

Effect of an Exercise Intervention on Gestational Diabetes Mellitus: A Randomized Controlled Trial

Nobles, Carrie; Marcus, Bess H.; Stanek, Edward J. III; More

Obstetrics & Gynecology. 125(5):1195-1204, May 2015.

OBJECTIVE: To examine the effect of an individually tailored, motivationally matched prenatal exercise intervention on gestational diabetes mellitus (GDM) and other measures of glucose intolerance among ethnically diverse prenatal care patients at increased risk for GDM.

METHODS: The Behaviors Affecting Baby and You study randomized eligible women at a mean (standard deviation) of 18.2 (4.1) weeks of gestation to a 12-week individually tailored, motivationally matched exercise intervention or a comparison health and wellness intervention. The goal of the exercise intervention was to achieve the American College of Obstetricians and Gynecologists' guidelines for physical activity during pregnancy. Diagnosis of GDM, impaired glucose tolerance, abnormal glucose screen, and screening glucose values (mg/dL) were abstracted from medical records. A sample size of 352 women (176 per group) was planned to have 80% power to detect reductions in risk of 35% or larger.

RESULTS: From July 2007 to December 2012, a total of 251 (86.5%) women completed the intervention; n=124 and 127 in the exercise and comparison interventions, respectively. Based on an intention-to-treat analysis, no statistically significant differences between the intervention groups were observed; the relative odds of GDM in the exercise group was 0.61 (95% confidence interval [CI] 0.28–1.32) as compared with the health and wellness comparison group. Odds ratios for impaired glucose tolerance and abnormal glucose screen were 0.68 (95% CI 0.35–1.34) and 0.86 (95% CI 0.51–1.47), respectively. The intervention had no effect on birth outcomes.

CONCLUSION: In this randomized trial among ethnically diverse pregnant women at increased risk for GDM, we found that a prenatal exercise intervention implemented in the second trimester did not result in a statistically significant reduction in relative odds for GDM, impaired glucose tolerance, or abnormal glucose screen.