EFFECT OF SELECTED HERBAL BEVERAGES ON POST-PRANDIAL BLOOD GLUCOSE LEVELS IN HUMAN

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The use of herbal beverages which control post-prandial hyperglycemia helps to reduce complications associated with diabetes mellitus. This study aimed to analyse the effects of four selected herbal beverages; *Coccinia grandis* (*Kovakka*) (KT), *Murraya koenigii* (*Karapincha*/ *Curry Leaves*) (CT), *Scoparia dulcis* (*Walkoththamalli*) (WT) and *Hemidesmus indicus* (*Iramusu*) (IT) on post-prandial blood glucose (PPBG) levels in humans. The leaves were dried at 50°C for 24 h and packed in sachets with 2 g of leaf powder. Beverage was prepared by dipping a sachet in 200 mL of water at 100°C for 3 min. Sensory evaluations were conducted for all beverages (n=33; untrained volunteers). The effect of each beverage on PPBG after a standard meal (SM) (872.6 kcal) was tested using 15 (age 20-30 years) healthy volunteers. Each volunteer was provided with four treatments (SM+KT, SM+CT, SM+WT, SM+IT), control (SM+hot water), and standard (SM+green tea (GT)) on six separate days. On each day, fasting blood glucose level was estimated. Capillary blood glucose concentrations were analysed at 30, 60, 90, and 120 min using the glucose oxidase method. A graph was plotted, blood glucose vs time and the incremental area under the curve (IAUC) was calculated. The presence of any significant difference in PPBG with the beverages was analysed using paired t-test at 95% confidence interval. The sensory evaluation confirmed that overall acceptance among beverages was significantly higher ($p<0.05$) in WT, followed by CT, IT and KT, respectively. Compared to the control, a significant reduction in PPBG and IAUC was detected for KT, WT, and GT. Neither KT, nor WT showed a significant difference with GT. Compared to the control, KT and WT showed a peak reduction in PPBG of 2% and 18%, respectively, at 30 min, while GT showed the highest peak reduction in PPBG of 35% at 60 min. Beverages prepared with WT and KT can be used to control PPBG and results are comparable to GT.

Keywords: *Coccinia grandis*, *Hemidesmus indicus*, *Murraya koenigii*, Post-prandial blood glucose, *Scoparia dulcis*