

One-year clinical results of Er,Cr:YSGG laser application in addition to scaling and root planing in patients with early to moderate periodontitis

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Abstract In 30 patients with periodontitis, a total of 278 teeth exhibiting bleeding on probing, subgingival calculus, and a probing depth between 3–6 mm were examined. For each participant, two treatment types were alternatively applied on the contralateral quadrants: scaling and root planing (SRP) as control, and SRP followed by Er,Cr:YSGG laser application (SRP+laser), as a test method. Five clinical parameters: plaque level, bleeding on probing, probing depth, gingival recession and clinical attachment level were examined at baseline and at 2, 3, 6, 12 months after treatment. Of the total of 1,668 sites examined in all patients, 1,088 sites were found with a probing depth of 3–6 mm. In these sites, differences in clinical parameters between SRP and SRP+laser-treated quadrants were analyzed, assuming the level of $p < 0.05$ as significant. After 2 months from baseline, the mean probing depth reduction and the clinical attachment level gain were significantly greater in SRP+laser than in SRP quadrants, and remained so throughout the study ($p < 0.001$). A marked reduction of the bleeding scores occurred in all examined sites, irrespective of the treatment method. However, after 12 months, significantly less teeth exhibited bleeding on probing in SRP+laser quadrants than in SRP quadrants ($p < 0.001$). The mean plaque and gingival recession levels did

not differ between the SRP and SRP+laser quadrants neither before nor after the treatment. The periodontal procedures either using Er,Cr:YSGG laser after SRP or SRP alone, lead to significant improvements in all clinical parameters investigated. However, laser application, as an adjunct to SRP, appeared to be more advantageous.

Keywords Er,Cr:YSGG laser · Scaling and root planing · Clinical attachment level

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