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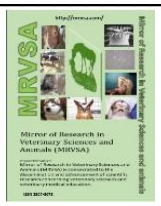

Effect of vitamin E on Some Blood Parameters Related to Cardiovasacular Diseases in Cadmium Chloride- Treated Rabbits

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Abstract

This study was designed to study the effect of cadmium as an oxidant agent on cardiovascular system and some blood parameters and the possible preventive role of vitamin E on deleterious effects of cadmium in adult male rabbits. Twenty adult male rabbits were divided randomly into 4 groups (5 animals /group) and treated daily for 84 days. The first group were received ordinary tap water, serving as control (group C); the second group (T1) received ad libitum supply of drinking water containing (50ppb) cadmium chloride; the third group T2 received (50ppb) of cadmium chloride in drinking water in addition to intubation of vitamin E (40mg/Kg B.W.) orally, while the fourth group (T3) were intubated daily with 40mg/Kg B.W of vitamin E. Fasting blood samples were collected at 0, 21, 42, 63 and 84 days to determine: platelet count, partial thromboplastin (PTT), prothrombin time (PT), serum concentration of total cholesterol TC, and glutathione (GSH). Sections of heart & aorta were also assessed for histopathological changes. The results revealed that administration of 50 ppb CdCl2 in drinking water (T1) for 84 days caused a significant increase ($p<0.05$) in platelet count and serum TC, with a significant decrease($p<0.05$) in PT, PTT and serum concentrations of GSH as compared to control and T2 and T3 groups which showed significant ($p<0.05$) elevation in GSH concentration. Histological sections of heart and aorta of Cd treated (T1) group revealed congestion of blood vessels. Neutrophils and cells vacuolation of cardiac muscle were also seen. Atheromatus lesions characterized by hyperplasia of intima, vacuolation in subintima and proliferation of fibrous connective tissues with the appearance of foamy cells in the subintima layer, were seen in aorta. In conclusion, this study approved the deleterious effect of Cadmium on some aspect of cardiovascular system and the cardioprotective role of vitamin E as antioxidant.

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