

ISSN 0103-6440

ISLD 2004

BRAZILIAN DENTAL JOURNAL

VOLUME 15 (Special issue): SI-01-SI-136, 2004

BRAZILIAN DENTAL JOURNAL

Dental Foundation of Ribeirão Preto

<http://www.forp.usp.br/bdj/bdj.htm>

e-mail: bdj@forp.usp.br

EDITORS

Jesus Djalma Pécora
Paulo Cesar Saquy
Manoel Damião Sousa Neto

ASSISTANT EDITORS

Ricardo Gariba Silva Eduardo Luiz Barbin
Júlio César E. Spanó Melissa Andréia Marchesan

EDITORIAL BOARD

Geraldo Maia Campos	Antonio Luiz B. Pinheiro
Heitor Panzeri	Nicolau Tortamano
Miguel Angel Sala	Maria Fidela de Lima Navarro
Dionísio Vinha	Jaime A. Cury
Jesus Djalma Pécora	Roberto Holland
Delsa Deise Macchetti	Lourenço Correr Sobrinho
Lucy Dalva Lopes	Luis Antônio Salata
Nelo Francisco Romani	Luis César Peres
Regis Alonso Verri	Julio Barrancos Mooney - Argentina
Moacyr da Silva	Julian B. Woelfel - USA
Izabel Ioko Ito	Ivar A. Mjör - Norway
Reinaldo Brito e Dias	Ole Carlsen - Denmark
Ruberval A. Lopes	Lief Tronstad - Norway
Esther Goldenberg Birman	Walter A. Bretz - USA
Flávio Fava de Moraes	Benjamin Martinez - Chile
Aldo Brugnera Júnior	A.D. Walmsley - Birmingham, UK
Vera Cavalcanti de Araújo	Harvey Wigdor - USA
Arthur Belem Novaes Jr.	Benjamin Peretz - Israel
Carlos Estrela	Trevor F. Walsh - UK
Léa Assed Bezerra da Silva	Harald J. Schiel - Switzerland

DENTAL FOUNDATION OF RIBEIRÃO PRETO DIRECTORS

Jesus Djalma Pécora
Ricardo Gariba Silva
Iara Augusta Orsi

The Journal is indexed by Medline, PubMed, SciELO, DEDALUS and ERL.

Financial assistance for the publication of the Journal provided by the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and FAPESP.

Support to Scientific Publications Program

MCT CNPq FINEP FAPESP

Poster Presentation

the presence of light in the blue range (470 nm a 500 nm) (BLANKENAU et al, 1995). The halogen light has normally been applied, however its effectiveness is reduced by 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 polymerization promote small temperature increases of statistically equivalent values. In addition, the polymerization activation by argon laser produces composite resins which are harder than those polymerized by halogen light, 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 topical APF application presented better results than the control. There was higher fluoride incorporation on G7 and G8. Calcium and phosphorous analysis revealed a decrease on the enamel demineralization on G2 and G3 groups. The Er:YAG laser on irradiation conditions of this work is a promising 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