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The protective efficiency of vitamin C against arsenic induced biochemical hazards in rats

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Arsenic is one of major pollutants that produce oxidative stress and biochemical alterations in rats. In the present study, ameliorative potential of vitamin C against arsenic toxicity in rats was investigated. Male albino rats were subdivided into 4 groups; the first received physiological saline by vehicle and served as normal controls. The second received 1 mg vitamin C/100 g of body weight free in drinking water. The third received 150 mg sodium metaarsenite/kg diet. The fourth received 150 mg sodium metaarsenite/kg diet and freely supplemented 1 mg vitamin C/100 g of body weight in drinking water. Blood samples were collected after 2, 4, 6 and 8 weeks of treatment. The results indicated that arsenic exposure resulted in significant increase in blood arsenic concentration. It was associated with significant decrease in superoxide dismutase and catalase activities. It enhanced elevation in plasma malondialdehyde concentration. It was associated with significant increase in gamma glutamyltransferase (GGT), aspartate amino-transferase (AST) and alanine amino-transferase (ALT) activities. Plasma total bilirubin, uric acid, creatinine and urea were increased significantly than normal controls especially by 6 and 8 weeks of arsenic toxicity. Plasma triglycerides were increased significantly with arsenic toxicity. However, plasma cholesterol was not affected. Vitamin C supplementation partially improved different measurements under investigation.

Biography

Shalan M G is an Assistant professor at Al-Ghad International Colleges of Health Sciences, KSA, Suez Canal University, Egypt. He holds a doctorate in Physiology (2000). Many scientific American, European, Asian and African journals seek for his efforts in reviewing articles. Many institutions in the world seek for his scientific work. Amelioration of toxicity and radioactivity are the main topics of his research.

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