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Congress Program

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Laser Dentistry



27th DGL ANNUAL MEETING

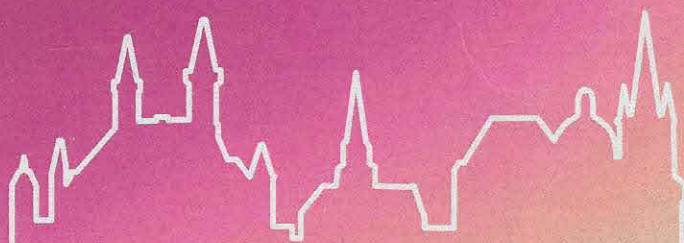


World Academy for
Laser Education in Dentistry

**6th INTERNATIONAL
WALED CONGRESS**



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**16TH LASER DENTISTRY
WORLD CONGRESS
AACHEN**

THREE DECADES
OF LASER INNOVATION
1-3 OCTOBER 2018



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E-Poster Presentations Abstracts

Wednesday 3 October HALL 4 (Hörsaal 4) 11:30 - 13:30

5% significance level. The Biosilicate® promoted the formation of carbonated hydroxyapatite even before laser irradiation, which was better retained after demineralization in laser irradiated group. The Biosilicate® and the laser irradiation alone provided the remineralization of the root dentin in a similar way to that promoted by the topical application of acidulated phosphate fluoride, since all groups had comparable optical attenuation coefficients. The association of the Biosilicate® with the laser irradiation showed higher optical attenuation coefficient than the other experimental groups. It was concluded that the association of Biosilicate® with laser irradiation promoted a synergistic effect, augmenting the remineralization of root dentin and preventing the progression of caries.

P61

Comparative evaluation of two different methods of direct pulp capping.

I. Melih*, D. Pesic, V. Kolak, A. Nikitovic, M. Lalovic, A. Jakovljevic

Direct pulp capping is coverage of exposed pulp by a biocompatible material after traumatic or carious exposure. The purpose of the present study was to evaluate and compare the long-term clinical outcomes of direct pulp capping using two different methods. The study was conducted at the School of Dentistry in Pancevo (Serbia). In this clinical investigation the pulp was covered on 44 teeth in patients of both sexes, aged 25 to 45 years. Pulp was accidentally open during tutorials. The teeth were divided into two groups of twenty two, depending on the method of direct pulp capping. In the group I the exposed pulp was covered with calcium hydroxide. In group II, the pulp was treated with Er:YAG laser (200 mJ, 3 Hz, 15 s) and covered with calcium hydroxide. Clinical and radiographic evaluation was performed 1 week, 4 week, 6 month, 12 month and 24 month after the treatment. Teeth with no response to pulp vitality test were considered to be failure. The data were analyzed by Chi-square test using SPSS software. The success rate was significantly different between conventional (67 %) and laser-assisted (92 %) groups after two year ($P < 0.05$). The laser-assisted procedure proved to be more effective than the conventional technique in enhancing the outcomes of pulp-capping therapy.

P62

Efficacy of biostimulation with therapeutic laser of 940nm diode on temporomandibular disorders.

Laura Anguiano Flores*, Liliانا Anguiano Flores, Pilar Martin Santiago

Introduction Epidemiologic studies show that more than 50% of the population shows signs and symptoms related to temporomandibular disorders of a multifactorial etiology. Justification Exist non-surgical therapies whose objective is to reduce the intensity of the symptoms and increase the masticatory function which through the use of Laser therapy has shown to eliminate the symptomatology due to its biostimulating, analgesic and anti-inflammatory properties. Materials and Methods This study is experimental, longitudinal and comparative which was completed in the Master's program of Orthodontics at De La Salle Bajío University with the intent to evaluate the pain before, during and after treatment with laser therapy which emits a 940nm diode combined with occlusal guard therapy in order to determine the number and duration of necessary sessions in order to reduce and or eliminate all symptomatology through patient interview including history of trauma, auricular and muscular symptomatology, masticatory muscle palpation, radiological evaluation and diagnostic casts mounted in an articulator, maximum opening and pain in 40 patients between the ages of 16 to 65 years of age with a diagnosis of joint dysfunction with myofascial pain syndrome accompanied with a joint dysfunction in 4 groups of study. Results There exists a correlation between the efficacy of biostimulation by laser therapy with a 940nm emitting diode in temporomandibular disorders and a decrease in muscular and articular symptomatology and the rate of recorticalization in the working zones of the joints. Discussion Given that laser therapy is minimally invasive, it is a useful tool in these disorders. A diagnostic and a proper protocol are key elements in its optimization.

P63

Treatment of peri-implant disease supported by laser and photodynamic therapy (Er,Cr:YSGG 2780 nm, Diode 940nm, LLLT 650 nm).

Claudia Corea*, Pilar Martin Santiago

1.- Introduction
Cleaning implant surfaces with the use of laser in the treatment

of Peri-implantitis leads to a clinical improvement, expressed as a decrease in bleeding on probing, a reduction in probing depth and as regards decontamination of the implant surface most studies report a decrease in the number of attached bacteria. The photodynamic therapy is a simple, inexpensive and minimally invasive technique that allows a significant reduction in bacterial flora and better treatment outcomes. In addition to this we use LLLT to induce and stimulate new bone formation. 2.-Material and Methods Medical history and informed consent, peri-implant disease diagnosis, laboratory exams (sampling of the peri-implant fluid on the first date, a second sample when the treatment is finished) and radiographic studies. We use Er,Cr:YSGG 2780 nm to clean implant surfaces and 5 photodynamic therapies on alternating days. After the results of the first test we indicate the specific antibiotic. 3.- Results We can see the tissue deflation of the gum around the implant and the radiographic show us the new bone formation. 4.- Conclusion Using the laser treatment is very comfortable for the patient, it is a non-invasive treatment and we are confident of its success, based on the final result of the laboratory test.

P64

Trying to be selective in caries removal, assisted with Er,Cr:YSGG and spectra camera.

Sarkis Mena Yitani*, Gabriel Lopez

The intention of this poster is to show, the advantages of Er,Cr:YSGG laser in removing caries, being clinical assisted with the spectra camera of air techniques, which uses spectroscopy for caries detection, with a doppler color code of porphyrines in dental tissue. This method helps dentist to be as minimal invasive as possible, as effective in surface than in deep caries. The use of the spectra camera, in combination with a proper x ray exam and modern concepts in clinical observation, give the dentist the benefit of removing less tissue and decontaminating more, leaving more dental structure intact. Materials and Methods The spectra camera use as spectroscopy system caries detection coded by colors, real time, can be saved in patients register, is fast and easy to use its good for clinical and patient communication and can be very useful for clinician chairside in combination with Er,Cr:YSGG laser as the most efficient system removing caries.

P65

Er,Cr:YSGG laser associated to fluoride on the control of dentin erosion progression.

Sávio José Cardoso Bezerra, Letícia Rigacci Trevisan, Itallo Emídio Lira Viana, Raquel Marianna Lopes, Daisa de Lima Pereira, Letícia Oba Sakae*, Ana Cecília Côrrea Aranha, Taís Scaramucci

1) Introduction: The combination between high power lasers and fluoride may potentially control the progression of dentin erosion. Therefore, the aim of this study was to evaluate the effect of Er,Cr:YSGG laser, associated to fluoride application, in the control of dentin erosion. 2) Materials and Methods: Dentin slabs were embedded into acrylic resin, flattened and polished. The specimens (n=10) were previously eroded (10min immersion in 1% citric acid solution) and randomly allocated into the experimental groups, according to the following treatments: control (no treatment); acidulated phosphate fluoride (APF) gel (1.23% F, 1min); Er,Cr:YSGG laser irradiation (parameter 1: 0.25W, 20Hz, 2.8J/cm²); Er,Cr:YSGG laser irradiation (parameter 2: 0.50W, 20Hz, 5.7J/cm²); APF gel+Er,Cr:YSGG laser parameter 1 and; APF gel+Er,Cr:YSGG laser parameter 2. After, they underwent an erosion-remineralization cycling, consisting of a 5min immersion into 0.3% citric acid, followed by 60min exposure to artificial saliva. This procedure was repeated 4x/day, for 5 days. Surface loss (SL, in μm) was determined with optical profilometry. The specimens were analyzed by environmental scanning electron microscopy (n=3). Data were statistically analyzed ($\alpha=0.05$). 3) Results: None of the groups significantly differed from the control group, except for the APF group. APF gel presented the lowest SL, not differing from Er,Cr:YSGG laser (parameter 1) and APF gel+Er,Cr:YSGG laser (parameter 1). Selective structure removal was observed for the laser-treated groups. 4) Conclusions: None of the Er,Cr:YSGG laser parameters were effective in the control of dentin erosion. The laser was also not able to enhance the protection of fluoride against dental erosion.

P67

In vitro protective effect of TiF4 gel, associated or not with CO2 laser (10.6 μm) irradiation on eroded enamel.

Juliane Tavares, Taís Mantilla, Camila Silva, Yael Angel, Patricia Freitas*