

Independent and combined effects of age, body mass index and gestational weight gain on the risk of gestational diabetes mellitus

ABSTRACT

This study aimed to identify the independent and combined effects of age, BMI at first prenatal visit and GWG on the risk of GDM. A retrospective cohort study of 1,951 pregnant women in Seremban district, Negeri Sembilan, Malaysia. GDM was defined as fasting plasma glucose (FPG) ≥ 5.6 mmol/l and/or 2-hour postprandial plasma glucose (2hPPG) ≥ 7.8 mmol/l. A higher percentage of women with GDM had 2 risk factors (29.0%) or >2 risk factors (8.6%) compared to non-GDM women (2 risk factors: 25.5%; >2 risk factors: 5.0%). In general, women with ≥ 2 risk factors were respectively 1.36-2.06 times more likely to have GDM compared to those without risk factors. Older maternal age and being overweight/obese were significantly associated with risk of GDM. Overweight/obese women with age ≥ 35 years had 2.45 times higher risk of GDM and having excessive GWG at second trimester further increased the risk of GDM. Age and BMI are independent risk factors for GDM but not GWG in the first and second trimester. The findings emphasize the need to focus on a healthy BMI before pregnancy and optimal GWG during pregnancy to improve pregnancy outcomes.