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Effect of ingestion of *Scoparia dulcis* leafy porridge on type 2 diabetics: A preliminary study

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Controlling hyperglycaemia by ingestion of herbal extracts is a remedy followed by many Sri Lankans. Porridge made by incorporating herbal leaf extracts (*Kola kenda*) is such a common dietary remedy among diabetics. When porridge made with *Scoparia dulcis*was given to streptozotocin induced diabetic Wistar rats for 3 months, reductions in weight-loss, HbA1c, fasting blood glucose (FBG) and a significantly lower mortality rate was observed. The present study was carried out to estimate the hypoglycaemic and hypolipidaemic effects of this porridge on type 2 diabetic patients. Porridge was prepared and packed (40 g) according to a procedure followed by commercial scale production. In the porridge, fresh leaves: rice: scraped coconut ratio was 15 g : 25 g : 10 g similar to the porridge used for the animal study. Ethical approval was obtained from the Ethics Review committee of Faculty of Medical Sciences, University of Sri Jayewardenepura. The study was a randomized controlled study. Diabetic patients (n = 32) on medication with FBG between 126 - 300 mg/dl and without severe diabetic complications were selected and their FBG, HbA1c and lipid profile were determined at the onset of the study. Patients were divided in to two groups (16 patients / group). The test group was advised to consume three porridge packets per week for breakfast for three months and the control group was advised to consume their normal meals. FBG, lipid profile and HbA1c levels were estimated at the end of each month by enzymatic kit methods. In the test group the mean FBG levels were 171, 147, 149, 159 mg/dl while in the control group FBG levels were 161, 157, 177, 167 mg/dl at the beginning and at 1, 2 and 3 months respectively. The FBG reduction percentage in the test group was 7% which is significant ($p < 0.05$) compared to the control group which had a FBG increment of 4% during the 3 months. A significant reduction ($p < 0.05$) of HbA1c in the test group from 8.0% to 6.4% from 0 - 3 months was observed. However, the control group also indicated an insignificant ($p > 0.05$) reduction from 7.8% - 7.0% during this period. From 0 - 3 months, no significant differences were observed in total cholesterol (control 213 – 233 mg/dl, test 222 – 226 mg/dl), LDL-C (control 139 – 152 mg/dl, test 157 – 161 mg/dl), HDL-C (control 44 – 43 mg/dl, test 38 – 38 mg/dl) and triglyceride (control 148 – 195 mg/dl, test 134 – 135 mg/dl) between test and control groups. The present study reveals that consumption of *S. dulcis* porridge helps control the FBG and decreases HbA1c in diabetic patients even with the dose used. No significant increment in lipid parameters was observed. This also highlighted the negligible effect of coconut in porridge on serum lipids with the dose given. Therefore, the porridge made with *S. dulcis* leaves can be recommended as a breakfast meal for diabetic patients.

Keywords: *Scoparia dulcis*, leafy porridge, type 2 diabetes, HbA1c, fasting blood glucose, cholesterol

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