

# 30 1988 - 2018 YEARS OF ISLD / WFLD PEARL ANNIVERSARY LASER CONGRESS

## Congress Program

I|S|L|D International  
Society for  
Laser Dentistry



27<sup>th</sup> DGL ANNUAL MEETING

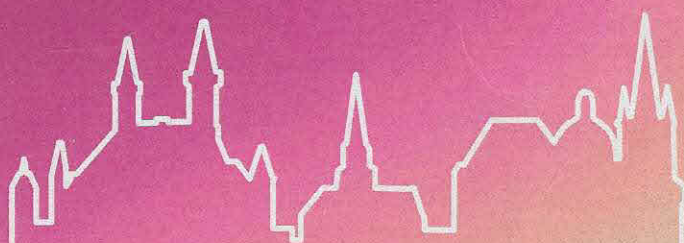


World Academy for  
Laser Education in Dentistry

6<sup>th</sup> INTERNATIONAL  
WALED CONGRESS



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16<sup>TH</sup> LASER DENTISTRY  
WORLD CONGRESS  
AACHEN

THREE DECADES  
OF LASER INNOVATION  
1-3 OCTOBER 2018





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

This study evaluated the effect of fluoridated gels on eroded enamel and the influence of CO<sub>2</sub> laser (10.6 µm) with these treatments. Two stages were performed. Stage I: 80 bovine enamel samples were eroded and assigned into 8 groups (n=10): G1 - no treatment; G2 - placebo gel; G3 - 2% NaF (pH 7.0); G4 - 2% NaF (pH 1.5); G5 - 5.42% NaF (pH 7.0); G6 - 5.42% NaF (pH 1.5); G7 - 4% TiF<sub>4</sub> (pH 1.5); G8 - 4% TiF<sub>4</sub> (pH 7.0). Samples were subjected to 10 days of erosive cycling, each day consisted on six erosive and remineralizing events. Profilometric analysis were performed. ANOVA test revealed that the factors "treatment", "time" and interaction between them significantly affected the values of surface loss (p < 0.001). Tukey's test showed no significant difference between the groups after the formation of the initial lesion. Stage II: 40 previously eroded bovine enamel fragments were assigned into 4 groups (n = 10): G1 - no treatment; G2 - 4% TiF<sub>4</sub> (pH 1.5); G3 - CO<sub>2</sub> laser; G4 - CO<sub>2</sub> laser + 4% TiF<sub>4</sub> (pH 1.5). After the erosive cycling, profilometry and scanning electron microscopy analysis were performed. ANOVA test demonstrated a statistical difference between "treatments", "times" and their interaction (p < 0.001). Tukey's test showed that the initial "time" lesion did not show any difference between the experimental groups. The 4% TiF<sub>4</sub> gel (pH 1.5) has the potential to reduce the surface loss, which is elevated by association with previous treatment with CO<sub>2</sub> laser.

### P68

#### Focal epithelial hyperplasia treatment with laser.

Oscar Caceres\*, Pilar Martin Santiago

The pediatric population, focal multipitthelial hyperplasia (FMH) is characterized by the appearance of multiple lesions in the mucosa of the mouth; it is associated with the human papilloma virus. Currently, no special treatment is preferred, the treatment is used with liquid nitrogen (LN), however, this is an uncomfortable and painful treatment for the patient. This would lead to a look for new less invasive treatment alternatives, such as the use of YSGG lasers and 660 nm lasers. This is why we need to look for alternative treatment, trying to be less invasive, such as the Nd: YAG, Rapid Cut and review the edges with Tissue plasty and ends with laser bandage at the end to seal the lesion well and 660 nm laser. The differential diagnosis: should be performed with condylomata acuminata, florid oral papillomatosis, Cowden syndrome. Objective: to demonstrate the effectiveness of the Nd: YAG

laser and 660 nm Laser during one month of treatment as an alternative treatment in multifocal epithelial hyperplasia, with the use of Nd: YAG Clinical Case: A female patient, 8 years old, from the city of La Paz, Bolivia, came to the clinic presenting: exophytic neoforations, located on the internal face of cheeks, lower and upper lip. With which it is decided to perform incisional biopsy with laser. The histopathological report: The electron microscopy exam reveals viral particles of crystalloid disposition. The characteristic HPV types are type 13 and 32 Conclusion: Could demonstrate the effectiveness of laser in this type of pathology, such treatment being less aggressive and more tolerable for the patient. During one month of treatment

### P70

#### Pinch-grip strength variation for early users.

Amany Moussa\*

Grip and pinch strength are commonly employed indices of strength used in hand evaluations. For all professions grip, strength is an important criterion to be successful in their profession. Such phenomena may be explained by differences in nature of work, working environment, and objects workers handle. Holding a dental tool for many hours of work is reflected in fatigue and manual tremor. The use of dental handpieces exposes the dental personnel to high-frequency vibration, also, tool handle shape on hand muscle load. We aimed to investigate the relationship of task variation during dental work history with pinch grip strength among dentists during their 1st laser experience till they become true experts. Methods: We observe pinch grip strength among 160 dentists aged 25-65 years. During their 1st Laser experience, taking in our consideration their Variation in dental work tasks during work history. (restoration treatment/endodontics, prosthodontics/periodontics/surgery). Outcome: There are many platforms that determine our laser parameters selection as tissue type and procedure, patient pain threshold beside the most important one is the pinch grip strength of the operator. Which branched and sub branched to many different items as, effects of gender, sex, experience, hand size, hand posture and tooth area on force measurements The dentists have a huge variation in pinch grip strength must be appreciated.

### P71

#### Gamma sterilized human dental enamel submitted to Er,Cr: YSGG laser irradiation associated to fluoride for in situ model.

Claudia Bianchi Zamataro\*, Daisa de Lima Pereira, Cássio Aparecido Lima, Marcos Antonio Scapin, Denise Maria Zezell

Human dental enamel (HDE) samples are used for experiments in which the enamel mineral content is analysed. HDE samples were irradiated through a source of 60Co multipurpose irradiator aiming complete sterilization (25 Kgy/h) with the purpose of accumulating the native plaque on them at an in situ study. An Er,Cr:YSGG laser was used alone and in combination with the topical applications of: 1-dentifrice (1,100 ppm F-/g) or 2-APF (12,300 ppm F-/g). Morphological analyzes were performed by scanning electron microscopy, determination of alkali-soluble fluoride concentration by specific ion electrode and microhardness determination. Then, the volunteers used palatal devices containing previously treated HDE samples and remained using F dentifrice. The effects of F-formation, related to the proposed treatments, on the reduction of demineralization were correlated. The biochemical analysis for quantification of alkaline soluble F- determined the groups in which the laser was used after the topical application of the two types of fluoride products of different concentrations (dentifrice and APF) to be statistically different (p<0.05), suggesting a prolonged effect of the synergy of the treatments in the reduction of the demineralization. The FTIR findings established a parameter for gamma radiation use to HDE sterilization. The gamma radiation applied for sterilization purposes seems to be safe and causes minimal changes at the mineral content and morphological aspects. The formation and retention of CaF<sub>2</sub> after use of fluoridated products with different concentrations prior to the Er,Cr:YSGG irradiation seems to be a parameter to the clinical use in high risk of caries patients.

### P72

#### Effect of laser therapy and laser-acupuncture in patients reporting paresthesia after lower third molars surgeries.

Karolyne Dias Carvalho Moschella de Oliveira\*, Camila Vieira da Silva, Renata Ferreira Oliveira, Fernanda Cristina Nogueira Rodrigues, Juliane de Paula Tavares, Silvia Regina Dowgan Tesseroli de Siqueira, Patricia Moreira de Freitas.

Third molar inferior tooth extraction is a common surgery in dental clinics activity that can lead to paresthesia in the inferior alveolar nerve. Available treatments, as photobiomodulation, have the goal to regenerate nerve lesion, recovering nerves sensibility. In this blinded, randomized study, 16 patients reporting paresthesia were divided in 2 groups (n=8): laser therapy (808 nm, 100 mw, 40s/point, 0.028 cm<sup>2</sup> and irradiation of all the affected nerve branch) and laser acupuncture (same parameters, irradiated only in the acupuncture points). Before and after treatment, patients underwent gustative, thermal, tactile, mechanical, vibratory and VAS tests to evaluate improvement on nerve sensitivity. Mean values were submitted to Wilcoxon matched-pairs test (±5%). Only the hot thermal test showed statistically significant difference for the laser acupuncture treated group, before and after treatment (p=0.0391). In conclusion, the preliminary results of this clinical study showed that laser acupuncture can be considered an important technique for treating paresthesia.

### P73

#### Treatment of a paresthesia with a 940 nm diode laser.

Carolina Benitez Arevalo\*, Maira Pilar Martin Santiago, Carolina Isabel Benitez Arevalo\*, Pilar Martin Santiago

#### INTRODUCTION

The paresthesias of the inferior alveolar nerve are very complex to treat with conventional treatments, since they need a lot of time and with very limited results. We present a clinical treatment protocol using only diode laser, which has given promising results MATERIALS AND METHODS: We used a Diode laser of 940 nm and different materials to test the situation before and after the evolution of the therapeutic response. We also used safety goggles and biomodulation or whitening handpiece

#### RESULTS:

We obtained a 95% of recovery in 6 weeks in a patient referred by an oral surgeon who presented paresthesia after 5 months of a traumatic extraction of a lower third molar. After 6 weeks of laser treatment, the tingling, tickling, pricking, numbness or burning sensations associated to paresthesia, decreased markedly.

#### CONCLUSION:

Laser systems provide an important tool in the control of paresthesias after surgeries that are often extremely traumatic and limiting for our patients, without side effects and without the need of anti-inflammatory and analgesic medications that have many long-term side effects. It gives us an improvement in the quality of