

The Incidence and Risk Factors of New-onset Type 2 Diabetes Mellitus After Gestational Diabetes

Yamanouchi L; Lee B; Smith A; Basu A Department of Diabetes, Endocrinology and Lipid Metabolism, City Hospital, Birmingham, United Kingdom, B18 7QH;

The University of Birmingham, Edgbaston, Birmingham, United Kingdom, B15 2TT.

Objective: To investigate the incidence and risk factors of Type 2 diabetes after gestational diabetes mellitus (GDM).

Design and methods: 416 women with GDM delivered between 01/01/2004-31/12/2007. GDM was diagnosed on the basis of a 75 g oral glucose tolerance test between 24-34 weeks' gestation. The diagnosis of diabetes after delivery was based on three successive HbA1c values in the diabetic range (>48mmol/L). The follow-up period was 10 years after the last patient's delivery date. Kaplan-Meier estimates for different ethnic groups and BMI category were compared using the log-rank test.

Results: 33.2% of mothers developed diabetes over the follow-up period. The overall incidence was 16.9 (95%CI 14.02-20.34) per 100 person-years. There were no significant differences in the time taken to develop T2DM among the three ethnic groups ($p=0.31$). Using a Cox P-H model, hazard ratios for the development of diabetes were 1.0, 1.29 and 0.47 for Asian, Afro-Caribbean and Caucasian women respectively after correcting for maternal age and BMI; these difference were not statistically significant. Women with BMI >35kg/m² were almost three times as likely to develop diabetes compared to women with BMI <24.9 kg/m² (hazard ratio: 2.92), which was statistically significant ($p=0.004$).

Conclusions: Maternal ethnicity and maternal age did not to have an effect on development of diabetes; women with high BMI were at a greater risk. However, the development of diabetes in a third of the cohort implies that preventative measures should be put in place for such high-risk communities.