EFFECT OF SODIUM FLUORIDE ADMINISTRATION ON ALVEOLAR BONE HEALING AFTER FIRST MOLAR EXTRACTION

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Fluoride (F^-) is used in the prevention of dental caries because of its remineralizing and antibacterial action. In human therapy, F^- is more frequently administered as sodium fluoride (NaF) or sodium monofluorphosphate (MFP). In a previous work, we showed that treatment with MFP decreased bone volume in the alveolar bone post first molar extraction. **OBJECTIVE:** to study the effect of NaF administration in drinking water, post first molar extraction, on biochemicals markers of phosphocalcic metabolism and histomorphometric parameters of alveolar bone. **METHODS:** The first right lower molar of twelve 21-days-old male Wistar rats was extracted under anesthesia. Then, rats were divided into two experimental groups which drank water with different concentrations of F^- over 4 weeks; Control group (0.3 mg/L of F^-) or NaF treated group (22 mg/L of F^-). After treatment, animals were euthanized by cervical dislocation and mandibles were collected for histological processing. Plasma Ca and P levels and alkaline phosphatase (ALP) activity were determined. Serial buccolingual sections, at the level of first molar healing socket, were stained with H&E and then microphotographed for histomorphometric analysis. On digitalized images, bone volume [BV/TV(%)] was determined by Image Pro Plus software. Data were analyzed by Student “*t*” test. **RESULTS:** There were no significant differences on daily water intake nor gain of weight by the treatment. The animals treated with NaF showed an increase in Ca and P levels ($p<0.05$). No significant differences were observed on ALP levels. BV/TV (%) in the first molar healing alveolar bone decreased in the group treated with NaF compared to control group (($p<0.05$). **CONCLUSIONS:** The results suggest that the dose of NaF used in this study generates a negative effect on the dental-alveolar bone reparation process.

Keywords: sodium fluoride, molar extraction, bone reparation

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