

Effect of the Diode Laser on Bacteremia Associated with Dental Ultrasonic Scaling: A Clinical and Microbiological Study

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ABSTRACT

Objective: The purpose of this study is to evaluate the potential use of diode lasers (DLs) to reduce bacteremia associated with ultrasonic scaling (US). Furthermore, the clinical efficacy of DLs as an adjunct to US in the treatment of gingivitis was investigated. **Background Data:** Recently, lasers have found new applications in dental practice. The benefits of the use of DLs as an adjunct to US have not yet been determined. **Methods:** Twenty-two gingivitis patients were treated using a split-mouth study design in which each side was randomly treated by US alone or DL followed by US (DL + US). Blood samples were drawn just before and during US in each treatment step to detect induced bacteremia. Clinical parameters including plaque index, sulcus bleeding index, probing depth, and relative attachment level were recorded at baseline and 4 weeks postoperatively. **Results:** Bacteremia was detected in 15 patients (68%) after US alone, and in 8 patients following DL + US (36%). The reduction of the incidence of odontogenic bacteremia during US after the application of DL was statistically significant ($p < 0.05$). Clinical signs improved eventually, with no significant differences between the two treatment regimens ($p > 0.05$). **Conclusions:** Application of DL energy can reduce bacteria in gingival crevices which may reduce bacteremia following US. The use of DL did not show additional clinical influence on gingival healing after treatment of gingivitis with US.

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