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Tinospora Cordifolia: A potent antioxidant and renoprotective agent in alloxan induced diabetic mice

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Diabetic nephropathy is amongst the most important causes of deaths in type 1 diabetic patients, of whom, 30-40% of patients eventually develop end-stage renal failure. *Tinospora cordifolia* has been extensively used for its various medicinal properties. The effects of methanolic stem extract of this plant on blood glucose concentration, biochemical assay of glutathione and glutathione peroxidase enzymes and histopathology of kidneys of diabetic mice were assessed. Mice were given an intraperitoneal injection of alloxan monohydrate to a dose of 120 mg/kg body weight and divided into four groups with three mice in each group. The first group served as normal control and were given distilled water. The second group was given *Tinospora* stem extract orally to a dose of 300 mg/kg body weight for a period of 28 days. The third group served as diabetic control and fourth group diabetic mice received stem extract orally to a dose of 300 mg/kg body weight daily for 28 days. Fasting blood sugar levels were determined after regular intervals and prior to dissection. A significant decrease in blood glucose levels with value 114.00±8.71 mg/dl in extract administered groups was observed as compared to diabetic mice with value 183.00±6.24 during the period of experiment up to 28 days stage. The histopathological studies of kidneys of diabetic mice revealed degeneration of renal architecture, but with restoration after treatment with administration of *Tinospora* extract was observed. Extract-treated diabetic mice showed elevations in glutathione and GPx activity up to 27.16% and 35.25% respectively as compared to allocated mice. Lipid peroxidation levels in *Tinospora* extract treated diabetic mice were also low as compared to allocated ones.

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