OP31

Microleakage of composite fillings in Er,Cr:YSGG laser prepared cavities comparing two self-etching primer systems in permanent and primary teeth.

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The aim of this in vitro study was to to assess the performance of two self-etching primers in preventing microleakage of Class V cavities performed by high-speed drill (HD) and Er,Cr:YSGG laser.Twenty human third molars (group 1) and twenty primary canines (group 2) were selected and divided into four subgroups (n=10) A: HD + Adhese (AD), B: Er,Cr:YSGG + AD, C: HD + Clearfill SE BOND (CSB), D: Er,Cr:YSGG + CSB. The laser settings were: 20Hz/5.5W, 63.94J/cm2 enamel, 4W, 46.5J/cm2 dentin, 2.5 W, 16.3J/cm2 marginal beveling.Cavities were restored, thermally cycled and immersed in Rhodamine B (0.6%, 48h).The microleakage were evaluated under stereomicroscope (40X by 3 double-blind examiners, with scores 0-3). Data were analysed using Kruskal-Wallis/Dunn test ($p<0.05$). On group 1, no statistically significant difference was found between the self-etching primers and cavity preparation methods; on group 2 the only statistically significant difference ($p<0.05$, $p= 0.0006$) was found on bur prepared cavities once AD provided less microleakage than CSB. It can be concluded that the use of Er,Cr:YSGG for cavity preparations is comparable to high speed turbine when associated with both CSB or AD self-etching systems from the viewpoint of microleakage in permanent and primary teeth.

OP32

Interfacial micromorphology of adhesive systems in cavities prepared with Er,Cr:YSGG, Er:YAG laser and bur.

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This investigation was performed to evaluate the interfacial micromorphology of resin-dentin interface of adhesive systems bonded to dentin using lasers and bur. Twenty-seven human teeth had their occlusal enamel removed. Class I cavities were prepared in dentin according to the groups (n=9): G1) cavity preparation with diamond bur; G2) Er:YAG laser (Kavo Key 3, Germany) at 250mJ (113.6J/cm2), 4Hz; G3) Er,Cr:YSGG laser (Millenium, Biolase Technology, USA) at 3.5W (61.7J/cm2), 20Hz. After cavity preparation, cavities were divided into 3 sub-groups (n=3): GA) application of self-etch primer AdheSE (Ivoclar Vivadent); GB) self-etch primer Clearfil SE Bond (Kuraray); GC) one-bottle Single Bond (3M/ESPE). A micro-hybrid composite resin Filtek Z250 was inserted in two increments and light cured. The specimens were sectioned across the bonded surface dividing the teeth into two halves. The cut surfaces were then prepared for SEM analysis. Higher magnification showed the hybrid layer and also resin tags. Gaps were observed in the cavities prepared with laser. With all adhesive systems tested, hybrid layer was cleared observed and resin tags were more pronounced in laser cavities. The results suggested that all adhesives systems tested in the three types of cavities were capable of generate consistent interfaces. Fapesp (Projeto CEPID 98/14270-8).

OP33

Dental bleaching efficacy with diode laser and LED irradiation - An in vitro study.

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Objective: This in vitro study evaluated the whitening efficacy of LED and diode laser irradiation during the dental bleaching procedure, using the two agents Opalescence X-tra and HP Whiteness. Background: Bleaching techniques achieved significant advances with the use of coherent or incoherent radiation sources to activate the bleaching chemicals. Methods: A total of 60 bovine incisors were randomly divided into six groups, three for each bleaching agent, receiving 1) only agent, 2) agent and LED irradiation at wavelength of 470 nm, 3) agent and 1.6 watt diode Laser at 808 nm. The results of the irradiations were characterized with the CIELAB system by measuring the L*a*b* values for the teeth before and after bleaching. Results: The average increase of the lightness value (CIELAB L*) of the different groups was 3-7 and the average chroma value decreased by 5-9. Conclusions: This is to our knowledge the first time that the light sources Laser and LED are compared with respect to their whitening capability when applied to different agents. Best overall results are obtained with the Whiteness HP and Laser association.