Effects of Low-Level Laser Therapy (660nm) with Output Power of 30 &60 mW in the management of the experimentally induced oral mucositis clinical and immunohistochemical study.

Background: Oral mucositis is still a common and severe acute side-effect of many oncologic treatments. It may affect quality of life, require supportive care and impact treatment planning and its efficacy. Low-level laser therapy (LLLT) seems to promote pain relief and reduces oral mucositis severity. Aims of the study: Clinical evaluation of oral mucositis in response to LLLT (30&60mW) treatment, in comparison to (control group). Immunohistochemical assessment of (TNF- α &IL-10) between two laser treated groups (30,60mW) and control non-treated group. Materials &methods: Sixty adult dark agouti rats received 30mg.kg of MTX at day (0,3) &randomly divided into three groups: Group I (16) rats as control group wasn't treated. Group II (22) rats were included &treated with LLLT 30 mw, energy density 10 J/cm^2, diode laser at 660 nm, continuous pointed mode in daily does from day 6 till day eleven .and Group III (22) rats were included & treated with LLLT 60mw. At day eleven all animals sacrificed and buccal mucosa biopsy was taken from each animal for immunohistochemical analysis of (TNF-α, IL-10). Results: There were no statistical significant differences among the study groups (p <0.05) at day six. The clinical scores exhibited Statistical significant differences (p<0.05) among all study groups at day eleven. In comparison with clinical scores at day six: there were statistically significant negative correlations and curbing of scores (R=-0.055) (p= 0.0089). The histological expression of TNF- α had expressed statistically significant increase of their scores in the control group in comparison to their decrease in both two laser (30&60Mw) groups. While histological expression of IL-10 revealed the contradictory pictures among the study group. Where it was decreased in the control group in comparison to the laser (30&60Mw) groups. Conclusion: we conclude that LLLT 660nm 30&60 mW can be used for treatment of experimental oral mucositis with 10J/cm^2, but with higher response at 30 Mw.

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