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Randomized Controlled Trial> Lasers Med Sci, 33 (6), 1255-1262Aug 2018

## Evaluation of Laser Therapy and Alpha-Lipoic Acid for the Treatment of Burning Mouth Syndrome: A Randomized Clinical Trial

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## Abstract

The aim of this study was to evaluate the efficacy of low-level laser therapy (LLLT) and alpha-lipoic acid (ALA) in the treatment of burning mouth syndrome (BMS) and secondary oral burning (SOB) by unstimulated sialometry, symptom assessment, and measurement of salivary TNF- $\alpha$  levels. Forty-four patients were randomized into four treatment groups: BMS/laser (n = 10), BMS/ALA (n = 5), SOB/laser (n = 15), and SOB/ALA (n = 14). The control group consisted of eight healthy female subjects. Unstimulated salivary flow was measured before and after treatment, and the collected saliva was stored at - 20 °C for the analysis of TNF- $\alpha$ . Symptoms were evaluated before and after treatment using a pain visual analog scale. Most patients were women (81.8%) during menopause (72.2%). LLLT and ALA were efficient in increasing salivary flow only in BMS but provided symptom relief in both conditions. TNF- $\alpha$  levels did not differ between patients with BMS and SOB or between those patients and the control group. No differences were observed in posttreatment TNF- $\alpha$  levels in either condition. The results of this study suggest that LLLT and ALA are efficient therapies in reducing burning mouth symptoms, with LLLT being more efficient than ALA.

**Keywords:** Burning mouth syndrome; Diagnosis; Low-level laser therapy; Salivation; Tumor necrosis factor alpha.

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