

Gestational diabetes mellitus across the lifespan: Pregnancy and beyond

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Abstract

Background: Gestational diabetes mellitus (GDM) imposes immediate perinatal and long-term metabolic consequences, but evidence spanning its continuum in Bangladesh is limited.

Objectives: To determine the national burden of GDM and examine its adverse perinatal and long-term maternal consequences.

Methods: We report findings from three complementary Bangladeshi studies: a nationwide cross-sectional survey of 1,194 pregnant women from eight divisions in 2025, screened using a standardized 75-g oral glucose tolerance test; a prospective cohort of 325 women with GDM or normal glucose tolerance followed until delivery at Bangladesh Medical University during 2022–2025; and a retrospective cohort of 256 women with previous GDM or normal glucose tolerance assessed for incident type 2 diabetes mellitus (T2DM). Multivariable logistic and Cox regression and Kaplan–Meier analysis were used.

Results: National GDM prevalence was 18.0%, with marked geographic variation but no significant urban–rural gradient. Maternal age and pre-pregnancy body mass index independently predicted GDM. Compared with normal glucose tolerance, GDM was associated with higher frequencies of macrosomia (13.0% versus 1.4%), neonatal hypoglycemia (9.0% versus 0.7%), jaundice (24.2% versus 11.6%), and fetal distress (14.0% versus 5.4%). Adjusted odds ratios were 10.28 for macrosomia, 9.83 for neonatal hypoglycemia, and 2.94 for jaundice. During long-term follow-up, T2DM developed in 48.8% of women with previous GDM versus 11.5% with previous normal glucose tolerance. GDM conferred a 4.56-fold adjusted hazard of T2DM and shorter mean diabetes-free survival (8.90 versus 12.78 years). Insulin therapy during pregnancy predicted progression among women with GDM (adjusted hazard ratio 3.81).

Conclusions: GDM affects nearly one in five pregnancies in Bangladesh and carries substantial neonatal and long-term maternal risks. Universal antenatal screening, optimal pregnancy management, and structured lifelong diabetes surveillance are warranted. [*J Assoc Clin Endocrinol Diabetol Bangladesh, 2026;5(Suppl 1): S18*]

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