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PATHCHAT

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Screening and diagnosing Diabetes Mellitus during pregnancy: Revised Criteria

Why revise the Gestational Diabetes Mellitus criteria ?

Gestational diabetes mellitus (GDM) has traditionally been defined as any degree of hyperglycaemia in pregnancy, including overt diabetes mellitus (DM), impaired glucose tolerance and impaired fasting glycaemia (as defined in the criteria for non-pregnant adults). The GDM guidelines had mainly focused on the increased risk of future maternal DM.

Although increased adverse pregnancy outcomes[1] have been well described and associated with GDM, the HAPO[2] study, published in 2008, conclusively proved the existence of a continuum of increasing risk of adverse pregnancy outcomes (maternal and foetal) with increasing plasma glucose levels.

Consensus groups

The HAPO study outcomes prompted two consensus groups (IADPSG[3] and ADA[4]) to re-evaluate their guidelines and recommendations for defining, diagnosing and treating hyperglycaemia during pregnancy.

The new IADPSG[3]/ADA[4] guidelines recommend a ***lower*** fasting and two-hour plasma glucose cut-off and the presence of only ***one*** abnormal glucose value during a 75 g oral glucose tolerance test (OGTT), as well as screening all pregnant women at 24 to 28 weeks' gestation.

Consensus groups are currently debating these recommendations, specifically due to the significant increase in global obesity and Type 2 DM, as well as the expected increase in GDM in pregnant women when using the new criteria for diagnosis. The financial burden of a national or global screening programme has been an important obstacle in the implementation of these recommendations.

It is recommended that the guidelines of the World Health Organisation (WHO), published in 2013, should be followed until an official South African guideline is published by the South African Obstetric and Endocrinology societies.

[1] Macrosomia, shoulder dystocia, caesarean delivery, neonatal hypoglycaemia and pre-eclampsia.
[2] HAPO Study Cooperative Research Group. 2008. Hyperglycemia and adverse pregnancy outcomes. *N Engl J Med*, 358:1991–2002.
[3] International Association of Diabetes and Pregnancy Study Group.
[4] American Diabetes Association.

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Please contact your local Ampath pathologist for more information.

WHO recommendations[5]:

1. Hyperglycaemia, detected at any time during pregnancy, should be classified as either:
   - DM in pregnancy (see recommendation 2)
   - GDM (see recommendation 3)
2. Diabetes in pregnancy should be diagnosed by the 2006 WHO criteria for diabetes if one or more of the following criteria are met:
   - Fasting plasma glucose ≥ 7.0 mmol/l
   - Two-hour plasma glucose ≥ 11.1 mmol/l following a 75 g OGTT
   - Random plasma glucose ≥ 11.1 mmol/l in the presence of diabetes symptoms
   - Any abnormal test should be confirmed on another day or by another test (if abnormal random glucose)
3. GDM should be diagnosed at any time in pregnancy if one or more of the following criteria are met:
   - Fasting plasma glucose 5.1 – 6.9 mmol/l
   - One-hour plasma glucose ≥ 10.0 mmol/l following a 75 g OGTT
   - Two-hour plasma glucose 8.5 – 11.0 mmol/l following a 75 g OGTT

NB: The use of the 50 g and 100 g OGTT tests have been abandoned in favour of the 75 g OGTT.

The above criteria are based on the incidence of adverse perinatal outcomes.

Important conditions to adhere to are ingestion of at least 150 g of dietary carbohydrate per day for three days prior to the test, a 10- to 16-hour fast, and commencement of the test between 07:00 and 09:00.

Guidelines for use of HBA1c levels to diagnose DM in pregnancy are not yet established.

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[5] WHO/NMH/MND/13.2 (published in 2013).