

3587 Adjunctive use of a low-power laser in periodontal therapy

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Aim: to evaluate the 12-month effects of adjunctive use of a low-power laser in non-surgical periodontal treatment for patients with moderate to advanced periodontitis. **Methods:** 14 patients were recruited. Presence of plaque (PI%), bleeding on probing (BOP%), probing pocket depth (PPD), probing attachment level (PAL) and gingival crevicular fluid (GCF) volume, were recorded at baseline and up to 12 months after treatment. A Helium-Neon (He-Ne) low-power laser, operating at 632nm with an output power of 0.2mW was used. A single-blind, intra-individual design was adopted and test and control sides were randomly selected by coin-toss. Two matched periodontitis sites on each side having PPD>5mm and radiographically confirmed infrabony defects were selected. Both test and control sides were treated non-surgically. On the test side, laser irradiation was applied directly at the buccal or palatal aspects of the selected sites, each time for ten minutes on eight occasions over the first 3-month period. **Results:** whole-mouth PI% decreased from 83% at baseline to 16% at 12 months and BOP% decreased from 95% to 33%. At 12 months, in the selected sites mean PPD reductions for test and control sides were 3.8mm and 3.9mm and mean PAL gains were 1.9mm and 2.1mm, respectively, with no statistically significant differences found using Wilcoxon signed ranks tests. GCF volume reduction in test sides at 3 months, from 69 to 12, was statistically significantly greater than the reduction, from 66 to 18, in control sides ($p<0.05$), but no significant differences were found in GCF volume reductions between test and control sides at 6, 9 and 12 months. **Conclusions:** while low power laser was shown to have a short-term effect on GCF volume, no adjunctive clinical effects of this He-Ne laser irradiation were noted following non-surgical periodontal therapy in patients with moderate to advanced periodontitis.

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