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EVALUATION OF EFFECTS OF LASER THERAPY ($\lambda = 830$ nm) ON ORAL ULCERATION INDUCED BY FIXED ORTHODONTIC APPLIANCES

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One of the most interesting and controversial therapy is the bioestimulation or low-intensity laser therapy, largely used clinically. The physical model and the biological reasons for the effectiveness in laser treatment have not made clear. Despite some important studies showing the primary photoaceptors in cells there are still little information about dependence of the effect on the irradiation dose, wavelength, regime and intensity. This work was undertaken to compare LILT and conventional treatment on oral ulceration induced by fixed orthodontic appliances. Ethical approval was granted by the University of São Paulo, Dentistry School's Research Ethics Committee. Twenty patients presenting fixed orthodontic appliance-induced oral ulceration were randomly chosen for this study. These patients were then divided into two groups. In Group 1 the ulceration was submitted to low-intensity infrared laser radiation ($\lambda = 830$ nm), at 30 mW, fluency per point of 1,3 J/cm^2 and an exposure time ranging from 3 s to 33 s, depending on ulceration area. Ulceration was irradiated on the first day, the process being repeated 24 h and then 48 h later. Evaluations were made seven days after the first irradiation. Group 2 comprised of patients who were exposed to conventional treatment where wax was used to cover the afflicted area. These patients also took triancinolona. Evaluation was made on the same days. In both groups the cause of irritation was eliminated whenever was possible. Clinical and comparative statistical results between both groups has shown that in the case of Group 1: a-) healing process was faster with reduction of sore areas; b-) immediate relief of pain following first irradiation, as stated by patients. Taking into consideration the vast amount of patients who are bearers of fixed orthodontic appliances and whose most usual and frequent complaint is pain and irritation, the use of LILT is highly recommended due to its simplicity and efficacy.

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CLINICAL EFFECTS OF LOW LEVEL LASER THERAPY ON SEVERE CASES OF ISCHAEMIC HEART DISEASES WITH ANGINA ON EFFORTS—THE FIRST REPORT FROM INDIA

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Low Level Laser Therapy (LLLT) has been used in treatment of difficult cases of angina i.e. in patients who were advised by cardiologist to undergo bypass surgery or angioplasty at the earliest. Twenty five cases of angina were studied to evalute the efficacy of the treatment. Majority of the patients suffering for 2–10 years were in the age group between 45–65 years. Pharmaceutical preparations were not sufficient to relieve their sufferings. The efficacy of the treatment has been evaluted by noticing number of angina attacks, frequency of attacks, intensity of attacks, exercise tolerance and reduced need for medication after the laser treatment. Infra red diode lasers 890 nm (Muravey, Technika-Russia) power 10 mW in continuous mode was used in the pulsed mode for transcutaneous external laser therapy. Red laser (Mulat, Technica-Russia) 630 nm of power 5 mW was used for intravenous laser application. According to the severity of condition, 2–3 courses were advised in a year. Each course was of 15–30 sessions. Laser therapy was so effective that after receiving the therapy majority of the patients did not want to undergo cardiac surgery. On the background of ineffectiveness of pharmaceutical products in such cases the results were very encouraging. In 80% of the patients, even after two courses of laser treatment, it has been observed as follows: 1) 72% patients required less medicine day by day. 2) Incidents of angina were remarkably reduced in frequency and in intensity in 80% of patients. 3) 80% of patients showed much better exercise tolerance even with reduced medicines (and in some cases without medicines). Thus if cardiac surgery is contraindicated (e.g., the patient has highly risky status) or if the patient has refused the surgery, LLLT may be a modality of choice.

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COMPARISON BETWEEN LOW LEVEL LASER THERAPY, TRANSCUTANEOUS ELECTRO-NEURAL STIMULATION, VISIBLE INCOHERENT POLARISED LIGHT AND PLACEBO IN THE TREATMENT OF LATERAL EPICONDYLITIS: A PILOT CLINICAL STUDY ON 120 PATIENTS

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The aim of this pilot study was to compare the efficacy of Low Level Laser Therapy (LLLT), Transcutaneous Electro-Neural Stimulation (TENS), visible incoherent polarised (VIP) light and placebo in the treatment of lateral epicondylitis-tennis elbow. The patient population ($n = 120$) was randomly allocated into four groups according to treatment applied. The therapy lasted three weeks per each treatment modality, where total number of treatments per patient was twelve (5+4+3 per three weeks). LLLT was applied as Trigger Points technique in all patients, using an infrared diode laser in a dosage of 4 J/point. TENS was applied by using gummy plates in the same sizes and by exactly measuring the amount of mA, mV and Hertz in all patients. VIP light was applied in a dosage of 4 J/cm^2. Placebo was applied by using a laser device with no active laser emission. All patients suffered from chronic form of lateral epicondylitis, with x-ray proved no changes on the cervical spine. The outcome measurement was focused on the level of pain relief, estimated according to the Visual Analogue Scale (VAS). The results have demonstrated that the highest percentage of pain relief was achieved in patients treated with LLLT (over 45% of lased patients reported 90–100% pain relief). The second best pain relief was reported in the group of patients treated with TENS. None of the patients treated with VIP light reported 90–100% pain relief. The worst results were reported in placebo group ($< 20\%$ of average pain relief). This pilot study indicates the effectiveness of LLLT in the treatment of lateral epicondylitis compared to other treatment modalities and placebo. Carefully conducted multicenter, randomized, placebo controlled clinical studies are recommended for assessing the efficacy of LLLT, TENS and VIP light in the treatment of chronic form of lateral epicondylitis.