

Title: Home administration of a 2-hour oral glucose tolerance test can increase completion rate for postpartum diabetes testing among patients with gestational diabetes mellitus

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Background/Synopsis – Hyperglycemia reclassification testing via a two-hour oral glucose tolerance test (2-hour OGTT) at a routine postpartum visit between four to twelve weeks postpartum is recommended for postpartum patients who were diagnosed with gestational diabetes mellitus. Despite the maternal health risks associated with foregoing this test, fewer than 50% of women with gestational diabetes complete it at our institution. Although some alternative methods have been proposed to increase compliance with the 2-hour OGTT, barriers to completion continue to exist.

Objective/Purpose – The purpose of the present study was to evaluate the implementation of an at-home postpartum 2-hour OGTT as a feasible option for postpartum hyperglycemia reclassification testing for patients diagnosed with gestational diabetes who already had diabetic testing supplies. We hypothesized that completion rates of the postpartum 2-hour OGTT will improve with home administration of the test in comparison with the standard ambulatory clinic administration.

Methods – IRB approval was obtained for this study. A total of 31 women in Mobile, Alabama consented to participate in this non-randomized controlled trial between December 2023 and December 2024. At a routine postpartum visit, participants were given oral and written instructions to perform a 2-hour OGTT at home. They were sent home with a bottle of 75-gram glucola and the written instructions. At home, participants used their own blood glucose meter to check their fasting blood glucose immediately before drinking the glucola. They recorded this number with the time. After 2 hours, participants again checked and recorded their blood glucose with the time. Participants submitted these results via email to the department's diabetes email address, or their online patient portal. They were contacted by their provider within 2 days of submission and informed if they had passed or failed the 2-hour OGTT.

Results – The primary outcome measure was completion of the postpartum 2-hour OGTT. This study compared completion rates of the postpartum 2-hour OGTT between those who enrolled in the at-home test and those who opted for the standard ambulatory clinic administration. A total of 247 women were included in the statistical analysis with 216 belonging to the control group and 31 belonging to the study group. The completion rate for the 2-hour postpartum glucose tolerance test was significantly higher in the study group offered the at-home test than in the control group offered the ambulatory clinic test ($p < 0.001$). Of the patients in the control group who chose the ambulatory clinic test, only

12.0% completed the test whereas 74.2% of the patients in the at-home study group completed the test. The incompleteness rate was significantly higher in the control group at 88.0% than in the study group at 25.8%.

Conclusion – The present results support the hypothesis that offering an at-home postpartum 2-hour OGTT to women diagnosed with a form of gestational diabetes increases the completion rate of that test. Because the control group and the study group are comparable with regards to distribution of demographic characteristics as evidenced by a p-value greater than 0.050 across all categorical variables, these findings are consistent among these women regardless of gestational diabetes type, race, marital status, and insurance type. Further studies are indicated to determine if the increased completion rate of the postpartum 2-hour OGTT seen in women choosing the at-home option is also associated with an increase in follow-up appointment attendance among women with abnormal test results.