

## Lowering dietary glycaemic index through nutrition education among Malaysian women with a history of gestational diabetes mellitus

### Abstract

**Introduction:** Gestational diabetes mellitus (GDM) increases risks for type 2 diabetes and cardiovascular diseases. Low glycaemic index (GI) diets improve cardio-metabolic outcomes in insulin-resistant individuals. We examined the feasibility of lowering GI through GI-based-education among Asian post-GDM women. **Methods:** A 3-month investigation was carried out on 60 Malaysian women with a mean age of  $31.0 \pm 4.5$  years and a history of GDM. Subjects were randomised into two groups: LGIE and CHDR. The CHDR group received conventional healthy dietary recommendations only. The LGIE group received GI based-education in addition to conventional healthy dietary recommendations. At baseline and after 3-months, dietary intake of energy and macronutrient intakes including GI diet and glycaemic load was assessed using 3-day food records. Diabetes-Diet and GI-concept scores and physical activity levels were assessed using a questionnaire. Adherence to dietary instructions was measured at the end of 3 months. **Results:** At the end of 3 months, the LGIE group had significant reductions in energy intake ( $241.7 \pm 522.4$ Kcal,  $P=0.037$ ,  $ES=0.463$ ), total carbohydrate ( $48.7 \pm 83.5$ g,  $P=0.010$ ,  $ES=0.583$ ), GI ( $3.9 \pm 7.1$ ,  $P=0.017$ ,  $ES=0.549$ ) and GL ( $39.0 \pm 55.3$ ,  $P=0.003$ ,  $ES=0.705$ ) and significant increases in protein ( $3.7 \pm 5.4$ g,  $P=0.003$ ,  $ES=0.685$ ) and diet fibre ( $4.6 \pm 7.3$ g,  $P=0.06$ ). The CHDR group had a significant reduction in fat only ( $5.7 \pm 9.4$ g,  $P=0.006$ ,  $ES=0.606$ ). There was a 30% increase in GI-concept scores in the LGIE group ( $p < 0.001$ ). Changes in GI-concept scores correlated significantly to the reduction in dietary GI ( $r = -0.642$ ,  $P=0.045$ ). Dietary adherence was comparable in both groups. **Conclusion:** GI-education improves GI-concept knowledge and helps lower dietary glycaemic index among women with a history of GDM.

**Keyword:** Diet; Gestational diabetes mellitus; Glycaemic index; Glycaemic load; Prevention; Type 2 diabetes