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Postpartum Management of Women with Gestational Diabetes

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PERMISSION

Title Postpartum Management of Women with Gestational Diabetes

Department Nursing

Degree Master of Science

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Abstract

This case report highlights the importance of postpartum glucose screening, along with diabetes prevention education, for women with history of gestational diabetes mellitus (GDM).

Gestational diabetes is a strong indicator of future type 2 diabetes. Postpartum screening allows providers opportunity for early detection of abnormal glucose levels in this vulnerable population (Frazzita, Anderson & Egan, 2013). Clinical practice guidelines establish routine postpartum care that include close monitoring of women with GDM. However, screening rates are as low as 33% among providers (Bihan et al., 2014; Hunt, Logan, Conway & Korte, 2010; Kapustin, 2008). The case description depicted in this paper illustrates a typical postpartum visit and how the primary provider can bridge the gap between clinical recommendations and practice by facilitating their implementation.

Postpartum Management of Women with Gestational Diabetes

Background

This case report explores the importance of postpartum diabetes screening and education for women with gestational diabetes mellitus (GDM), current practice guidelines, barriers to care, and measures to improve screening and clinical outcomes.

Women with GDM are at a sevenfold risk for developing type 2 diabetes mellitus (Bellamy, Casas, Hingorani & Williams, 2009), presenting an opportunity for providers to predict future chronic disease. Patient education throughout pregnancy and during the postnatal period should include strategies that empower patients to take ownership of their health and prevent the future development of diabetes mellitus.

The case description illustrates how postpartum education and lifestyle modification should be initiated and reinforced throughout pregnancy, as access to care can be limited in the immediate postpartum period. By recognizing factors associated with low postpartum glucose testing, primary care providers can facilitate strategies to improve postpartum screening and preventative management in this vulnerable population, as early treatment and education on lifestyle interventions can reduce the onset of diabetes mellitus, optimizing health and reducing healthcare costs.

Case Description

The patient in the case description is a 25-year-old G2P1 female with history of GDM who is in for a 10 week postpartum check. She reports having missed her scheduled six week postpartum check and labs due to child care issues. Her gestational diabetes was controlled with insulin during her pregnancy. She also had gestational hypertension, but was not pre-eclamptic.

She was induced at 38 weeks and vaginally delivered a healthy baby weighing 8# 14oz over a mid-line episiotomy with no complications approximately 10 weeks ago. She is currently breast-feeding and denies fever, malaise, breast tenderness, vaginal bleeding, or abdominal cramping. She has not checked her blood sugar since delivery. She is interested in initiating birth control today.

Her medications include prenatal vitamins, admits to noncompliance, and she has no drug allergies. No known history of diabetes prior to pregnancy.

Family history includes a father who has diabetes type 2, onset at 57 years. Her mother is reported as healthy. No family history of cardiac disease or cancer.

Patient is married and this is their first child. She will be returning to work in 2 weeks. She does not smoke, history of 1-2 alcoholic drinks per month while non-pregnant, does not currently drink while breast-feeding, walks daily, and feels her diet is adequate. She does not use street drugs. She sleeps about 4-6 hours per night, depending on baby's schedule, and tries to nap when baby naps. She is up to date on her influenza and pertussis vaccines. She feels safe in her home.

Review of systems reveal she has no recent illness. No cough, runny nose, or sore throat. Denies shortness of breath or chest pain. No abdominal tenderness, nausea, vomiting, or trouble with diarrhea or constipation. She is voiding with no difficulties. Her bleeding ceased six weeks ago, and she resumed her menses two weeks ago; Normal flow with menses, no clots or menorrhagia. Last pap was 10 months ago and negative for dysplasia. Denies breast tenderness, fever, or fatigue. She has no lower extremity edema, and denies numbness or tingling to extremities. She has not had any episodes of dizziness, light-headedness, or vision changes. She denies feeling excessively sad or depressed. She feels she is bonding well with baby. She has no

concerns with breast-feeding, feels baby is latching on well and milk supply is adequate. She is exclusively breast-feeding.

Patient is interested in starting contraception, although unsure what type. She does not want another pregnancy for 2-3 years, so she is open to long-term contraception. She feels barriers to taking oral meds would be forgetting to take them daily. Different types of contraception reviewed, including progestin-only oral agents, injectable, implants, and intra-uterine devices. Discussed risks associated with combination methods containing estrogen. Patient requests to take home written information to review with husband and will return when ready to start. She will utilize barrier methods such as condoms until then.

Physical exam of the patient reveals a pleasant young Hispanic female sitting on exam table in no acute distress. She maintains eye contact, is an accurate historian, and has an amiable and engaging affect. Visibly brightens when discussing infant. Her oral temperature is 98.5, pulse is 68, respirations are 16, and blood pressure is 122/78.

Her head is normocephalic with healthy hair. Pupils are equal and reactive bilaterally with intact extra-ocular movements. Her tympanic membranes are pearly grey with no erythema or effusion. Her nares are clear and turbinates patent. Her pharynx is pink and moist with no tonsillar hypertrophy.

She has no cervical adenopathy and no carotid bruits. No thyroidomegaly detected. Lungs are clear throughout with no wheezing, rhonchi, or rales. Heart has an S1, S2 regular rate and rhythm with no murmurs, gallops, or clicks.

She has normoactive bowel sounds in all quadrants with no rebound tenderness, guarding, or organomegaly. Unable to abdominally palpate uterus. No peripheral edema or varicosities noted. She denies any pain.

Labs today include a basic metabolic panel and a two hour 75 gm oral glucose tolerance test, all of which are within normal limits.

Assessment of this patient includes routine postpartum exam, gestational diabetes screening, contraception consultation, and resolved gestational hypertension.

Plan for patient to contact clinic when ready to start contraception. Thirty minutes spent discussing risks of future diabetes mellitus with her history of GDM; lifestyle modifications such as nutrition, physical exercise, and weight management stressed to offset risk and maintain optimal health. Encouraged annual health maintenance exam to monitor for diabetes. Pap schedule discussed. Daily caloric needs for breast-feeding discussed. Lactation consult offered. Symptoms of postpartum depression reviewed. Patient to follow-up with any concerns or questions.

Literature Review

The case description depicts a clinical scenario in which the primary care provider utilizes clinical practice guidelines and offers lifestyle modifications in an effort to detect and prevent chronic disease in a high-risk postpartum patient with history of GDM. The literature review reinforces the importance of ongoing education and postpartum screening in a patient with GDM, reviews current practice guidelines on postpartum screening and management, addresses barriers to care, and discusses factors associated with increased screening.

Gestational diabetes mellitus is a known risk factor for the development of type 2 diabetes (Castorino & Jovanovic, 2013; Frazzita et al., 2013; Hunt et al., 2010). Successful postpartum glucose screening in the patient with history of GDM is imperative for early identification of prediabetes and type 2 diabetes. Evidence indicates a moderate proportion of women screened postpartum had type 2 diabetes (1.2%-4.5%) or prediabetes (12.2%-36.0%)

(Tovar et al., 2011). Abnormal glucose levels in the postpartum patient with history of GDM indicate high risk for diabetes. Early detection allows early treatment and lifestyle interventions aimed to both reduce the incidence and prevent the complications of type 2 diabetes among this high-risk population (Hunt et al., 2010).

Women diagnosed with GDM are also at increased risk of recurrent GDM in future pregnancies (Bihan et al., 2014; Kim, 2010; Middleton & Crowther, 2013). Women who have had GDM with one pregnancy are 30%-69% more likely to experience GDM again in future pregnancies (Bihan et al., 2014; Kim, 2010; McGovern et al., 2014). Uncontrolled hyperglycemia in the first trimester is associated with birth defects (Castorino & Jovanovic, 2013; Kin, 2010). Thus, timely detection of diabetes after delivery has the potential to benefit the health of the mother and her future offspring (Sterne & Logan, 2011). The case description highlights the important aspect of educating patients with GDM on risks, follow-up screening, and health maintenance during pregnancy, as this knowledge increases the likelihood of postpartum follow-up care. The patient in the case description was cognizant of her risk of developing type 2 diabetes after delivery, and was motivated to return for postpartum glucose testing, even though she missed her six week appointment.

Many professional organizations have published clinical practice guidelines that recommend routine postpartum care for women with history of GDM. The American College of Obstetricians and Gynecologists (ACOG), the American Diabetes Association (ADA), and the Endocrine Society all recommend patients with GDM be screened for abnormal glucose at six to twelve weeks postpartum. The ADA and the Endocrine Society recommend the postpartum 75 gram oral glucose tolerance test (OGTT) with plasma glucose measured at fasting, one hour, and two hour intervals (ADA, 2014; Endocrine Society, 2013). The American College of

Obstetricians and Gynecologists recognize either a fasting plasma glucose (FPG) or the 75 gram, 2 hour OGTT as appropriate for diagnosing diabetes in the postpartum period (ACOG, 2013). The OGTT test is more sensitive, with reported sensitivities of 100% compared with 67% for FPG. (Tovar, Chasan-Taber, Eggleston & Oken, 2011; Gobl et al., 2013). Criteria for diagnosing diabetes postpartum via a 75-g OGTT are similar to those for non-pregnant adult women, and thus results can identify overt diabetes mellitus, impaired fasting glucose (IFG), impaired glucose tolerance (IGT), or normal glycemia (Tovar et al., 2011). All authors reviewed recommend counseling regarding lifestyle interventions such as exercise, healthy diet, weight reduction, and family planning to reduce the risk of type 2 diabetes. Breastfeeding should also be emphasized, as evidence suggest lactation has a positive effect on glucose and metabolism in postpartum women with GDM (Gunderson, 2013; Nankervis & Conn, 2013).

The American Diabetes Association recommends that women with a history of GDM with a normal postpartum screening be rescreened every three years, and women with IFG or IGT or both (prediabetes) should be rescreened annually (ADA, 2014). The Endocrine Society and ACOG also recommend periodic screening if postpartum results are normal, but do not specify how often. The Agency for Healthcare Research and Quality (AHRQ) follows the ADA's clinical practice recommendations in their revised guideline for the detection and diagnosis of gestational diabetes (AHRQ, 2013). The primary care provider is responsible for being cognizant of postpartum GDM management and incorporating these guidelines into practice in order to prevent future diabetes complications.

The patient in the case description benefitted from many aspects of guideline recommendations. She was aware of the risk for the development of type 2 diabetes with her history of gestational diabetes, she was tested for glucose abnormalities within the preferred

postpartum timeframe, she received counseling on lifestyle modifications to maintain optimal health and prevent future diabetes, and she was given instruction on lifelong screening for diabetes. The provider could have improved patient education by discussing the favorable effects of breastfeeding on maternal glucose tolerance during the postpartum period after GDM pregnancy (Castorino & Jovanovic, 2013; Gunderson, 2013). The increased likelihood of GDM with future pregnancies should have been discussed with the patient. With the knowledge that hyperglycemia can cause fetal abnormalities during early pregnancy, the patient may have elected to initiate hormonal contraception at the date of visit. However, her labs were WNL today. This is an example of interconception counseling for future family planning, along with the health promotion and maintenance that was offered. The case description is an example of how successful postpartum screening and comprehensive preventative care can reduce the risk of chronic disease in young women with history of GDM.

Despite well-established guidelines for postpartum diabetes screening in women with GDM, postpartum screening rates are low (Kerimoglu et al., 2010; Lega et al., 2011; McGovern et al., 2014; Stern & Logan, 2011). The literature review found that barriers to postpartum screening included provider, patient, and healthcare system issues. A systematic review on rates of postpartum diabetes screening by Tovar et al. (2011) found that perceived barriers to postpartum screening identified by clinicians included: clinicians' perception that screening guidelines were "inconsistent", lack of patient attendance at the postpartum visit, lack of documentation of GDM on problem list, and poor communication between obstetricians and primary care providers. Barriers were also described by postpartum women as a lack of awareness of the need to attend screening, the inconvenience of the two to three hour length of the OGTT, dislike of the screening procedure, fear of diabetes, and forgetting the appointment.

(Sterne & Logan, 2011). For example, the OGTT procedure can be cumbersome with a new infant to care for while spending 2-3 hours taking the test (Kapustin, 2008; Tovar et al., 2011). One program described by Frazitta incorporated postpartum glucose screening with diabetes prevention education in a group setting for women who had GDM (2013). During the class, which offers on-site daycare, the 2 hour OGTT is performed and the women participate in group education that promote healthy nutrition and lifestyle behaviors. The importance of preconception care for subsequent pregnancies and the need for follow-up care for women who screen positive are also emphasized (Frazitta, 2013). The patient in the case description would have been a perfect candidate for this program. She could not attend her first appointment due to child care issues, but she was interested and motivated to prevent future diabetes. The provider can use the two hour wait time of an OGTT to provide education, complete the postpartum exam, or have the patient schedule the neonate's first well-child visit simultaneously if time is identified as a barrier.

Patient characteristics associated with higher rates of postpartum screening included older age, nulliparity, and higher income or education (Tovar et al., 2011). Women who received prenatal care, were treated with insulin during pregnancy, or completed a 6-week postpartum visit were also more likely to receive postpartum screening (Kerimoglu et al., 2010). The patient in the case description missed her first postpartum appointment due to one of these barriers. She had no childcare for the necessary 2-3 hour visit and had to reschedule. Factors that improved the likelihood of receiving screening were that she received regular prenatal care, she was treated with insulin during pregnancy, and she completed the postpartum visit. The primary care provider needs to be cognizant of barriers to postpartum screening, and identify individual

patient circumstances that may hinder follow-up care and subsequent management of patients with GDM.

Measures to improve screening and clinical outcomes among postpartum patients with GDM start with primary care providers being knowledgeable of the risks for diabetes and adhering to clinical practice recommendations for routine screening and preventative strategies among this population (Kapustin, 2008). Ensuring that patients with GDM are aware of their risks and knowledgeable about preventative measures may improve postpartum screening rates as well as the understanding that GDM may not “just go away” after delivery (Sterne & Logan, 2011). This is a clear example of a missed opportunity and inadequate screening advice from providers. The patient in the case description was aware that her GDM could lead to future diabetes, and one of her priorities for the postpartum visit was to check her labs.

Fragmentation of care can have an impact on postpartum screening rates for patients who are managed solely by OB/GYNs or other specialists during a pregnancy but then return to a primary care provider in the postpartum period. Delineation of provider responsibility in this circumstance can be confusing (Sterne & Logan, 2011). Patient reminders can be potential facilitators to postpartum screening attendance (Kapustin, 2008; Sterne & Logan, 2011; Tovar et al., 2011). Reminders can be a letter, phone call, email, or text sent to patients. Reminders to providers via electronic health records, standing orders, and computerized reminder systems has also shown to improve adherence rates for postpartum screening (Kapustin, 2008).

Depending on the results of the postpartum screen and the possibility of a future pregnancy, ongoing screening is required for women with a history of GDM every 1-3 years. The provider could have expanded on this information when the patient was encouraged to follow-up annually, as her OGTT was normal. According to ADA recommendations, she would

need to be screened every 3 years. However, education on healthy lifestyle habits is always appropriate.

Gestational diabetes is a precursor to diabetes type 2 for many women. By being knowledgeable and adhering to practice guidelines, providers can utilize the postpartum screening as an opportunity to detect future disease and prevent complications among this younger population.

Learning Points

Primary providers play an important role in the early detection of diabetes and prediabetes among postpartum patients with history of GDM. The following points are instrumental in effectively educating patients with GDM on disease prevention and health promotion:

- GDM is a significant risk factor for type 2 diabetes
- Lifestyle interventions to reduce the risks and complications of diabetes in the postpartum period such as weight control, diet, exercise, breastfeeding, and family planning should be discussed during pregnancy
- Preconception/interconception counseling is vital for healthy future pregnancies
- Current practice guidelines recommend women with GDM be tested for glucose abnormalities 6-12 weeks postpartum, and lifelong screening at least every 3 years
- Early diabetes management can benefit the health of the mother and her future children, so any barriers to postpartum screening need to be identified and overcome

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