common consequences of war battles, vehicle accidents and other disasters. The standard medication for these includes suturing and anastomosis of transected nerve in the first hours after trauma. Of the other suggested treatments in the literature is laser therapy and irritation of laser beam directly to the injured site.
Study: The aim of present study was to evaluate the effect of neurorrhaphy and laser nerve welding by diode laser plus biologic solder on transected sciatic nerve and eventually comparing these methods to each other. In second group neurorrhaphy was done by 10-0 prolene suture.
Results: 30 mature male ficher – 344 wistar rats went for surgical intervention of transecting right sciatic nerve under general anesthesia. Rats randomly were assigned for 3 groups:1- Laser group 2-Microsurgery group 3-Control group. In first group nerve welding conducted by diode laser (P: 500 mW) plus biologic solder. All the samples evaluated by Foot print test biweekly.12 weeks post-surgery and after testing rats by EMG device, sample were sacrificed for histopathologic evaluation. The student's T test was used in statistical analysis.
Conclusion: Laser nerve welding is a comparable method for nerve injuries treatment and there is no serius problems with this method.

#96

APPLICATION OF PHOTOBIOMODULATION IN A GENERAL DENTAL PRACTICE

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Background: Photobiomodulation has been shown both clinically and in research to improve wound healing, decrease pain sensations, reduce inflammation, improve nerve regeneration, reduce muscle trismus and stimulate lymphatic flow and circulation. This presentation will review the primarily and secondary responses from cells which allow for these effects to occur. In addition, the principles of biostimulation and bioinhibition, as well as Laser Therapy parameters such as wavelength, dosage, power density and light source will be discussed for various clinical applications, including: • Pain reduction after extractions, surgery and root canals • Dry socket • Dentin hypersensitivity • Sinus problems • Soft tissue lesions such as cold sores, apthous ulcers and mucositis • Facial pain; TMJ pain, neuropathic pain such as trigeminal neuralgia, and myopathic pain • Nerve regeneration The goal of this presentation is to give attendees the opportunity to learn the clinical applications of photobiomodulation while enabling them to evaluate these applications in an evidence-based format. Participants will leave this course with all the tools required to utilize photobiomodulation in their practice comfortably and predictably.

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IN VITRO PHOTODYNAMIC INACTIVATION OF CANDIDA ALBICANS BY PHENOTHIAZINE DYE (NEW METHYLENE BLUE) AND INDOCYANINE GREEN (EMUNDO®)

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Background: Application of new generation of photosensitizers for increasing efficacy of antifungal photodynamic therapy (aPDT) is an important aspect of PDT. So the aim of this *in vitro* study is to evaluate antifungal efficacy of photoelimination of candida albicans with photothermal and antifungal photodynamic therapy.
Study: aPDT with new methylene blue and photothermal therapy with EmunDo® were applied in fungal suspension and then subcultured in sabouraud dextrose agar (SDA). Colony counting of candida albicans performed base on colony forming unit per millimeter CFU/ml).
Results: aPDT with either EmunDo® or new methylene blue (NMB) considerably diminished the viability of inoculated C. Albicans ($P < 0.001$) with respective percent of reduction of 86 and 93% compared to the control group. Antifungal Potency or dark toxicity of two photosensitizers alone were not differed remarkably ($P = 0.70$). The same trend was observed for the light sources (wavelength: 810 nm vs wavelength: 630 nm) with no significant difference ($P = 0.78$).
Conclusion: Photoelimination of C.Albicans by either new methylene blue or EmunDo® as a photosensitizer can reduce viability of fungal cells. Although the result of this study is encouraging, further investigations warranted to determine clear