



Pathological glucose challenge test with an unknown oral glucose tolerance test - what are the consequences?

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Objective

The adverse outcomes of gestational diabetes and impaired fasting glucose during pregnancy are well established for both the mother and fetus. We aimed to evaluate the maternal and neonatal outcomes of mothers with pathological 50 grams glucose challenge test (GCT) who failed or refused to perform a 3-hour 100 grams oral glucose tolerance test (GTT).

Methods

Retrospective cohort study of women between 18 to 45 years of age who delivered in a tertiary university affiliated medical center from 2007 to 2015. Cohort was divided into four groups: group A)-women with pathological GCT values (≥ 140 mg/dl), who did not perform 3h-GTT; group B) women with pathological GCT values and normal 3h-GTT values; group C) women with pathological GCT and a single pathological 3h-GTT value; group D) women with gestational diabetes, according to 2 abnormal values in the GTT. Adverse maternal, fetal and neonatal outcomes were compared between the groups.

Results

Overall 6,640 women were evaluated: 236 (4%) in group A, 1679 (25%) in group B, 249 (4%) in group C and 4476 (67%) in group D; 2) Group A had the lowest rates of primiparity in comparison to other groups (44% vs. 58%, 53% and 47%, $p < 0.001$); group C had the highest rates of assisted reproductive techniques in comparison to others (17% vs. 12%, 15% and 9%, $p < 0.001$); groups were comparable in other parameters; 3) Group A and D had similar rate of cesarean deliveries, and significantly higher than in groups B and C (29.8% and 29.3% vs. 24.1% and 27.9%, $p = 0.008$); 4) group A had the lowest neonatal birth weight (3127.5 ± 719 vs. 3224.5 ± 604 , 3242 ± 634 and 3284.5 ± 640 , $p = 0.018$), the highest rates of 5 minutes low (≤ 7) APGAR score (4.8% vs. 0.9%, 1.1% and 0.7%, $p < 0.001$), neonatal asphyxia (4.2% vs. 2.9%, 1.1% and 1.5%, $p = 0.003$) and neonatal hypoglycemia (3.6% vs. 1.3%, 2.6% and 2.6%, $p = 0.05$). NICU administration rates were the highest as well among group A, but this finding did not reach statistical significance (13.1 vs. 8.3%, 9.5% and 9.3%, $p = 0.23$).

Conclusion

Women with pathological GCT value who do not perform OGTT have poor pregnancy outcomes and should not be overlooked. This finding might be due to their general lack of responsiveness to prenatal care and probably due to the fact that they harbor un-diagnosed and thus untreated gestational diabetes mellitus.