EFFECT OF HYPERBARIC OXYGENATION AND OZONE ON ALVEOLAR BONE REPAIR AFTER THE USE OF ZOLEDRONIC ACID: IN VIVO STUDY

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RESUMO

Bone remodeling is a complex process influenced by intrinsic and external factors. The use of antiresorptive and antiangiogenic drugs, such as zoledronic acid, is common in the treatment of osteoporosis and bone neoplasms, but it can cause adverse effects like medication-related osteonecrosis of the jaw (MRONJ). This study examined how zoledronic acid affects alveolar bone repair and evaluated the impact of adjunctive therapies such as hyperbaric oxygenation (HO) and ozone (OZ). Fifty-four Wistar rats were used, divided into Control, Osteonecrosis, Osteonecrosis+OZ, Osteonecrosis+HO, and Osteonecrosis+OZ+HO groups, with evaluations conducted at 14 and 28 days post-tooth extraction. Histological, histomorphometric, and micro-computed tomography analyses were used to assess bone repair. Zoledronic acid caused significant changes in alveolar bone repair, most notably at 14 days post-extraction. HO and OZ therapies were beneficial, especially when combined, resulting in improvements in total bone volume, partially reversing the damage caused by zoledronic acid.

PALAVRAS-CHAVE: Osteonecrosis, bisphosphonates, animal models, Ozone Therapy, Hyperbaric Oxygenation

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