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Volume Page

Keyword:    [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

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[\[PDF \(179K\)\]](#) [\[References\]](#)**Bactericidal Effect of Er,Cr:YSGG Laser on *Streptococcus mutans***[Murat TÜRKÜN<sup>1\)</sup>](#), [L. Sebnem TÜRKÜN<sup>1\)</sup>](#), [Esra Uzer ÇELİK<sup>1\)</sup>](#) and [Mustafa ATES<sup>2\)</sup>](#)

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**Abstract:**

The aim of this study was to compare the antibacterial activities of Er,Cr:YSGG laser with two different power outputs against a chlorhexidine gluconate-based cavity disinfectant. A cavity tooth model test was used to determine the antibacterial activity. Four cylindrical cavities were prepared on the dentin surface of 10 bovine incisors and left in contact with *Streptococcus mutans* for 72 hours to allow bacterial invasion. Following which, Er,Cr:YSGG laser with 0.75 W and 1 W power outputs and a chlorhexidine gluconate-based cavity disinfectant were applied separately on one of the three infected cavities, whereas the fourth was left untreated for control. Standardized amounts of dentin chips were obtained from the cavity walls, and the number of bacteria recovered was counted. Statistical analysis was carried out using one-way ANOVA and Dunnett's C test ( $p=0.05$ ). No significant differences were observed among the data obtained from the chlorhexidine gluconate-based cavity disinfectant and the two Er,Cr:YSGG laser groups ( $p>0.05$ ). However, when compared to the control group, both Er,Cr:YSGG laser groups and the chlorhexidine gluconate-based cavity disinfectant resulted in significantly less bacterial recovery ( $p<0.05$ ). In conclusion, the antibacterial activity on *S. mutans* demonstrated by Er,Cr:YSGG laser with both energy outputs was similar to that of the tested chlorhexidine gluconate-based cavity disinfectant.

**Key words:**



[\[PDF \(179K\)\]](#) [\[References\]](#)

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