

In vivo anti-hyperlipidemic activity of *Tetracarpidium conophorum* (African walnut) oil**Oriakhi Kelly and Uadia P O**
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Hyperlipidemia, a disorder of lipid metabolism characterized by elevated levels of lipids circulating in the blood, has now become a global concern. It is considered as one of the five leading cause of death in the world. Its prevalence is greatly influenced by adaptation to sedentary lifestyle and an increase in the consumption of a high fat diet. Hyperlipidemia is strongly linked to the development of cardiovascular events and metabolic syndrome diseases. Thus, regulating blood lipids levels is vital in the prevention and treatment of hyperlipidemia and its related diseases. A total of 35 rats were used in this study. The animals were randomly assigned into seven groups (five rats per group). Group I (control group) was fed with normal diet (ND) only, group II, V, VI and VII were fed with high cholesterol diet, which contain 1% cholesterol and 0.5% bile salt for five weeks (37 days) to establish hypercholesterolemia, while groups III and IV were fed with normal diet for five weeks and thereafter administered with 250 and 500 mg/kg body weight of *Tetracarpidium conophorum* oil (TCO) respectively for a period of 20 days. Group II were maintained on hyper cholesterol diet, while Group V and VI was administered 250 and 500 mg/kg body weight of TCO respectively for a period of 20 days, while group VII was given 80 mg/kg body weight of atorvastatin used as a reference drug. After six weeks of feeding with the respective diets, rats were deprived of food overnight. Blood sample was collected and biochemically analyzed for Total Cholesterol (TC), Triglyceride (TG), High Density Lipoprotein Cholesterol (HDL-C) and Low Density Lipoprotein (LDL-C), Malondialdehyde levels (MDA), Aspartate Transaminase (AST), Creatine Kinase (CK) and Lactate dehydrogenase (LDH) activities. The results showed that there was significant increase ($P<0.05$) in TC, LDL-C, CK, LDH and MDA levels with a reduction in HDL-C in rats induced with high cholesterol diet after 37 days when compared to the initial values at day 0. Oral administration of *Tetracarpidium conophorum* oil and atorvastatin drug for a period of 20 days resulted in significant lowering ($P<0.05$) of the levels of TC, LDL-C, CK, LDH and MDA levels with increase in HDL-C in rats induced with high cholesterol diet. However, there were also significant decrease ($P<0.05$) in TC, LDL-C, LDH, CK and MDA levels with increase in HDL-C in rats administered with 250 and 500 mg/kg body weight of *Tetracarpidium conophorum* oil alone for 20 days in rats fed with normal diet when compared to control. There was no statistically significant difference in AST level in both rats fed with normal and hyper cholesterol diets when compared to control throughout the period of the experiment. *Tetracarpidium conophorum* oil could effectively reduce or control the amount of serum cholesterol and LDL-C. It is apparent that the oil could contribute to new formulation with significant hypolipidemic effect and cardioprotective properties.

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