

Epidemiology, maternal and perinatal complications of early-onset gestational diabetes mellitus

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Objective

Objective: To determine the prevalence and compare the pregnancy outcomes between women with gestational diabetes mellitus (GDM) diagnosed early- and late-onset in pregnancy.

Methods

A retrospective cohort study was conducted at Khon Kaen University's Srinagarind Hospital, a tertiary care facility in northeast Thailand. The pregnant women diagnosed with gestational diabetes mellitus (GDM) according to National Diabetes Data Group criteria from January 1, 2015, to December 31, 2019, were identified and their medical records were reviewed. Various characteristics were examined to compare maternal complications and perinatal outcomes between the groups.

Results

There were 11,167 deliveries during the study period, out of which 977 GDM pregnant women were identified (87.5 per 1,000 deliveries). Three hundred and fifty-five women (31.8 per 1,000 deliveries) were diagnosed with early-onset GDM and six hundred and twenty-two (55.67 per 1,000 deliveries) had late-onset GDM. The rate of preterm birth and preeclampsia were significantly higher in the early-onset group than in the late-onset group (40.8% versus 29.1%, $p < 0.001$; 9.3% versus 2.3%, $p < 0.001$, respectively). There was no significant difference between the groups in chorioamnionitis, shoulder dystocia, severe birth canal injury, and postpartum haemorrhage. In-vitro fertilization, family history of diabetes in first-degree relatives and underlying medical conditions were significant risk factors for early-onset GDM. Perinatal complications were significantly higher in the early-onset group than in the late-onset group (low birth weight = 25.4% versus 10%, $p, 0.001$; birth asphyxia = 3.1% versus 5.2%, $p=0.001$; neonatal intensive care unit admission = 9.7% versus 3.7%, $p, 0.001$; neonatal resuscitation = 16.3% versus 6.9%, $p, 0.001$ and stillbirths = 1.8% versus 0.3%, $p, 0.001$, respectively).

Conclusion

The prevalence of early-onset GDM was 31.8 per 1,000 deliveries. Maternal and perinatal complications were significantly higher than late-onset gestational diabetes mellitus. Keywords: Gestational diabetes mellitus, GDM, maternal and perinatal complications, early-onset GDM.