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Effect of *Psidium guineense* Sw. leaf (PGL) extract and coconut cake (CC) extract on serum lipid profiles and serum antioxidant capacity of Wistar rats

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Psidium guineense Sw. leaf (PGL) and coconut cake (CC) are considered as potential sources of natural antioxidants with antioxidant activities comparable to that of many synthetic antioxidants. However, to the best of our knowledge, the antioxidant activities have not been reported in animal models. The effects of orally feeding PGL and CC extracts on serum lipid profiles and antioxidant capacity in Wistar rats were determined in the present study. Seven weeks old male Wistar rats (weight 240-300 g) were randomly assigned into treatment groups (n=7) after being acclimatized to basal diet for a week. Phenolic antioxidants from PGL and CC were extracted into an ethanol:water (70:30) solvent system. The solvent was then removed and residue was dissolved in distilled water. The control group was orally fed with distilled water (1 mL). The second and third groups were orally fed with PGL extract (1 mL) and CC extract (1 mL) at 400 mg/kg of body weight. All groups received a semisynthetic diet recommended by the WHO. Blood was drawn from the tail vein of rats on the day before initiating oral administration of antioxidant extracts and after 30, 90, 120 and 150 days of oral administration of antioxidant extracts. Serum total cholesterol (TC), high density lipoprotein (HDL) cholesterol and triglycerides (TG) were analyzed using G Cell test kit. Low density lipoprotein (LDL) cholesterol was determined using the Friedewald equation. Antioxidant activity of serum was determined by ABTS free radical assay and DPPH radical scavenging assay. Although TC levels decreased in both treatment groups while the HDL levels increased in both treatment groups without any effect in the LDL levels compared to the control group, there were no significant ($p < 0.05$) differences observed in serum TC, HDL and LDL levels among the groups during the study period. Serum TG levels, on the other hand, significantly ($p < 0.05$) decreased compared to the control group after 30 days. Oral administration of antioxidant extracts for a period longer than 90 days caused a significant ($p < 0.05$) improvement of Trolox equivalent antioxidant capacity compared to control group. The effect was more pronounced for PGL than CC extract. Groups fed with antioxidant extracts showed significantly ($p < 0.05$) increased DPPH radical scavenging activities compared to that of the control group as well as their baseline values. PGL and CC extracts exerted beneficial effects on both serum lipid profiles and antioxidant activity in Wistar rats, which may retard the oxidative damage to biomolecules.

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