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Congress Program

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27th DGL ANNUAL MEETING

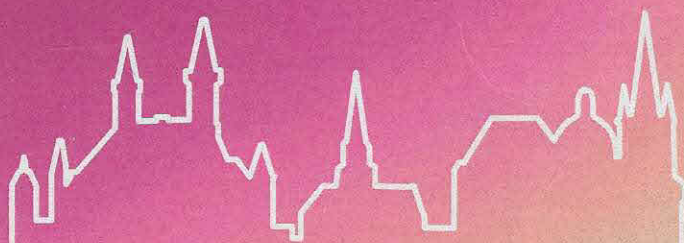


World Academy for
Laser Education in Dentistry

**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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Codruta Ciurescu

Laser periodontics - Is it the new path?

The aim of periodontal treatment is to reduce the loss of supporting tissues induced by the disease. Considering the complex nature of periodontitis the research should be focused on any therapeutic technique that can contribute to the improvement of clinical parameters and regression of the disease. Despite the constant increasing number of studies regarding the use of lasers in periodontology there are still controversies among periodontists regarding the used protocols and clinical benefits, those being compared with different treatments applied for this disease. Use of lasers in periodontology are mainly recommended for the ability to reduce periodontal pathogens within periodontal pockets, tissues conditioning, epithelium removal, granulating tissues removal, promoting healing and providing a better lasting attachment.

The contribution of 2 wavelengths together : 940 nm and 2780 nm as adjunctive therapy stands in obtaining a better, promising result in nonsurgical periodontal therapy : important reduction of probing depth, gain in clinical attachment, significant reduction in number of bacteria that colonizes periodontal pockets, delayed recolonization, and lessen pathogenicity and/or virulence of the new formed biofilm. Double wavelength laser therapy in nonsurgical periodontal therapy proven to provide better results comparing to other adjunctive therapies and stands as a reliable alternative to antibiotic prescriptions in periodontal treatment.

Codruta Ciurescu*, Rene Franzen, Leon Vanweersch, Norbert Gutknecht



Cristina Arnabat

5 year clinical follow-up of Er,Cr:YSGG laser in non-carious cervical lesions.

Introduction: The incidence of non-carious cervical lesions (NCCLs) has been increasing due to an ageing of population. These lesions can be caused by erosion, abrasion or abfraction (occlusal stress). Restorations for NCCLs are necessary to relieve hypersensitivity, prevent further tooth structure loss, and to improve esthetics.

Material and methods: 80 patients with 322 cervical restorations treated with Er,Cr:YSGG Laser. The parameters used to modify dentin and enamel were 1,5W /20Hz 50% air 45% water. All cervical lesions were treated with a two-step self-etching adhesive (Clearfil SE). Patients were called for a 5-year follow up. **Results:** 294 restorations remained of the 322 initial restorations in the 5-year follow up. This means we had a survival rate of 91.3% and a failure rate of 8.7%.

Cristina Arnabat*, Montserrat Artes, Antonio Espana, Josep Arnabat



Daisa L. Pereira

Effect of Nd:YAG laser on caries prevention of dental enamel by optical attenuation coefficient with optical coherence tomography (OCT)

Caries is a multifactorial disease, caused by the continuing loss of hydroxyapatite crystals. The association of topical acidulated phosphate fluoride application (APF) and high intensity lasers has the potential to increase the resistance to demineralization of dental tissues. The Nd:YAG laser, specially associated to a photoabsorber over the dental surface, may induce thermal changes in order to increase the resistance to demineralization. Optical Coherence Tomography (OCT) is a non-ionizing radiation imaging technique that can be performed in real time in vivo and can detect early changes in the optical properties of tissues. This study aimed to characterize the effectiveness of the association of Nd:YAG laser and APF gel in the prevention of caries lesions in human dental enamel in vitro, due to structural changes in function of the pH cycling, the treatments performed as well as to evaluate the potential of OCT to diagnose early demineralization. 160 human enamel samples were divided in four groups and submitted to pH cycling during 20 days, after the following treatments: G1- untreated; G2- treated with APF gel (1.23% F-, 4min); G3- irradiated with Nd:YAG (1064nm, 84.9J/cm², 10Hz) followed by APF application and G4- APF application before Nd:YAG laser irradiation (same conditions of G3). OCT (930 nm) analysis were performed before and after the treatments, 5th, 10th, 15th and 20th day of pH cycling. The optical attenuation coefficient decreased significantly ($p < 0.05$) as demineralization increased over time and better results were achieved in group G4. OCT technique can diagnose early demineralization in enamel.

Marcia C. D. Moraes, Daisa L. Pereira*, Claudia B. Zamataro, Denise M. Zezell, Anderson Z. Freitas