

Editorial

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Gestational Diabetes: A Temporary Diagnosis with Lasting Consequences

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Gestational diabetes mellitus (GDM) is a condition that affects millions of pregnant women worldwide, posing significant health risks to both mother and child. The prevalence of GDM varies across territories and populations. The global prevalence of GDM is estimated to range from 7.1 % to 27.6 %, with a pooled global standardized prevalence of 14.0% (1). While pre-GDM (type 1 or 2 diabetes mellitus) affects approximately another 1-2 % of pregnancies (2). The prevalence of GDM is estimated to be around 5.5 - 8.4% in Sri Lanka (3,4).

GDM is characterized by glucose intolerance that begins or is first recognized during pregnancy (5). The majority of pregnant mothers with GDM are asymptomatic initially, and the condition is typically identified through routine antenatal screening.

Women with diabetes in pregnancy are at higher risk of developing hypertensive disorders (including preeclampsia and eclampsia), polyhydramnios, having a caesarean delivery and other perinatal complications. In pre-GDM, poor glycemic control is linked to congenital anomalies, miscarriages, and stillbirths. Foetal macrosomia, a hallmark of uncontrolled maternal hyperglycaemia, leads to a multitude of neonatal complications as well as an increased lifetime risk of obesity and type 2 diabetes (1,5).

Advanced maternal age, positive family history, polycystic ovary syndrome (PCOS), and certain ethnic backgrounds (e.g., South Asian, Hispanic, and Indigenous populations) are significant risk

factors to develop GDM. Further, rising obesity rates and sedentary and high-stress lifestyles have contributed to the escalating prevalence of GDM (1,5,6).

The secretion of human placental lactogen, progesterone, cortisol, prolactin and growth hormone into the foetomaternal system promotes foetal growth (6). As the pregnancy progresses, insulin resistance increases to a peak in the third trimester. In a normal pregnancy, the pancreas compensates by increasing insulin secretion in response to the hyperglycaemia. However, in women with GDM, this compensatory mechanism is inadequate due to prevailing beta-cell dysfunction. As a result, blood glucose levels rise, leading to sustained hyperglycemia (6). Unopposed maternal hyperglycemia leads to foetal hyperglycaemia due to glucose crossing the placental barrier. This leads to stimulation of the foetal pancreas, causing excess insulin production and resulting in foetal hyperinsulinaemia and excessive foetal growth (6).

Normally, after delivery, as placental and maternal hormone levels normalize, the insulin resistance typically resolves. Thus, GDM is often considered a temporary complication related to pregnancy. However, its consequences extend far beyond childbirth, influencing long-term intergenerational health outcomes (5).

GDM serves as a warning sign for future metabolic disorders among women. Studies indicate that nearly 40% -70% of women with GDM will go on to



develop type 2 diabetes within 10 years of delivery, most likely due to persistent and progressive beta-cell dysfunction (5,7). GDM also serves as an independent risk factor for future cardiovascular disorders (CVD). Recognizing these acute and long-term effects of GDM are critical for improving public health and reducing the burden of diabetes, CVD and their complications.

From a physician's point of view, the management of diabetes should not end at the delivery. Instead, it should encompass patient education, postpartum follow-up, and integration into preventive care models aimed at reducing cardiometabolic risk. The early postpartum period presents a crucial window for early intervention and targeted lifestyle modifications. The current clinical guidelines recommend screening of mothers with GDM with a 75-g oral glucose tolerance test (OGTT) at 6–12 weeks postpartum, followed by ongoing surveillance every 1–3 years. However, adherence to postpartum screening remains suboptimal (7).

Holistic interventions focusing on health education, appropriate nutrition, moderate-intensity physical activity, and weight management have demonstrated efficacy in delaying or preventing type 2 diabetes in women with prior GDM. Multidisciplinary management involving obstetricians, endocrinologists, physicians, public health staff and diabetes nurse educators are essential to bridge the gap between perinatal care and long-term chronic disease prevention.

In sum, the diagnosis of GDM heralds the possibility of a range of maternal and perinatal complications. Despite advancements in screening, diagnosis, and management, maternal diabetes continues to pose substantial risks to both mothers and infants. It also serves as an indicator of future cardiometabolic disorders in both the mother and the child (1). Therefore, proactive metabolic surveillance and intervention is needed, which

extends beyond pregnancy and the immediate postpartum period.

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