

# **Analysis of the psychopathological profile and cost-effectiveness of oral lichen planus patients treated with photobiomodulation**

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## **Abstract**

**Background:** Oral lichen planus (OLP) is a chronic inflammatory disease that affects 1.9% of the population, with a slight predilection for women, characterized by manifestations in the skin and mucous membrane.

**Objective:** To evaluate the effect of PBM on the psychological profile of patients with oral lichen OLP in comparison to corticoid and to investigate the cost-effectiveness of both treatments.

**Materials and methods:** Patients were randomized into two groups: Control (clobetasol propionate 0.05%) and Photobiomodulation (660 nm, 100mW, 177 J/cm<sup>2</sup>, 5 s, 0.5 J) twice a week for 30 days. The Hospital Anxiety and Depression Scale (HADS) was used in different treatment time points and at follow-up. The cost-effectiveness was calculated using the improvement in OHIP-14 after treatment.

**Results:** OLP patients showed detected levels of anxiety and depression at baseline. No improvement in anxiety and depression was noticed after treatments. The treatment with corticoid was more cost-effective than PBM.

**Conclusions:** Psychological distress was not improved after both treatments. This study highlights the need for additional therapeutic interventions in OLP patients, to early recognize and to manage the alterations in their psychological profile. Moreover, PBM is a minimally invasive therapy associated with no side effects must be considered in clinical practice, especially in those patients with refractory disease.

**Trial registration:** This study is registered at ClinicalTrials.gov; the registration number is NCT03320460, registered in 17/10/2017.

**Keywords:** Oral lichen planus; Anxiety; Depression; Photobiomodulation; Cost-effectiveness