

Effect of Methanolic Extract of Punica granatum L. Fruit Rind on Kidney, Liver Marker Enzymes, Electrolytes, and Their Histology in Normal Healthy Rats

Authors : Y. A. Shettima, M. A. Tijjani, S. Modu, F. I. Abdulrahman, B. M. Abubakar

Abstract : The toxicity profile of the methanolic extract of Punica granatum L. fruit rind was studied in normal rats. The rats were administered orally by intubating graded doses of 150, 250, 500 and 750 mg/kg body weight of the extract for 28 days and the effects on biochemical parameters and histology of the liver and kidney were evaluated. There was a significant increase ($P < 0.05$) in the levels of liver enzymes of the rats that received the highest dose of 750 mg/kg body weight. The AST and ALT levels were 41.59 ± 0.18 ALP and 9.25 ± 0.29 IU/L, respectively, while the ALP level was 15.68 ± 10 IU/L. There was a significant difference in the albumin and globulin levels; 3.72 ± 0.05 and 4.05 ± 0.13 g/dl, respectively. Serum urea and creatinine levels remained normal, as well as the electrolyte levels. The increase in sodium concentration observed was not statistically significant ($P \geq 0.05$) when the control group (131.50 ± 3.11) was compared with the experimental groups (132.25 ± 3.86 , 132.75 ± 3.86 , 133.50 ± 3.11 and 134.00 ± 1.83). The increase in potassium concentration was not statistically significant ($P \geq 0.05$) when the control group with a value of 95.50 ± 3.51 mmol/L was compared with the experimental groups 98.00 ± 3.16 , 99.25 ± 2.22 , 99.79 ± 0.36 and 99.99 ± 0.02 mmol/L. The increase observed in bicarbonate concentration was not statistically significant ($P \geq 0.05$) when the control group with a value of 20.75 ± 1.71 mmol/L was compared with the experimental groups 21.68 ± 0.62 , 24.25 ± 2.99 , 24.50 ± 3.42 , 25.50 ± 2.65 mmol/L.

Keywords : punical granatum, methanolic, ALT, AST, electrolytes, histology

Conference Title : ICMPE 2014 : International Conference on Medical and Pharmaceutical Engineering

Conference Location : Zurich, Switzerland

Conference Dates : July 30-31, 2014