ABSTRACT

*Cynodon dactylon* has been mentioned in ayurvedic system of Indian medicine to be of value in the treatment of diabetes mellitus. The purpose of this study is to investigate the possible hypoglycaemic and hepatoprotective effects of aqueous extract of the whole plant of *Cynodon dactylon* on blood glucose, plasma insulin, serum lipid profiles and possible histopathological changes in the pancreatic tissue of streptozotocin induced diabetic rats. Diabetes was induced by streptozotocin (STZ) in rats. One sub-group of rats, received glibenclamide treatment and another received Cynodon extract treatment for 45 days respectively. Blood was analyzed for fasting blood glucose, insulin levels and lipid profiles after treatment. Histopathological sectional studies of the pancreatic islets were done. Treatment of the animals with the aqueous extract from plant at a dose of (500 mg/kg body weight) for 45 days resulted in significant reduction \( (p < 0.001) \) in blood glucose, cholesterol, triglycerides, low-density lipoprotein, and very- low - density lipoprotein in STZ diabetic rats. These biochemical parameters were correlated with the histopathological changes observed in the pancreatic islets of STZ diabetic rats, which structurally proved the effectiveness of the aqueous extract of *C.dactylon* in STZ diabetic rats. The obtained biochemical and histopathological results confirmed the hypoglycemic and antihyperlipidemic effects of aqueous extract of the *C.dactylon* in experimental model of diabetic animals. Cynodon dactylon may be useful as a natural supplementary medicine in the treatment of diabetes and its complications.

Oral administration of aqueous extract of Cynodon dactylon (ACD) to diabetes induced rats at a dose of 500 mg/kg body weight resulted in significant reduction of elevated hepatic transaminase enzyme levels, at different treatment period (0\(^{th}\) day, 21st day, and 45th day) which also showed the structural changes in hepatic architecture of STZ
induced diabetic rats. The ACD treated diabetic rats significantly ($p < 0.001$) recovered from hepatotoxicity, confirmed by analyzing Serum glutamate oxaloacetate transaminase (SGOT), Serum glutamate pyruvate transaminase (SGPT) and Alkaline phosphatase (ALP) levels. Further the histopathology results of ACD treated rats also confirmed the significant recovery from liver damage. Thus the present study confirmed the therapeutic hepatoprotective effect of ACD in diabetic treated rats.