EFFECT OF MEMORDICA CHARANTIA ON GLUCOSE HOMEOSTASIS IN EXPERIMENTAL DIABETES OF GRADED SEVERITY

S Jeevathayaparan*, Eric H Karunanayake*,
Kamini H Tennekoon**, K S A Jayasinghe***
Dept. of *Biochemistry, **Physiology, ***Medicine
Faculty of Medicine, University of Colombo

Effect of fruit juice of Memordica charantia on streptozotocin induced diabetes of graded severity was studied in order to further understand its mode of oral hypoglycaemic activity.

Streptozotocin was administered intravenously in graded doses (10 mg, 20 mg 30 mg and 50 mg/Kg body wt.) to male Sprague-Dawley rats (200±25 g; n=20 in each group) and the development of diabetes was confirmed as previously described 1. following random division of each diabetic group into treatment (n=10) and control (n=10) groups, fruit juice of M. charantia and distilled water were administered orally (1ml/100g body wt./day) for 30 days to the treatment and control groups respectively. \acute and cumulative effects of M. charantia were investigated by performing oral glucose tolerance tests 30 min after the first dose and 24 hours after the last dose of M. charantia/distilled water. Glycosylated haemoglobin concentrations were also measured in all the groups at the end of the experimental period.

Fruit juice M.charantia exerted significant ($P<0.05$-0.01) acute and cumulative oral hypoglycaemic activity and significantly (p,0.001) reduced glycosylated haemoglobin concentrations only when diabetes were induced with 10 mg and 20 mg of streptozotocin. These results further support the hypothesis that viable beta cells are necessary for fruit juice of M.charantia to exert its oral hypoglycaemic activity.

References: 1. Karunanayake, E.H., Jeevathayaparan, S., Mahindaratne, M.P.D., Tennekoon, K.H., (1988) Effect of Momordica charantia (karawila) on streptozotocin induced diabetes. 44th Annual Session of the SLAAS.