

Effectiveness of system-based intervention in reducing incidence of type 2 diabetes and to improve the postnatal metabolic profiles in women with gestational diabetes mellitus: a randomized controlled study

ABSTRACT

Aim: The objective of this study was to determine the effectiveness of system-based intervention in reducing the incidence of diabetes and to improve the postnatal metabolic profiles among women with gestational diabetes mellitus (GDM). **Materials and methods:** For women in the intervention arm (n = 130), they received one session of individualized health education at 36 gestational weeks, a booklet of diabetes prevention, five-session of postpartum booster educational program which were conducted including 1 session of dietary and exercise counseling by dietician and physiotherapist at 6 weeks postpartum. For women in the control group (n = 168), standard treatment whereby they had received group therapy on diet and physical activity modification by dietician and staff nurses during the antenatal period. **Results:** There were no significant differences in baseline characteristics between groups for most of the variables examined except for educational level which the control group had a higher education than the intervention group. The women assigned to system-based intervention have a significant difference to GDM women who were assigned to the control group for LDL and HDL but not in anthropometric measurements, blood pressure, glucose index, total cholesterol, and triglyceride. In addition, it was found that the incidence of Type 2 diabetes mellitus (T2DM) 2 years after delivery was 20% in the intervention arm compared to 17% in the control arm. **Conclusion:** The system-based intervention was not statistically superior to the control intervention as there is no difference in terms of incidence of T2DM between the intervention and control group. We, therefore, suggested that more intensive interventions are needed to prevent GDM from developing into T2DM.

Keyword: Gestational diabetes mellitus; Clinical trial; Antenatal intervention; Postpartum intervention; Prevention of diabetes mellitus