Abstract

The aim of this study is to evaluate liver toxicity on exposure to n-nitrosamine precursors as well as the effect of ultraviolet light on n-nitrosamines and its precursors. Toxicological evaluation of the liver following single dose treatment of wistar rat with 8.2125 mg NaNO₂/adult rat and in rats given a combined dose of 50 mgDMA-HCl and 8.2125 mg NaNO₂/adult rat showed a steady elevation of the liver function enzymes. Histopathological analysis of the liver showed hepatic necrosis in the chemical induced rats. Following UV exposure after in vitro incubation of rat liver microsomal plus soluble fraction with NaNO₂ and NaNO₂ plus DMA-HCl, nitrite concentration in the NaNO₂ incubation medium was 19.5 and 2.2 μg/mL before and after UV exposure respectively while the nitrite concentration in the NaNO₂ plus DMA-HCl incubation medium was 23.5 and 2.5 μg/mL, respectively. Nitrite loss was significant (p<0.05) between before and after UV exposure in all groups. UV exposure, thus degraded the nitrosamine precursors, nitrite and DMA-HCl, thereby inhibiting possible nitrosation. The high values of the activities of serum transaminases (AST and ALT), alkaline phosphatases (ALP) and gamma-glutamyltransferses (γ-GT), relative to control values are indicative of severe intrahepatic cell damage.

Cite this Reference: