EFFECT OF MOMORDICA CHARANTIA (KARAWILA) ON STREPTOZOTOCIN-INDUCED DIABETES

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The oral hypoglycaemic activity of the fruit juice of Momordica charantia on non-insulin dependent diabetics and on normal healthy laboratory animals have been previously reported. In-vitro experiments have further shown that M.charantia stimulates insulin secretion from the β cells of the pancreas.

The present study was undertaken to further investigate the possible mechanism of oral hypoglycaemic activity of fruit juice of M.charantia. Streptozotocin which induces diabetes in laboratory animals by specific destruction of the β cells was used as the diabetogenic agent.

Streptozotocin (50mg/kg/body wt.) induced diabetic male Sprague-Dawley rats (200±25 body wt.) were divided at random into two groups(n=20) was treated with the fruit juice of M.charantia (1ml/100g body wt.) daily for 30 days and body weights were recorded. The control diabetic group (n=18) received an equivalent amount of distilled water under identical conditions.

At the end of the experimental period oral glucose tolerance test was performed on two occasions after an over-night fast in order to assess the cumulative and acute effects of M.charantia on streptozotocin induced diabetes. Glycosylated hemoglobin concentrations were also measured in both groups at the end of the experimental period.

M.charantia did not exert significant acute or cumulative effects on the ability to tolerate an external glucose load in streptozotocin induced diabetic rats. Glycosylated hemoglobin concentrations were significantly higher in both groups than in normal non-diabetic rats but were not significantly different between treated and control diabetic groups. In view of specific destruction of β cells by streptozotocin, present data may suggest that M.charantia requires the presence of viable β cells to exert it's oral hypoglycaemic activity.