Postpartum Diabetes Screening

Adherence rate and the performance of fasting plasma glucose versus oral glucose tolerance test

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OBJECTIVE — To determine the rate of adherence to postpartum glycemic testing in women with gestational diabetes mellitus (GDM) and the performance of fasting plasma glucose (FPG) versus the 75-g oral glucose tolerance test (OGTT) in detecting postpartum glucose intolerance.

RESEARCH DESIGN AND METHODS — The study was a retrospective cohort of 1,006 women with GDM attending a pregnancy diabetes clinic.

RESULTS — Postpartum screening was completed in 438 (48%) women. Women nonadherent to testing had higher parity (1.10 vs. 0.87) and were less likely to require insulin for management of their GDM. Among women who were tested, 89 (21%) had an abnormal result, only 25 (28%) of whom were identified by FPG. Factors associated with abnormal postpartum diabetes screening include non-Caucasian ethnicity, previous GDM, higher A1C, and OGTT values during pregnancy and treatment with insulin.

CONCLUSIONS — The rate of postpartum diabetes screening is low, and FPG lacks sensitivity as a screening test in comparison with OGTT.

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Performing, 72% of women with postpartum hyperglycemia would have been missed.

Among the characteristics examined, postpartum hyperglycemia was significantly associated with non-Caucasian ethnicity (OR 3.72, P < 0.001), previous GDM (OR 2.07, P = 0.01), higher pregnancy OGTT values (fasting 5.20 ± 0.73 vs. 4.96 ± 0.63 mmol/l, P = 0.01; 1-h PG 11.74 ± 1.31 vs. 10.86 ± 1.45 mmol/l, P = 0.001; 2-h PG 9.43 ± 1.71 vs. 8.73 ± 1.51, P = 0.003), higher A1C value (5.75 ± 0.61 vs. 5.50 ± 0.49, P = 0.001), and the use of insulin during pregnancy (OR 2.53, P = 0.002).

CONCLUSIONS — Despite attempts to improve adherence, ≤50% of our cohort underwent postpartum testing for glucose intolerance, and only higher parity and lack of insulin use were significantly associated with nonadherence to testing. Lack of child care as reflected by a higher parity may hinder testing, as has been previously reported (8). Insulin use in pregnancy may lead to a greater perceived risk of postpartum hyperglycemia among patients, but its role in promoting adherence to postpartum testing has been discrepant in the literature (8,9), the reason for which is unclear. The contribution of socioeconomic status to general nonadherence to medical recommendation has been previously reported (10) but was not examined in this study. Possible contributors to the relatively low adherence rate include conflicting guidelines from the Canadian Diabetes Association versus the Society of Obstetrics and Gynecologists of Canada (11,12) and ambiguity as to which provider should arrange for testing (13), while a lack of medical resources unlikely contributes given a previously reported high adherence with postpartum cervical screening (14). Although phone reminders were used, a case manager and/or in-person postpartum follow-up may further improve adherence (8).

FPG is an inadequate screening tool to detect postpartum hyperglycemia, since the majority of cases will be missed. The lowering of FPG to 5.6 mmol/l has been suggested to improve diagnostic sensitivity in IFG, since this value more accurately reflects the increased risk for development of future diabetes or cardiovascular disease (15). However, even if a FPG cutoff of 5.6 mmol/l was applied to the cohort, 56% of cases of hyperglycemia would be missed without completion of the 75-g OGTT.

Poor adherence to postpartum testing precludes early detection and timely intervention among these at-risk women. Given the rising incidence of postgestational hyperglycemia (1) and a lack of reliable predictors to identify nonadherence to postpartum testing, universal screening with an OGTT should be applied to this high-risk population.

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