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Influential effects of Momordica charantia fruit extract on glibenclamide against alloxan- induced diabetic mice

NEHA SHARMA
Department of SCHOOL OF LIFE SCIENCES, DEVI AHILYA UNIVERSITY INDORE, India

Objectives: The aim of the present study was to find out the influence of ethanolic extract of Momordica charantia (MC) fruit extract on antidiabetic effects of glibenclamide (GLB) alone and in combination on alloxan-induced diabetes mellitus

Methods: GLB (500 µg/kg body weight), MC (150 mg/kg body weight) and their combination were evaluated against alloxan (150 mg/kg) induced-diabetic mice by estimating fasting serum glucose level, insulin, triglyceride, total cholesterol, high density lipoprotein cholesterol. Kidney samples were collected and other parameters like lipid peroxidation, lipid hydroperoxide, advanced oxidation protein products, superoxide dismutase, catalase, reduced glutathione and glutathione peroxidase levels were estimated. Kidney histology was also carried out to examine the effect of drugs at tissue level. MC extract, GLB and their combination reversed the changes induced by alloxan.

Results: There was a noticeable decrease in relevant peroxidative parameters and an increase in antioxidative parameters after administration of MC extract and glibenclamide alone. However, combination therapy of both the drugs produces more beneficial effects in all the parameters as compared to their individual treatments.

Conclusions: These observations were supported by histological results which suggest a synergism between the MC fruit extract and glibenclamide; a potential therapy that can be evolved as an alternative strategy in diabetes treatment.