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Hepatoprotective properties of leaf powder of Spondias mombin on cyclophosphamide induced chronic anemia in male albino rats (Rattus norvegicus)

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This study investigated the effect of chronic hyper toxicity of 3 mo Spondias mombin leaf powder supplementation in the management of cyclophosphamide induced anemiain rat. Anemia was induced in rats by administration of cyclophosphamide through oral route with the aid of an intubation tube. Anemia was confirmed in rats with hemoglobin levels of ≤8 g/dL. Fifty anemic albino rats were randomly assigned into five groups of ten rats each (n=10). The first group received distilled water while others were administered daily with 0.5, 1, 1.5 and 2 g/kgBW of Spondias mombin leaf powder for 90 days. The effect of the leaf powder on hematological parameters, IL-6, TNF-α, serum levels of total and direct bilirubin and uric acid were estimated. Hemoglobin and RBCs significantly ($P<0.05$) increased in the group fed 2 g/kgBW. Platelets and erythrocytes sedimentation rate exhibited dose-dependent significant ($P<0.05$) increases. Mean cell volume (MCV) increased but the increases did not differ among the test groups. Mean cell hemoglobin (MCH) and mean cell hemoglobin concentrations (MCHCs) reduced in the group fed 2 g/kgBW. The WBCs and the lymphocytes increased significantly ($P<0.05$). Neutrophils and eosinophil's exhibited significant ($P<0.05$) reductions in the group fed 2 g/kgBW. IL-6 and TNF-α showed dose-dependent significant increase ($P<0.05$). Total and direct bilirubin decreased significantly in groups fed 1.5 and 2 g/kgBW, respectively. Indirect bilirubin increased significantly ($P<0.05$) in groups fed 1.5 and 2 g/kgBW while uric acid decreased moderately. The study revealed that prolonged administration of Spondias mombin leaf powder improved chronic anemic conditions in rat without causing any damage to the liver and kidney.

Biography

Onoja Simon Uwakwe Ph.D is a Senior Lecturer in Home Science, Nutrition & Dietetics. He teaches and researches on varied areas of Foods and Nutrition. He has developed various flour systems for many companies. He has exploited plant food materials to produce multimixes for bakery products with high nutrient density. He has researched on public health/community nutrition. He is also a supervisor of postgraduate studies. He was a Co- Principal Investigator in the Cowpea Research and Supporting Program (CRSP) - a Collaborative Research Program between University of Georgia in the United States and the University of Nigeria, Nsukka, sponsored by IDRC, the Research project earned us an International Award. He has published in both national and international journals.

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