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±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±522.4Kcal, P=0.037, ES=0.463), total carbohydrate (48.7±83.5g, P=0.010, ES=0.583), GI (3.9±7.1, P=0.017, ES=0.549) and GL (39.0±55.3, P=0.003, ES=0.705) and significant increases in protein (3.7±5.4g, 0.003, ES=0.685) and diet fibre (4.6±7.3g, P=0.06). The CHDR group had a significant reduction in fat only (5.7±9.4g, 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