

GESTATIONAL DIABETES AND ADVERSE NEONATAL OUTCOMES: EVIDENCE FROM A PROSPECTIVE COHORT STUDY

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Background: Gestational diabetes mellitus (GDM) is a major contributor to adverse perinatal outcomes, yet evidence from South Asian populations using contemporary diagnostic criteria remains limited. This study evaluated maternal and neonatal outcomes among women with GDM compared with those with normal glucose tolerance (NGT) in a tertiary care setting in Bangladesh. **Methods:** A prospective cohort study was conducted among pregnant women attending the antenatal clinic of Bangladesh Medical University between May 2022 and January 2025. GDM was diagnosed using the International Association of Diabetes and Pregnancy Study Groups criteria. Women with singleton pregnancies were followed until delivery. Maternal and neonatal outcomes were assessed, and multivariable logistic regression was performed to evaluate the independent association between GDM and neonatal outcomes. **Results:** Among 325 participants, women with GDM (n = 178) were older and had higher body mass index, a greater family history of diabetes, and previous GDM than women with NGT (p < 0.01). Neonates born to mothers with GDM had higher rates of macrosomia (13.0% vs. 1.4%; p < 0.001), jaundice (24.2% vs. 11.6%; p = 0.004), fetal distress (14.0% vs. 5.4%; p = 0.011), and hypoglycemia (9.0% vs. 0.7%; p < 0.001). In multivariable logistic regression, GDM remained independently associated with macrosomia (aOR 10.28, 95% CI 2.21–47.75), neonatal hypoglycemia (aOR 9.83, 95% CI 1.23–78.21) and neonatal jaundice (aOR 2.94, 95% CI 1.31–6.61). **Conclusion:** GDM was independently associated with adverse perinatal outcomes. These findings highlight the importance of early detection and management of GDM to reduce preventable neonatal complications.

Keywords: GDM, macrosomia, neonatal hypoglycemia, perinatal outcome, Perinatal outcomes, Neonatal complications

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