

Gestational Diabetes Mellitus

Ritu¹, S.P. Subashini², Sanathoi Chanu³, Simrat Kaur⁴

How to cite this article:

Ritu, S.P. Subashini, Sanathoi Chanu, *et.al.* / Gestational Diabetes Mellitus / J Nurse Midwifery Matern Health. 2023;9(1):27–29.

ABSTRACT

Gestational diabetes mellitus (GDM) is increasing in prevalence in tandem with the dramatic increase in the prevalence of overweight and obesity in women of childbearing age. Much controversy surrounds the diagnosis and management of gestational diabetes, emphasizing the importance and relevance of clarity and consensus. If newly proposed criteria are adopted universally a significantly growing number of women will be diagnosed as having GDM, implying new therapeutic challenges to avoid foetal and maternal complications related to the hyperglycemia of gestational diabetes. This review provides an overview of clinical issues related to GDM, including the challenges of screening and diagnosis, the pathophysiology behind GDM, the treatment and prevention of GDM and the long and short term consequences of gestational diabetes for both mother and offspring.

Keywords: Gestational diabetes, Diagnostic criteria, Treatment, Complications

INTRODUCTION

Gestational diabetes mellitus (GDM) is a condition in which a hormone made by the placenta prevents the body from using insulin effectively. Glucose builds up in the blood instead of being absorbed by the cells.

Unlike type 1 diabetes, gestational diabetes is not caused by a lack of insulin, but by other hormones produced during pregnancy that can make insulin less effective, a condition referred to as insulin resistance. Gestational diabetic symptoms

disappear following delivery.

Approximately 3 to 8 percent of all pregnant women in the United States are diagnosed with gestational diabetes.

Causes

1. Unknown
2. The placenta supplies a growing fetus with nutrients and water, and also produces a variety of hormones to maintain the pregnancy. Some of these hormones (estrogen, cortisol, and human placental lactogen) can have a blocking effect on insulin. This is called contra-insulin effect, which usually begins about 20 to 24 weeks into the pregnancy.
3. As the placenta grows, more of these hormones are produced, and the risk of insulin resistance becomes greater. Normally, the pancreas is able to make additional insulin to overcome insulin resistance, but when the production of insulin is not enough

Author Affiliation: ^{1,2}Student, ³Dean, ⁴Professor, Department of Medical Surgical Nursing, School of Nursing, Galgotia University, Greater Noida 201310, Uttar Pradesh, India.

Corresponding Author: Simrat Kaur, Professor, Department of Medical Surgical Nursing, School of Nursing, Galgotia University, Greater Noida 201310, Uttar Pradesh, India.

E-mail: simrat.kaur@galgotiasuniversity.edu.in

Received on: 24.03.2023 **Accepted on:** 14.04.2023

to overcome the effect of the placental hormones, gestational diabetes results

Risk Factor

1. Overweight or obesity
2. Family history of diabetes
3. Having given birth previously to an infant weighing greater than 9 pounds
4. Age (women who are older than 25 are at a greater risk for developing gestational diabetes than younger women)
5. Race (women who are African-American, American Indian, Asian American, Hispanic or Latino, or Pacific Islander have a higher risk)
6. Prediabetes, also known as impaired glucose tolerance

Diagnosis

The American Diabetes Association recommends screening for undiagnosed type 2 diabetes at the first prenatal visit in women with diabetes risk factors. In pregnant women not known to have diabetes, GDM testing should be performed at 24 to 28 weeks of gestation.

In addition, women with diagnosed GDM should be screened for persistent diabetes 6 to 12 weeks postpartum. It is also recommended that women with a history of GDM undergo lifelong screening for the development of diabetes or prediabetes at least every three years.

Treatment

1. Your age, overall health, and medical history
2. Extent of the disease
3. Your tolerance for specific medications, procedures, or therapies
4. Expectations for the course of the disease
5. Your opinion or preference

Treatment for gestational diabetes focuses on keeping blood glucose levels in the normal range. Treatment may include:

1. Special diet
2. Exercise
3. Daily blood glucose monitoring
4. Insulin injections

Complication

1. *Macrosomia*: Macrosomia refers to a baby who is considerably larger than normal. All of the nutrients the fetus receives come directly from

the mother's blood. If the maternal blood has too much glucose, the pancreas of the fetus senses the high glucose levels and produces more insulin in an attempt to use this glucose. The fetus converts the extra glucose to fat. Even when the mother has gestational diabetes, the fetus is able to produce all the insulin it needs. The combination of high blood glucose levels from the mother and high insulin levels in the fetus results in large deposits of fat which causes the fetus to grow excessively large.

2. *Hypoglycemia*: Hypoglycemia refers to low blood sugar in the baby immediately after delivery. This problem occurs if the mother's blood sugar levels have been consistently high, causing the fetus to have a high level of insulin in its circulation. After delivery, the baby continues to have a high insulin level, but it no longer has the high level of sugar from its mother, resulting in the newborn's blood sugar level becoming very low. The baby's blood sugar level is checked after birth, and if the level is too low, it may be necessary to give the baby glucose intravenously.

REFERENCES

1. Ben-Haroush A, Yoge Y, Hod M. Epidemiology of gestational diabetes mellitus and its association with Type 2 diabetes. *Diabet Med*. 2004;21:103-113.
2. Catalano PM, Ehrenberg HM. The short- and long-term implications of maternal obesity on the mother and her offspring. *BJOG*. 2006;113:1126-1133.
3. HAPO Study Cooperative Research Group. The Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Study. *Int J Gynaecol Obstet*. 2002;78:69-77.
4. Ferrara A. Increasing prevalence of gestational diabetes mellitus: a public health perspective. *Diabetes Care*. 2007;30 Suppl2:S141-S146.
5. Jiwani A, Marseille E, Lohse N, Damm P, Hod M, Kahn JG. Gestational diabetes mellitus: results from a survey of country prevalence and practices. *J MaternFetal Neonatal Med*. 2012;25:600-610.
6. Macaulay S, Dunger DB, Norris SA. Gestational diabetes mellitus in Africa: a systematic review. *PLoS One*. 2014;9:e97871.
7. Diabetes Atlas International Diabetes Federation. 6th ed. Available from:
8. American Diabetes Association. Standards of medical care in diabetes--2014. *Diabetes Care*.

- 2014;37 Suppl1:S14–S80.
9. Nielsen LR, Ekbom P, Damm P, Glümer C, Frandsen MM, Jensen DM, Mathiesen ER. HbA1c levels are significantly lower in early and late pregnancy. *Diabetes Care*. 2004;27:1200–1201.
 10. Yogev Y, Metzger BE, Hod M. Establishing diagnosis of gestational diabetes mellitus: Impact of the hyperglycemia and adverse pregnancy outcome study. *Semin Fetal Neonatal Med*. 2009;14:94–100.

