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Antioxidant effect of Butylated Hydroxytoluene in Alpha Cypermethrin-Intoxicated Rats.

Ghada M. Gomaa; Yosef T. A.; Hanafy A. and Azza M. Kattawy

Dept. of Pharmacology, Fac. of Vet. Med., Kafrelsheikh University, Egypt

ABSTRACT

The present study was done to evaluate the protection role of butylated hydroxytoluene (BHT) against the toxic effects of alpha cypermethrin (α-CP). Eighty mature male Sprague-Dawley rats were randomly assigned to four equal experimental groups including –ve control group; +ve control group which administered orally sublethal dose α-CP (11.1 mg/kg b.w. twice weekly) for 4 weeks and two groups treated with BHT either at low concentration (500 mg/kg ration) or at high concentration (1000 mg/kg ration) together with α-CP for 28 days. Serum lipid profile, some antioxidant enzymes activities and oxidative biomarkers in the liver and blood were estimated, moreover, histopathologic examination of the liver was performed after 2 and 4 weeks from the experimental period. The results revealed that administration of α-CP caused significant increase in serum cholesterol, triglycerides and high density lipoprotein (HDL) while the level of low density lipoprotein (LDL) was decreased significantly. It also induced significant increase in reduced glutathione (GSH), lipid peroxidase (MDA) and glutathione-s-transferase (GST) with significant decrease in superoxide dismutase (SOD). These results were correlated with histopathologic changes in liver. Co-treatment of BHT (especially at low concentration) and α-CP resulted in significant improvement of all tested parameters. So it is concluded that BHT can be used as a protective agent against α-CP toxicity due to its antioxidant and free radical scavenging effects.