**EFFECT OF PHOTOBIOMODULATION ON SALIVARY FLOW, IMMUNOGLOBULIN AND PH LEVEL IN INDIVIDUALS WITH XEROSTOMIA: CLINICAL TRIAL CONTROLLED AND RANDOMIZED**

Barros, ACSM, Dentist Surgeon - MSc Fellow, Horliana ACRT, Bussadori SK, dos Reis HRLR, Motta LJ.

**Abstract**

Saliva is directly related to oral health and homeostasis, and therefore, the occurrence of caries, periodontitis, fungal and bacterial infections can affect and compromise the population's quality of life. Changes in salivary parameters, such as decreased flow, changes in pH and composition, can lead to changes in oral health, and prevention and treatment strategies need to be studied and developed. Studies using photobiomodulation have shown promise in the improvement of some salivary parameters. The aim of this study is to compare the effect of photobiomodulation with infrared laser protocols and modified ILIB therapy on the salivary parameters of adults affected by drug xerostomia. The sample will be composed of 30 adults, with healthy teeth, between 18 and 45 years of age, who will be divided into 2 groups, with 15 participants in each group. Each group will receive a type of light. Saliva will be collected, the volume will be measured and the salivary flow determined (ml/min). Salivary IgA concentrations will be measured in all samples. Infrared laser and modified ILIB will be applied to the determined group. Total saliva at rest will be collected before, immediately, 30 minutes and 7 days after the interventions. The applications of the lights will be in the regions of the parotid glands bilaterally, as well as in the region of the submandibular and sublingual glands for the infrared laser and in the wrist for irradiation of the radial artery for the modified ILIB group. Data will be analyzed using Analysis of Variance (ANOVA) and Pearson's correlation test (= 0,05). The Statistical Package for the Social Sciences (SPSS) (IBM Corp. launched in 2012. IBM SPSS Statistics for Windows, version 21.0. Armonk, NY: IBM Corp) version 15.0 will be used for all analysis.

Keywords: photobiomodulation, LED, lasers, modified ILIB, saliva, salivary glands, xerostomia.

The study was approved by the ethics committee of Universidade Nove de Julho under no. 5.305.375 on March 22, 22. This study is not recruiting yet.



**Biography**

Graduated in Dentistry at Universidade Estadual Paulista (UNESP) - 2012. Specialist in Orthodontics and Facial Orthopedics at Faculdade São Leopoldo Mandic (2016). Master's student fellow in Biophotonics applied to Health Sciences (UNINOVE).

**References**

Scully CBE. Drug Effects on Salivary Glands: Dry Mouth. Oral Diseases 2003;9(10):165-76.

Garcia LB, Bulla JR, Kotaka CR, et al. Testes bacteriológicos e salivares para avaliação do risco de cárie. Rev bras anal Clin 2009; 41: 69–76.

Lima D.P. et al. Saliva: reflection of the body. Internatonal Journal of Infectious Diseases, 2010 march. https://doi.org/10.1016/j.ijid.2009.04.022.

Lončar B, Stipetić MM, Baričević M, Risović D. The effect of low-level laser therapy on salivary glands in patients with xerostomia. Photomed Laser Surg. 2011 Mar;29(3):171-5. doi: 10.1089/pho.2010.2792.

Yoshizawa JM, Schafer CA, Schafer JJ, Farrell JJ, Paster BJ, Wong DT. Salivary biomarkers: toward future clinical and diagnostic utilities. Clin Microbiol Rev. 2013 Oct;26(4):781-91. doi: 10.1128/CMR.00021-13.

De Freitas LF, Hamblin MR Proposed Mechanisms of Photobiomodulationor Low-Level Light Therapy. IEEE J. Sel. Topo. Quantum Electron. 2016; 22 : 7000417. doi: 10.1109 / JSTQE.2016.2561201.

Fidelix T, Czapkowski A, Azjen S, Andriolo A, Neto PH, Trevisani V. Low-Level laser therapy for xerostomia in primary Sjogren,S syndrome: A randomized trial.Clin Rheumatol. 2018 Mar;37(3): 729-736. doi: 10.1007/s10067-017-3898- 9.

Nemeth L, Groselj M, Golez A, Arhar A, Frangez I, Cankar K. The impact of photobiomodulation of major salivary glands on caries risk. Lasers Med Sci. 2020 Feb;35(1):193-203. doi: 10.1007/s10103-019-02845-x.

Varellis MLZ, Gonçalves MLL, Pavesi VCS, et al. Evaluation of photobiomodulation in salivary production of patients with xerostomia induced by anti-hypertensive drugs: Study protocol clinical trial (SPIRIT compliant). Medicine. 2020 Apr;99(16):e19583. DOI: 10.1097/md.0000000000019583.