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The Hypolipidemic and Anti-Nephrotoxic Potentials of Vernonia calvoana Extract in Acetaminophen-Treated Male Wistar Rats

Authors : Godwin E. Egbung, Item J. Atangwho, Diana O. Odey, Eyong U. Eyong

Abstract : Background of the study: The frequent abuse of acetaminophen by field workers in Calabar metropolis necessitated the present study on the hypolipidemic and anti-nephrotoxic potentials of Vernonia calvoana (VC) extract in acetaminophen (paracetamol) treated male albino Wistar rats Methods:. Thirty-five (35) male albino Wistar rats weighing 100-150 g were divided into five (5) groups of seven rats each. Group 1 served as normal control, group 2 received normal saline after treatment with Acetaminophen (PCM), group 3 was treated with VC extracts (200 mg/kg body weight), group 4 received VC extracts (400 mg/kg body weight) and group 5 was administered 100 mg/kg body weight of Vitamin E. At the end of the 21 days treatment period, the animals were sacrificed using chloroform vapours, and blood was collected via cardiac puncture and used for analyses of haematological as well as biochemical indices. Results: Results indicated significant decreases ($p < 0.001$) in LDL-c, TC and TG levels in groups 3,4 and 5 relative to both the control as well as group 2, the atherogenic index showed a significant decrease at $p < 0.001$) in all treated groups compared with control and PCM- treated group. However, both extracts treated groups and vitamin E treated group showed significant ($p < 0.001$) increase in HDL-c relative to the control and PCM treated group. Serum potassium concentration was significantly ($p < 0.05$ and 0.001) reduced across all the treated groups compared with control and PCM- treated groups. Group 4 showed significant ($p < 0.001$) increase in RBC count, Hb, and PCV compared with PCM- treated group. Conclusions: We therefore conclude that ethanolic leaf extract of VC possesses probable anti-anemic, hypolipidemic potentials, and also ameliorates serum electrolyte imbalance in paracetamol- induced toxicity.

Keywords : acetaminophen, haematological indices, hypolipidemic potentials, serum lipid profile, vernonia calvoana, wistar rats
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