ARKANSAS
PRAMS REPORT
PREGNANCY RISK ASSESSMENT MONITORING SYSTEM SEPTEMBER 2015

Why Screening for Diabetes Before, During, and After Pregnancy is Important

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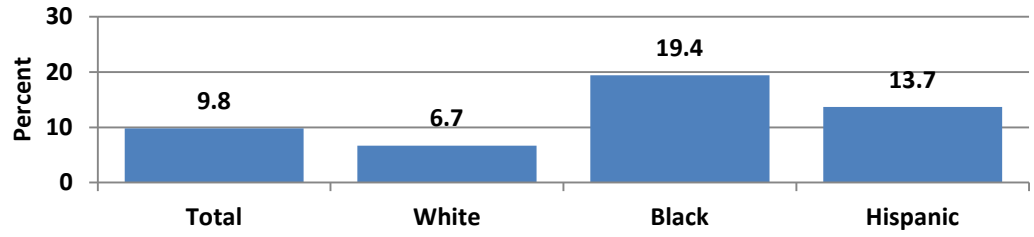
Screening for diabetes between 24-28 weeks of pregnancy is almost a universal standard. However, recent studies have shown that screening women for diabetes either before or during the early stages of pregnancy[1,2] and at the six-week postpartum follow-up appointment[3] are just as important. A couple of the main benefits of screening are: 1) the identification of undiagnosed type 2 diabetes, which can cause birth defects, and 2) helping women with true gestational diabetes mellitus (GDM) understand they have up to a 70% chance of progression to type 2 within 10 years[4], if simple non-medical steps are not taken to prevent the transition.

Intensive Lifestyle Therapy/Diabetes Prevention Project (ILT/DPP) [exercise and nutrition education] has been shown to prevent progression to type 2 diabetes at 10 years even better than medication (metformin).[5] ILT/DPP results in more than a 40% reduction in the progression from pre-diabetes to type 2 diabetes. Infants of GDM pregnancies are also at higher risk of early childhood obesity and type 2 diabetes.[6] Obesity is probably the single biggest driver of our current diabetes epidemic.

Screening Before Pregnancy is the Only Way to Prevent Birth Defects

Screening for diabetes between 24-28 weeks is a universal practice. On the other hand, from 2009-2012 only about 10% of Arkansas mothers were screened for diabetes in the year prior to getting pregnant. Because of higher risk, black and Hispanic mothers were more likely to be screened (at 19% and 14% respectively) prior to pregnancy than white mothers (at 7%) (see Figure 1).

Figure 1. Percentage of Women with Live Births Who Were Tested for Diabetes 12 Months Prior to Getting Pregnant by Race and Ethnicity: Arkansas PRAMS, 2009-2012



Screening is necessary to identify and treat positive cases in order to prevent the 2600+ annual US birth defects .[7] In reality, reproductive age women in Arkansas should be screened regularly since 50 % of pregnancies are unplanned (Arkansas PRAMS). According to 2012 data from the Arkansas Behavioral Risk Factor Surveillance System (BRFSS) survey, 60% of reproductive age women are either overweight or obese, putting them at greater risk for having pre-diabetes or type 2 diabetes. By the time women schedule their first OB appointment, it is already too late to prevent hyperglycemia-related birth defects. Prevention of these birth defects will require screening all reproductive age women at **any** health care visit, especially since 50 % of pregnancies are unplanned (Arkansas PRAMS) . Studies have shown that reducing the patient's A1c to less than 5.7 before fertilization significantly reduces any increased risk of birth defects over baseline risk (non-diabetic population).[8] Since early stages of type 2 diabetes are asymptomatic, many patients go 5-10 years without diagnosis and treatment. This often results in irreversible damage that could have been prevented. A history of GDM is the highest known risk factor for developing type 2 diabetes.[5]

Screening Only During Pregnancy Misses 25% of Undiagnosed Type 2 Diabetes Cases

Screening for diabetes prior to pregnancy or during the early stages of prenatal care is important to prevent misdiagnosing type 2 diabetes as GDM. It offers opportunities to provide follow-up treatment for women with true GDM. Screening for GDM during pregnancy used to be simple. American College of Obstetricians and Gynecologists (ACOG) recommends universal screening at 24-28 weeks with the two-step method.[9] However, waiting until 24 weeks misses the 25% of type 2 diabetes cases that are undiagnosed. This prevents early treatment for type 2 diabetes and misleads patients who actually have type 2 diabetes into believing that their "diabetes will go away after delivery," because they have been told that they have GDM. Women with a false diagnosis of GDM (misdiagnosed type 2 diabetes) will have diabetes before, during, and after pregnancy with resulting progression of their disease, increased risk of birth defects, and increased risk of maternal and fetal complications.

The new one-step method (performed at 24-28 weeks) is also recommended; however, since no randomized comparisons are available both methods are currently approved. The one step method increases the Arkansas estimate of the percentage of women with GDM from 10% (top 5 in the US) to 20%. Identifying the previously undiagnosed type 2 diabetics will allow for early diabetes management and improved maternal and birth outcome. The one step only requires one abnormal value for the test to be positive. The one step method is used by the WHO and European nations instead of the US two step method. The two step method is based on maternal progression of GDM to type 2 diabetes after delivery. The one step method is based on a 75% increased risk of maternal and fetal complications of that pregnancy. Studies have yet to determine if identifying these lower risk pregnancies as GDM will be cost effective. Using the old two step method, 8% of pre-diabetics progressed to retinopathy without ever progressing to classic diabetes by the two step criteria.[5]

Screening After Pregnancy Will Help to Identify Women with Diabetes and Prediabetes

Up to 70% of women with true GDM will progress to type 2 diabetes within 10 years of delivery. The postpartum checkup is an opportune time to screen for diabetes. Almost 90% of Arkansas women who completed the 2009-2011 PRAMS surveys reported having a postpartum checkup; however, estimates show that less than half of women with a current diagnosis of GDM will get follow-up screening of their glucose levels within 12 months of delivery.[3] With postpartum visits at such a high rate, it is especially important for OBs, primary care physicians , and APNs to have more open communication and better hand-offs about their patients, particularly where GDM is concerned. Women with a history of GDM should be screened every year for diabetes and pre-diabetes. Women with type 2 diabetes or GDM can be referred for Diabetes Self-Management Education (DSME) during pregnancy (if available in your area). Most women with GDM will revert to prediabetes for several years after delivery. Referral of these women to a DPP/ILT program (limited availability in Arkansas except online) can prevent > 50% of them from progressing to type 2 diabetes. Screening for prediabetes has been shown to only be cost effective if treatment and prevention are undertaken.[10]

Conclusion

Assuming that a pregnant woman diagnosed with GDM only has GDM will miss an estimated 25% of Arkansas women who, in reality, have type 2 diabetes. This translates into about 900 misdiagnosed cases per year. Testing for type 2 diabetes prior to pregnancy, at one of the initial prenatal visits, or at a postpartum checkup (6+ weeks after delivery) can confirm the diagnosis.

With as many as 70% of GDM patients developing type 2 diabetes within 10 years, these women, as well as those diagnosed with type 2 diabetes, need to be educated about their condition and if possible enrolled in an Intensive Lifestyle Therapy program.

Arkansas has one of the highest rates of GDM in the nation, but it is possible to reduce the rate of progression to type 2 diabetes through screening and treatment of GDM.

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What is PRAMS?

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an on-going, population-based surveillance system sponsored by the Centers for Disease Control and Prevention (CDC). The PRAMS survey asks women who recently had a live birth about their behaviors and experiences that occurred before, during, and after pregnancy that might affect the health of their babies. For more information about PRAMS, go to the Arkansas PRAMS webpage www.healthy.arkansas.gov/programsServices/healthStatistics/Pages/Prams.aspx or the CDC website at www.cdc.gov/prams.

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