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Effect of grape fruit juice on concor-induced nephrotoxicity and apoptosis in albino rats

A. Elshabka[1], S. Sakr[1]

[1]Faculty of Science, Zoology Department, Shebin Elkom, Egypt

sabsak@yahoo.com

Objective.To evaluate the effect of grapefruit juice on the renal damage induced by the antiarrythmic drug, concor in albino rats. Methods: Animals were divided into 4 groups. The 1st group was considered as control. The 2nd group was given grapefruit juice at a dose level of 27 mL / kg body weight. The 3rd group was orally administered concor (0.09 mg / kg body weight) daily for 5 weeks. Animals were sacrificed after five weeks of treatment. Kidneys were removed and stained with H&E for histological examination. DNA damage was detected by total genomic damage method using gel electrophoresis. Results: Concor treatment caused many renal histopathological alterations. The renal tubules lost their characteristic appearance and their lining epithelial cells were degenerated.

The glomeruli were atrophied and the renal blood vessels were dilated and congested. The intertubular spaces were infiltrated by inflammatory leucocytic cells. Marked elevation in serum creatinine and urea was recorded. Inhibition of spermatogenesis and morphometric changes.

Moreover, the gel electrophoresis method showed that there was an increase in DNA fragmentation (apoptosis). Treating animals with concor and grapefruit juice caused a reduction in the histopathological alterations recorded in the kidney, DNA damage and decrease of serum creatinine and urea. Conclusions: The results of this study indicated that grapefruit juice ameliorates the nephrotoxicity induced by concor in albino rats and this is may be due to the potent antioxidant effects of its components.