

CHRONIC EXPOSURE TO SODIUM MONOFLUORPHOSPHATE POST-DENTAL EXTRACTION DECREASES ALVEOLAR BONE REPAIR

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The most used drugs as sources of fluoride (F^-) in human therapeutics are sodium fluoride (NaF) and sodic monofluorophosphate ($Na_2FPO - MFP$). Fluoride bioavailability is greater when MFP is administrated, which allows to use lower doses to decrease adverse effects. According to the dose and the administration form, this ion produces different biologic and physical-chemical effects on bone tissue. **OBJECTIVE:** To study the effect triggered by chronic exposure to MFP during the active phase of bone resorption post-dental extraction, on the structural properties of alveolar bone and metabolic parameters associated. **METHODS:** Male Wistar rats ($n=4-6$ per group) to which it was extracted the first molar from one of the hemimandible, were divided into two experimental groups who drank water with different F^- concentrations during 4 weeks: Controls (0,016 mM of F^-) and Treated with MFP (0,4 mM of F^-). Biochemical parameters of phosphocalcic metabolism were analyzed in plasma samples. Urinary F^- was determined using an ion selective electrode. Complete jaws were extracted, histologically processed and stained with H&E. On digital microphotographs of serial buccolingual sections, at the level of first molar, the percentage of bone formed [BV/TV (%)], in the alveolar cavity during post-extraction period was measured using Image Pro Plus software. Results were analyzed by Student "t" test and were expressed as media \pm SE. **RESULTS:** No significant differences were observed in water intake nor body weight gain due to treatment. Urinary F^- was higher in rats chronically exposed to MFP ($p<0,05$). Calcemia and phosphatemia were increased in treated animals ($p<0,05$) and total alkaline phosphatase (FAL) did not showed significant differences between groups. BV/TV (%) in alveolar cavity was lower in treated animals compared to controls ($p<0,05$). **CONCLUSION:** Fluoride incorporation in the form of MFP during the immediate post-dental extraction period produced an alteration in phosphocalcic metabolism and a decrease of alveolar bone volume, suggesting a negative effect on the dental bone repair process.

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