

Histopathological liver changes in natrium fluoride administration to a population of mice NMRI type

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ABSTRACT

It has been revealed that excessive fluoride intake on long-term is associated with toxic effects and can damage a variety of organs and tissues in the human body, for example, the liver tissue. The molecular mechanisms of fluoride-induced hepato-toxicity are not well understood. The study wants to offer up-to-date insights concerning the effects of natrium fluoride on hepatic tissues when this substance is administrated to a population of mice. The study was conducted on NMRI mice descending from the pregnant females treated with 0.25 mg and 0.5 mg natrium fluoride by daily gavage, from the beginning of pregnancy until the lactation was ceased. Then, the mice, males and females, were divided in six groups, three groups descending from the pregnant females treated with 0.5 mg natrium fluoride (Groups 1A, 1B and 1C) and three groups from the pregnant females with 0.25 mg natrium fluoride (Groups 2D, 2E and 2F). From the moment the lactation is finished until adulthood, the animals received the following treatments: homeopathic (a CH7 solution of natrium fluoride – Groups A and D), allopathic-homeopathic (0.25 mg‰ natrium fluoride administered like drinking water ad libitum and CH7 solution of natrium fluoride – Group E; 0.5 mg‰ natrium fluoride administered like drinking water ad libitum and CH7 solution of natrium fluoride – Group B), and allopathic administration of natrium fluoride (0.25 mg‰ natrium fluoride like drinking water ad libitum – Group F; 0.5 mg‰ natrium fluoride like drinking water ad libitum – Group C). When the males reached adulthood, the administration of natrium fluoride was stopped and, by randomization, they were selected for euthanasia. The euthanasia was realized by cervical dislocation. The testes for the histopathological examination were preserved in a 10% formalin solution. The preparation of samples for optical microscopy was realized with Hematoxylin-Eosin staining. The results indicate that natrium fluoride administered in different doses, even in homeopathic dose or in allopathic-homeopathic dose, determined centrolobular vacuolar dystrophy of hepatic tissue, cariomegalia, granulo-vacuolar dystrophy, centrolobular hyperemia centrolobular degenerescences of hepatocytes and discreet centrolobular apoptosis.

Key words: natrium fluoride, histopathology, mice, hepatic tissue

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