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Effect of hot water extract of *Tragia involucrata* L. on lipid profile in high fat diet STZ induced diabetic rats and normoglycaemic rats

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Tragia involucrata L. (Family: Euphorbiaceae) commonly known as *Wel kahambiliya* (Sinhala) and Indian stinging nettle (English) is a medicinal herb widely used in Sri Lankan traditional medical system and Ayurveda. The plant shows biological activities such as anti-diabetic, hyperlipidaemic, anti-inflammatory, analgesic, anti-cancer, anti-microbial, diuretic, antioxidant, etc. The present study aims to investigate the effect of the hot water extract of *Tragia involucrata* L. at a dose of 550 mg/kg on lipid profile in high fat diet STZ induced diabetic and normoglycaemic male Wistar rats. Diabetes was induced by providing 60% high fat diet for 21 days, and on the 22nd day freshly prepared Streptozotocin (30 mg/kg) was administered through intra-peritoneal injection. Tail bleeding were performed seven days after injecting streptozotocin to screen the fasting blood glucose levels. Rats with blood glucose levels higher than 150 mg/dL were selected for the experiment. Twenty four adult male Wistar rats were divided randomly into four groups (n=6). Group I (Non diabetic negative control) non-diabetic rats were orally treated with distilled water (1 mL/day), Group II (Diabetic control) diabetic rats were orally treated with distilled water (1 mL/day), Group III (Diabetic reference group) diabetic rats were orally treated with 150 mg/kg Metformin/day, and Group IV (Diabetic test group) diabetic rats were orally treated with the plant extract at a dose of 550 mg/kg/day for 28 days. On the 29th day blood was drawn from overnight fasted animals and blood glucose, concentrations of triglycerides (TG), high density lipoprotein (HDL), low density lipoprotein (LDL), and total cholesterol were measured. Results showed that the plant extract significantly ($P > 0.05$) reduce Triglyceride levels (by 51.4%) and VLDL (very low density lipoprotein) cholesterol levels (by 43.8%) and significantly ($P < 0.05$) increases HDL (high density lipoprotein) cholesterol level (by 34.9%). The plant extract also significantly ($P > 0.05$) reduces blood glucose levels at a dose of 550 mg/kg. In conclusion, the hot water extract of *Tragia involucrata* L. whole plant significantly makes changes in the lipid profile by decreasing VLDL cholesterol and triglycerides, and increasing HDL cholesterol levels in adult male Wistar rats.

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