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Randomized Controlled Trial

> Photodiagnosis Photodyn Ther, 21, 404-408 Mar 2018

Efficacy of Photodynamic Therapy or Low Level Laser Therapy Against Steroid Therapy in the Treatment of Erosive-Atrophic Oral Lichen Planus

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Abstract

Background: The efficacy of photodynamic therapy (PDT) or low level laser therapy (LLLT) in the treatment of oral lichen planus (OLP) is debatable. The aim of this study was to compare the effects of PDT, LLLT or topical corticosteroid application in the treatment of erosive-atrophic OLP.

Materials and methods: Forty-five adult patients with erosive-atrophic biopsy-proven OLP on the tongue or buccal mucosa (size ≤ 3 cm) were randomly divided into three groups. Group-1: patients receiving PDT topical application of 50 μ l toluidine blue (1 mg/ml) with micropipette and after 10 min treated by laser irradiation using GaAlAs laser (630 nm, 10 mW/cm², continuous wave, spot size: 1 cm²); Group-2: patients receiving LLLT using diode laser (630 nm, 10 mW, continuous wave, spot size: 1 cm²); and Group-3: patients receiving topical corticosteroid applications consisting of dexamethasone (0.5 mg in 5 ml water) mouthwash for 5 min. Demographic data, type, and severity of the lesions and pain were recorded before and after treatment and then at the 1 year follow-up.

Results: There was a significant difference in sign score changes before and after the treatment in the PDT group ($p = 0.03$), LLLT group ($p = 0.04$) and in the control group ($p = 0.02$). There was a statistically significant difference between group-1 ($p = 0.001$) and group-2 ($p = 0.001$) against group-3 before and after treatment. Mean amount of improvement in pain was significantly greater in the control group in comparison with the PDT and LLLT groups ($p < 0.001$). The efficacy index of the PDT group improved significantly more than the LLLT ($p = 0.001$) and corticosteroid groups ($p = 0.001$).

Conclusion: Within the limits of the present RCT, it is indicated that PDT and LLLT are effective in the treatment of erosive-atrophic forms of OLP in adult patients. However, further comparative clinical trials are needed to obtain strong conclusions in this regard.

Keywords: Corticosteroids; Low level lasers; Oral lichen planus; Photodynamic therapy.

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