ABSTRACT

Zingiber officinale commonly known as ginger, has been traditionally used in the treatment of various diseases. Several studies have been reported about the hypoglycaemic properties of ginger in animal models. In the present study, the hypoglycaemic and anti-inflammatory potentials of Malaysian ginger was studied using animal model. Sprague Dawley (SD) rats were divide into six of five groups and allowed to acclimatize for one week. Diabetes mellitus was induced in rats by single intraperitoneal injection of Streptozotocin (STZ) (60 mg/kg body weight). Group 1 was given normal saline and served as a control. Group 2 was fed with food and water and served as the diabetic control. Group 3 was given 200mg/kg aqueous extract of ginger, group 4 with 400mg/kg aqueous extract of ginger and group 5 with 0.5mg/kg glibenclamide (reference drug for hypoglycaemia) respectively. Fasting blood levels of the SD rats were measured on every 7^{th} day for a period of 7 weeks. The STZ-treated rats exhibited hyperglycaemia accompanied with weight loss, indicating diabetic condition. Aqueous extracts of ginger at a dose of 200 and 400 mg/kg, were significantly effective in lowering blood glucose levels ($P < 0.05$). Serum LDL, Triglycerides levels were decreased in diabetic rats treated with aqueous extracts of ginger whereas serum HDL-cholesterol levels statistically increased when compared to the normal control rats ($P<0.05$). Anti-inflammatory studies were done by studying carrageenan induced paw edema in SD rats. Inflammation was induced on the animal by injecting the right hand paw with carrageenan (0.1 ml of 1%). The paw edema in carrageenan induced SD rats was considerably reduced by treating with 400mg/kg aqueous ginger extracts when compared to the untreated SD rats ($P < 0.001$). Diclofenac sodium (150mg/kg) was used as the reference drug. The present study indicates that aqueous extract of *Zingiber officinale* possesses hypoglycaemic and anti-inflammatory properties. The present study also shows that the aqueous extracts of ginger has potential hypocholesterolaemic and hypolipidaemic properties.