Dentistry 2017, 7:5 (Suppl)
http://dx.doi.org/10.4172/2161-1122-C1-015

Evaluation of the effect of low level laser therapy after gingivectomy on wound healing

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Despite the use of lasers in dentistry from the 1980s until today, the use of low level laser therapy laser (laser bio-stimulation) is not very common in periodontology. The aim of this study is to evaluate the effect of low power 980 nm diode laser therapy after gingivectomy and in comparison to the non-surgical periodontal treatment on bone healing. Twenty (20) systemically healthy patients with gingival hyperplasia due to chronic inflammation in the maxilla or mandibular anterior region at least in 6 teeth symmetrically were included. Bleeding on probing, gingival index, plaque index, clinical attachment level was recorded at the beginning and 1 month after treatment. The patients underwent scaling and root planning treatment after one week of periodontal diagnosis. The curvature of the ginigiva of patients was evaluated for the need of gingivectomy and gingivoplasty and was done for the patients that need this operation. The sides that applied laser therapy was determined by using coin toss and the other sides were protected from irradiation by putting at least 5 mm thickness of silicon made appliance. The laser of power 4 J/cm (980 nm) were applied at 0, 1, 3 and 7 days and the surgical area of all the patients at 0, 3, 7, and 15 days were painted with paint mira-2-tone and the taken photographs by the Image J programs were evaluated. Clinically, Kolmogorov-Smirnov test was used for checking the normal distribution of wound healing and VAS results. Willcoxan test and Friedman test were used to compare the dependent two groups or multiple groups subsequently. The results showed that there were no significant differences between groups in SD, KAS, PI, GI, VAS and wound healing but there was decrease in VAS values at 3 and 7 days. The area that applied DDL showed a decrease in pain. After this study, 980 nm low level therapy upon the clinical parameters could have a positive effects when applied after gingivectomy and gingivoplasty.

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