

Predictors of Postpartum Depressive Symptoms in Women with Recent Gestational Diabetes

Jennifer Dias. *Icahn School of Medicine at Mt Sinai*

Jennifer Dias¹, Jacinda Nicklas², Lara Shqair³, Ellen W. Seely³

¹Icahn School of Medicine at Mt Sinai, New York, N.Y., ²University of Colorado School of Medicine, Aurora, Colo., ³Brigham and Women's Hospital, Boston, Mass.

Background: Patients with gestational diabetes mellitus (GDM) have an increased risk of developing type 2 diabetes mellitus (T2DM) after delivery and are encouraged to practice behaviors, such as healthy nutrition, physical activity and weight loss to attenuate future risk of T2DM. GDM has been shown to significantly increase the risk for post-partum depressive symptoms, which can impair a woman's ability to engage in and adhere to diabetes prevention efforts. To further inform the development and adaption of lifestyle interventions to prevent T2DM, we sought to identify factors associated with depressive symptoms in the early postpartum period among women with recent GDM.

Methods: Participants are from the baseline cohort of the Balance after Baby Intervention study, a two-year randomized clinical trial of a lifestyle intervention for women with recent history GDM conducted in Boston, MA and Denver, CO between 2016-2019. Prior to randomization, a study visit was scheduled at approximately 6 weeks post-partum. At this visit, weight and height were measured for determination of BMI. We administered the Edinburgh Postpartum Depression Scale (EPDS) and Perceived Stress Scale (PSS-10). We used an EPDS score of >9 as depressive symptoms and a PSS score of >14 as moderate to high perceived stress. We collected self-reported pre-pregnancy weight, and reviewed medical records to obtain medical history, including GDM diagnosis, mode of delivery, gestational weight gain and insulin use during pregnancy. We conducted bivariate analyses to identify predictors of postpartum depressive symptoms, then modeled the odds of post-partum depressive symptoms using multivariate logistic regression.

Results: Our study included 181 women (mean age, SD 32.6± 5.3 years, 51.4% White/14.4% Black/33.7% Latinx, mean pre-pregnancy BMI 29.8± 6.0 kg/m²). 19 % of women scored >9 on EPDS and 53% of women scored >14 on PSS at the post-partum visit. Variables included in the bivariate analysis were age, Black/Latinx-identifying, college completion, perceived stress, primiparity, having a partner, pre-pregnancy BMI, gestational weight gain, C-section, insulin use during pregnancy, breastfeeding, 1st GDM pregnancy, exceeding IOM weight gain guidelines and income level. Of those variables, the best fit multivariate model with the lowest Akaike information criterion (AIC) included perceived stress, C-section and 1st GDM pregnancy. Using this model, the regression analysis showed that perceived stress (14.5 OR, 95% CI [4.2-49.9], p<.001) and 1st GDM pregnancy (.342 OR, 95% CI [.117-.997] p=0.042) were both predictive of postpartum depressive symptoms. C-section was no longer a significant predictor.

Conclusion: Perceived stress and 1st GDM pregnancy were predictive of post-partum depressive symptoms in women with recent GDM. Addressing perceived stress in the early post-partum period and challenges related to 1st GDM pregnancy may be important targets for development or adaptations of future lifestyle interventions to prevent T2DM in women with recent GDM.

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