Dental Caries

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Effects of low power red laser on induced-dental caries in rats.

Müller KP, **Rodrigues CR**, **Núñez SC**, **Rocha R**, **Jorge AO**, **Ribeiro MS**.

Center for Lasers and Applications, IPEN-CNEN/SP, São Paulo, Brazil.

OBJECTIVE: The purpose of this study was to investigate the effects of low power red laser associated with acidulated phosphate fluoride on the development of induced-dental caries in rats. DESIGN: Dental caries were induced in molars of 40 rats divided into five groups: control group (CG), the teeth were not submitted to any treatment; laser group (LG), teeth were irradiated with a low power red laser (LPRL), power of 30 mW and dose of 5 J/cm(2); fluoride group (FG), teeth were treated with topical acidulated phosphate fluoride (APF) 1.23% applied for 4 min; laser+fluoride group (LFG), teeth were irradiated with LPRL followed by APF; fluoride+laser group (FLG), teeth were treated with APF followed by LPRL. The animals were killed after 48 days, and the first and second molars were extracted to analyze the caries lesion area, microhardness, and calcium and phosphorus ratio. RESULTS: There were no statistical differences among FG, LFG, and FLG regarding to caries area and microhardness, although the caries area were smaller in LFG. Ca/P ratio did not show significant differences among all groups. CONCLUSIONS: Although LPRL before APF application appeared to diminish the caries progression, LPRL did not present any additional benefit compared with acidulated phosphate fluoride on the prevention of induced-dental caries in rats.

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[Alternative methods for prevention and treatment of dental caries using laser and magnetic laser exposure]

[Article in Russian]

Prokhonchukov AA, **Zhizhina NA**, **Kolesnik AG**, **Morozova NV**, **Vasmanova EV**, **Mozgovaia LA**, **Kunin AA**, **Milokhova EP**, **Saprykina VA**, **Nazyrov IuS**, **Kulazhenko TV**, **Semenova LL**, **Ermolov VV**, **Chuprakova EV**.

Alternative methods for prevention and treatment of dental caries are presented, based on the use of laser and magnetic laser exposure (patent No. 2053818, in Russia) with a new generation laser device with Optodan microprocessor monitoring (patent No. 2014107, Russia). The methods are intended for wide clinical application in children and adolescents in pedodontic departments and outpatient centers and particularly for group and individual use in dental rooms at school.