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CHAPTER 4

PROTECTIVE ROLE OF *CURCUMA LONGA* EXTRACT SUPPLEMENTATION IN STZ INDUCED DIABETIC RATS

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ABSTRACT:

Diabetes mellitus is a chronic metabolic disorder that prevents the body to utilize glucose completely or partially. It is characterized by raised glucose concentration in the blood and alterations in carbohydrate, protein and fat metabolism. *Curcuma longa* has several biological properties, including antidiabetic and antioxidant activity. The present study was designed to investigate the antidiabetic effect of *Curcuma longa* extract against streptozotocin (STZ) induced perturbations in blood glucose, body weights and hematological alterations in albino rats. Adult male albino Wister rats, weighing 180 ± 20 g was made diabetic by injecting STZ (40mg/kg body weight) intraperitoneally. Diabetic rats were supplemented with ethanolic extract of *Curcuma longa* rhizomes (250 mg/kg body weight) for a period of three weeks. After this period, rats were decapitated and blood was collected from control and experimental rats. Blood glucose levels, WBC, RBC, serum total proteins, albumin, globulin, creatinine, urea and cholesterol were significantly elevated in diabetic rats with decreased hemoglobin and body weight levels when compared with control. The above mentioned parameters were significantly restored to near normal by oral administration of *Curcuma longa extract* once daily for three weeks as compared to untreated rats. The results obtained indicated that *Curcuma longa extract* to be beneficial in preventing diabetes induced alterations in blood glucose, body weights and hematology in rats.

KEYWORDS: Diabetes; Streptozotocin; *Curcuma longa*; Blood glucose; Body weight; hematology; Rats.