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Influence of laser therapy low power and hyaluronate weight high sodium in molecular tmj of rats with arthritis, after induction by cfa – morphological aspects

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The inflammatory process may be located in the synovial membrane, articular capsule or retrodiskal tissues, and the presence of degenerative joint changes is called arthritis. Currently, Low-level laser (LLL) and high molecular weight sodium hyaluronate (HMWSH) have been used for treating TMJ disorders and promising clinical results have been reported. Therefore, the aim of this study was to characterize the morphological action of the therapy with LLL and HMWSH on a TMJ with induced arthritis. Forty-eight male rats were divided into the following groups: GA, animals with arthritis induced by an intra-articular complete Freund's adjuvant (CFA) injection; GL, animals with arthritis treated with LLL; GH, animals with arthritis treated with HMWSH; and GHL, animals with arthritis treated with LLL and HMWSH. All experiments were left TMJ and TMJ right in GA were used as control (GC). Morphological analysis, histomorphometric and birefringence collagen fibers (Polarization Microscopy) were perfomed on the articular disc. The group GA exhibited the components of the TMJ such as thickness of the joint disk; hyperplasia of the synovial membrane and pannus formation; bone resorption of mandibular fossa; flattening of the mandibular condyle and the presence of intense inflammatory infiltrate of mononuclear cells in the subsynovial tissue. The groups GL, GH and GHL showed narrower articular disc and higher birefringence of collagen fibers compared to GA. Based on the results, it is concluded that the proposed model of arthritis showed to be satisfactory for studies of this disease. The LLL and HMWSH demonstrated anti-inflammatory and protective effects on joint structures.

Biography

Evanisi, post-graduated from the Faculty of Dentistry of Piracicaba, Campinas, Brazil, 1996. She is Professor Doctor Assistant of the Department of Structural and Functional Biology, Anatomy area, Biology Institute, Unicamp, Brazil; and responsible for the Electromyography Laboratory, Motor Control and Experimental Electro-thermotherapy. Collaborates in the Graduate Program in Cell Biology and Structural Biology Institute, Unicamp, Brazil and the Graduate Program in Biomedical Engineering, School of Electrical Engineering at the Federal University of Uberlândia, UFU, Brazil. It features articles in the areas of laser therapy and electromyography supported by development agencies to research. On graduation is responsible for Anatomy area for medical school.

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