It Is Time to View Pregnancy as a Stress Test

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THERE IS A SLIPPERY SLOPE between a diagnosis of diabetes in pregnancy and the future development of type 2 diabetes. Women who develop gestational diabetes mellitus (GDM) are seven times more likely to develop future type 2 diabetes than women with a normal pregnancy.¹ With this in mind, pregnancy can be considered a stress test, with the diagnosis of GDM unveiling a preexisting susceptibility for type 2 diabetes and serving as a harbinger of future disease risk.

This early warning is important as evidence suggests that the incidences of GDM and of postpartum type 2 diabetes, following a diagnosis of GDM, are both increasing as the prevalence of obesity among women of reproductive age increases.^{2–4} Indeed, GDM is one of the most common maternal complications of pregnancy.⁵

Viewed in this manner, GDM provides an excellent opportunity to implement interventions to prevent or delay the development of diabetes. However, to date, little attention has been given to the potential benefits of such strategies in women with a history of GDM. Therefore, Guo et al. make an important contribution to this area in this issue of the *Journal of Women's Health*.⁶ The authors conducted a systematic review of postpartum lifestyle interventions to prevent type 2 diabetes among women with a history of GDM. Regardless of the mode of delivery, their findings suggest that interventions which promote healthy diet and physical activity can be efficacious in reducing postpartum risk of type 2 diabetes and insulin resistance and in decreasing weight gain.

However, this area of research remains relatively understudied—studies were sparse and the majority were limited to pilot or feasibility studies. For example, five randomized trials evaluated the impact of a lifestyle intervention on the incidence of type 2 diabetes. Among those studies which presented risk ratios women participating in the lifestyle intervention experienced reductions in risk of subsequent type 2 diabetes ranging from 17%⁷ to 53%.⁸ The fact that many of these findings were not statistically significant highlights the small sample sizes and the corresponding low statistical power of these trials. For example, among these studies, the average sample size was 211, with the smallest study having only 43 participants. In such a setting, a meta-analysis is warranted; however, as noted by Guo et al., the lack of homogeneity precluded such an analysis.

Therefore, findings from this systematic review highlight the need for larger trials. Such studies should address several

barriers to fully capitalize upon pregnancy as a stress test and the diagnosis of GDM as an opportunity to intervene.

First, GDM and postpartum diabetes prevention are typically managed by different medical providers—and there is no established system for sharing information between them. For example, an analysis of prospective data from two large academic medical centers found that only 37% of women with a history of GDM were screened for postpartum diabetes according to guidelines published by the American Diabetes Association.^{5,9} More importantly, women with a history of GDM are not typically counseled by their physicians to change their diet and exercise behaviors to help prevent the onset of type 2 diabetes.¹⁰

Second, women diagnosed with GDM are usually not aware of their future type 2 diabetes risk. A study of women who were enrolled in a managed care plan found that only 16% of women with a history of GDM believed that they had a high chance of developing type 2 diabetes and the majority did not recall receiving this information from their physician.¹¹

Third, practitioners need to provide postpartum women with easily accessible prevention programs. As Guo et al. note, lifestyle prevention programs designed for older adults with prediabetes are highly effective, reducing progression to type 2 diabetes by more than 50%.¹² These programs can be applied to postpartum women, but need to be modified to take into account the physical and socioeconomic barriers faced by many women with young children, such as lack of access to childcare, a safe environment to exercise, and healthy foods.

These problems are not insurmountable. For example, recent intervention studies have used high-reach low-cost strategies to increase physical activity among young pregnant Hispanic women, many of whom have annual household incomes below the poverty level and live in unsafe neighborhoods.¹³ In spite of these barriers, health educators can motivate women to make small, but steadily consistent and consequential, improvements in their diet and exercise.

Therefore, with an understanding of GDM as a window into future health, women and their physicians have the rare opportunity to alter the natural course of disease. The postpartum period should be a time when women and their physicians pay particular attention to diabetes screening and prevention through diet, physical activity, and weight management. Given the high prevalence of U.S. pregnant women with GDM and the growing rates of obesity, these findings are important on a population-wide level.

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