ANTIOXIDANT, ANTIDIABETIC AND LIPID LOWERING EFFECTS OF CINNAMON AND VITAMIN C IN HYPERGLYCEMIC RABBITS

ABSTRACT

The study was done to evaluate the antioxidant effects of cinnamon and vitamin C in controlling hyperglycemia and their effect on lipid profile in male rabbits in comparison with the effects of insulin therapy and control animals. Twenty four diabetic rabbits by the injection of alloxan 100 mg/kg body weight in the marginal vein of the ear. These diabetic rabbits were divided randomly into 4 groups Number of animals in each group = 6: Group 1: Was given 2 I.U/ animal of insulin subcutaneously daily. Group 2: Was given ground cinnamon orally 300 mg/kg body weight dissolved in 5 ml normal saline daily. Group 3: Was given vitamin C orally 200 mg/kg body weight dissolved in 5 ml normal saline daily. Group 4: Received orally 5 ml normal saline (0.9% Nacl) daily and considered as control group. All animal groups were treated for five weeks. Blood samples were taken from these groups weekly for biochemical analysis to estimate: Blood glucose, Lipid profile (include total cholesterol (TC), triglyglyceride (TG), high density lipoprotein (HDL), low density lipoprotein (LDL) and very low density lipoprotein(VLDL) and serum malondialdehyde (MDA). The results showed high glucose and lipid concentration associated with an increased oxidant stress alloxan induces on diabetic animals. The

statistically analysis showed that a cinnamon and vitamin C significant ($P< 0.05$) reduction in glucose and lipid profile (TC, TG, HDL, LDL and VLDL) in concordance with a significant elevation in HDL ($P<0.05$). The level of MDA was also significantly reduced ($P<0.05$) in all period comparison with period before treated with vit. C and Cinnamon extract. It may conclude that, cinnamon and vitamin C have antioxidant activities to cause an important role in reduction of blood glucose level and lipid profile in hyperglycemic animals.