

Higher animal protein intake during the second trimester of pregnancy is associated with risk of GDM

ABSTRACT

Background and Aims: This study aimed to examine the associations between the total protein intake as well as types and sources of proteins with the gestational diabetes mellitus (GDM) risk. **Method and Results:** This was a prospective cohort study of the pregnant women in Malaysia. In this study, the total, animal, and plant protein intakes were assessed using a semi-quantitative food frequency questionnaire. Of the 452 women, 48 (10.62%) were diagnosed with GDM. From pre-pregnancy to second trimester, most of the women had 10–20% of energy intake from protein (88.9–90.3%) and $\geq 75\%$ of recommended protein intake (74.6–86.5%). The women in the highest tertile (T3) of total animal protein intake [adjusted odds ratio (AOR) = 2.76, 95% CI = 1.27–6.04] and red meat protein (AOR = 2.69, 95% CI = 1.27–5.70), specifically in the second trimester, had significantly higher GDM risk compared with the women in the middle tertile of intake (T2). Interestingly, the women in the T3 of egg protein in the second trimester were significantly at lower GDM risk (AOR = 0.43, 95% CI = 0.18–0.91) compared with those in T2. **Conclusion:** The highest tertile of animal protein (≥ 42.15 g/day) intake, particularly red meat protein in the second trimester was positively associated with the GDM risk, whereas the highest tertile of egg protein was inversely associated with the GDM risk. Protein intake before or during early pregnancy was not associated with the GDM risk. These findings underscore the importance of sources and types of protein intake, particularly after the first trimester of pregnancy, in relation to GDM risk.

Keyword: Egg protein; Animal protein; Red meat protein; Gestational diabetes (GDM); Before pregnancy; During pregnancy