

Effect of photobiomodulation therapy on the reduction of the inflammatory process and pain control in an experimental model of induced rheumatoid arthritis.

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ABSTRACT

Rheumatoid arthritis (RA) is classified as a chronic inflammatory disease of the joints, due its systemic autoimmune alterations, which lead to progressive irreversible degenerations of the cartilage and bones involved in the joints. RA affects about 0.5% to 1% of the global population, predominantly women. Experimental studies "in vivo" have shown that through photobiomodulation (PBM) therapy, the inflammatory modulation has been shown to be positive. The purpose of this study is to verify an "in vivo" sample in order to evaluate the effects of PBM therapy on the control of the inflammatory process and pain in an experimental model of RA. In the methodology of this work, it will be used male Wistar rats that will be divided into 4 groups: CTL (control), RA NT (Rheumatoid Arthritis not treated), RA LP (Rheumatoid Arthritis treated with local photobium), and RA VP (Rheumatoid Arthritis treated with vascular photobium systemic effect). For the induction of RA, the parameters of a previous study will be used, where the animals received 2 intradermal + systemic injections of the lesion-inducing solution on days 0, 7 and 21. For the groups to be treated, Local PBM (808nm; 6J; 100mW) and Vascular PBM (808nm; 180J; 100mW), will be introduced after the last induction. It will be noticeable the histological analysis of tissue organization and inflammatory infiltrate; Functional tests (Allodynia and mechanical properties); Biochemical/Molecular analysis (RT-PCR, Inflammatory mediators and Receptors involved in pain). The statistics that will be used: Means of the MPD and ANOVA (one-way) with Tukey's post hoc.

Keywords: Photobiomodulation; Rheumatoid Arthritis; Cartilage; Inflammatory Process; Pain; Mechanical Properties.

MINI RESUME

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