GIGT and GDM Tied to Similar Adverse Outcomes

BY ROBIN TURNER
Senior Editor

Gestational impaired glucose tolerance, defined by a single abnormal value at 1 hour during the oral glucose tolerance test, is associated with many of the same adverse outcomes as gestational diabetes mellitus, including postpartum glycemia, insulin resistance, and β-cell dysfunction, according to the results of a recent study.

Investigators evaluated metabolic function and outcomes in a cohort of more than 360 women stratified by glucose tolerance status during pregnancy. The participants underwent an antepartum glucose challenge test (GCT) and a 3-hour oral glucose tolerance test (OGTT), an assessment of obstetric outcome at delivery, and a metabolic characterization by OGTT at 3 months post partum.

The investigators identified five study groups: those with gestational diabetes mellitus (GDM), 1-hour gestational impaired glucose tolerance (GIGT), 2- or 3-hour GIGT, abnormal glucose challenge test (GCT) with normal glucose tolerance (NGT), and normal GCT with NGT (Diabetes Care 2008;31:1275-81). There were no significant differences among the groups with respect to mean age, smoking status, and parity.

The researchers noted the 1-hour GIGT group had adverse outcomes similar to the group with gestational diabetes mellitus, although the GIGT group did not have increased infant birth weight. The "Caesarian section rate was highest in the 1-hour GIGT group; there were no significant differences [among] the four non-GDM groups," wrote Dr. Ravi Retnakaran of the Leadership Sinai Centre for Diabetes, Mount Sinai Hospital, Toronto, and his colleagues.

In addition, there were no significant differences among the four non-GDM groups with respect to length of gestation, infant sex, or Apgar scores.

At 3 months post partum, glycemic parameters progressively increased from normal glucose challenge test with normal glucose tolerance to abnormal glucose challenge test with normal glucose tolerance to 2- or 3-hour gestational impaired glucose tolerance to 1-hour GIGT to gestational diabetes mellitus. Insulin sensitivity and β-cell function progressively decreased across the groups in the same manner.

Participants in the normal GCT NGT group underwent the 3-hour oral glucose tolerance test at a median of 32 weeks' gestation, compared with a median of 29 weeks' gestation for the other four groups.

Gestational diabetes mellitus is a metabolically heterogeneous disorder, which could lead to a higher risk of developing type 2 diabetes in the years following pregnancy.

Short term, there is an increased risk of adverse obstetric outcomes related to fetal overgrowth and higher birth weight. Long term, women with a history of GDM have chronic insulin resistance and β-cell dysfunction.

One limitation of the current study is the relatively modest number of participants with GIGT (28), wrote Dr. Retnakaran and his colleagues. Still, they said the issue warrants further investigation, including long-term follow-up to determine the risk of type 2 diabetes and appropriate cost-benefit evaluation of postpartum care strategies.

Dr. Retnakaran also is in the division of endocrinology and metabolism at the University of Toronto.

The study was supported by a grant from the Canadian Institutes of Health Research. ■