

**STUDY OF FLUORIDE-INDUCED HAEMATOLOGICAL ALTERATIONS AND LIVER OXIDATIVE STRESS IN RATS****Djouadi Anfal and Derouiche Samir***

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ABSTRACT

Fluorine is a necessary biological trace element for human health. However, fluoride accumulation leads to cascading effects resulting in altered physiological functions in human being. The current studies evaluated the effect of fluoride induced hematological alterations and oxidative stress in the liver of experimental rats. For this purpose, adult female Wistar albino rats divided into control and NaF treated group. sodium Fluoride (400 mg/kg b.w) added in their drinking water for 70 days. Compared with the control, a significant decrease in the body weight gain ($p < 0.001$) and increase in relative liver weight ($p < 0.001$) were noticed in the NaF group. Our results showed that fluoride treatment caused an increase in Granulocyte ($p < 0.001$), White blood

cell ($p < 0.001$), Lymphocyte ($p < 0.01$) and Platelets ($p < 0.01$) compared with the control. In addition, it led to an increase in triglyceride ($p < 0.001$), cholesterol ($p < 0.01$) level, GOT ($p < 0.01$) and GPT ($p < 0.001$) activities in serum animal compared to the control group. In contrast fluoride caused an oxidative stress by decrease in GSH level and GST activity and increase in MDA concentration compared with the control group. In Conclusion, Results demonstrated the toxic effect of high-dose of fluoride by causing oxidative stress and inflammation in hepatic tissue.

KEYWORDS: Sodium Fluoride ; liver; hematological parameters; stress oxidative.

1. INTRODUCTION

Fluoride (F) is abundant in the environment and exists only in combination with other elements as fluoride compounds, which are constituents of minerals in rocks and soil. Sources of fluoride include natural fluoride in food stuffs and water (fluoridated water