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Ameliorative effect of ethanolic extract of Annona muricata against sodium arsenite: Induced hepatotoxicty in Wistar rats

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Ingestion of arsenic in drinking water causes cancer in multiple tissues and there is no cure. Cancer has become a great monster to the human race, as it places a significant emotional and economic burden on families and governments all over the world. For the management of arsenicosis, research is directed at chemoprevention using medicinally. In this study, we evaluated the *in-vitro* antioxidant and protection offered by Annona muricata L. (AM) against sodium arsenite-induced hepatotoxicity in rats. Antioxidant and radical scavenging activities of AM were compared to vitamin C and Butylated Hydroxytoluene (BHT). Proximate and phytochemical analyses were also carried out. Hepatoprotective study was investigated with six groups of rats that received distilled water (Control), 5.0 mg/kg bwt (body weight) of $NaAsO_2$, 250 mg/kg bwt AM, 500 mg/kg bwt AM, $NaAsO_2$ plus 250 mg/kg AM, $NaAsO_2$ and 500 mg/kg AM. The $NaAsO_2$ was given once on days 7, 14 and 21, while AM was administered orally daily for 21 days. Serum transaminases and alkaline phosphatase activities were determined and liver histopathology carried out. AM contained 2.00% ash, 1.94% crude fat, 25.65% crude fibre, 2.88% protein and 58.62% carbohydrate. Phytochemical analysis indicated the presence of alkaloids, flavonoids, and cardiac glycosides. The reducing power and metal chelating ability were in the order Vitamin C > BHT > AM, while for DPPH scavenging ability AM > Vitamin C > BHT. The $NaAsO_2$ significantly ($p < 0.05$) increased the liver function enzymes relative to control. However, reduction of the marker enzymes and restoration of the severe vacuolation of hepatocytes in the $NaAsO_2$ group to near normal is being markedly done with the help of AM treatment. Our findings suggest that AM may constitute a remedy against arsenic-induced hepatic injuries.

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