

Improved Obstetric Care in Preventing Stillbirth among Diabetic Pregnant Women

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ABOUT THE STUDY

Diabetes in pregnancy, particularly pregestational and gestational diabetes, poses a significant challenge to maternal and fetal health. One of the most devastating outcomes of pregnancy, especially in diabetic women, is stillbirth. A stillbirth, defined as the death of a fetus after the 20th week of gestation but before or during labor, remains a major contributor to neonatal mortality worldwide. The risk of stillbirth is heightened in women with diabetes due to various complications associated with the disease, such as poor glycemic control, vascular abnormalities, and impaired placental function.

Diabetes and stillbirth

Diabetes, whether pregestational or gestational, is associated with several complications that can increase the risk of stillbirth. The primary risk factors include poor glycemic control, maternal obesity, preeclampsia and Intrauterine Growth Restriction (IUGR). Diabetic pregnancies are often complicated by a higher incidence of fetal macrosomia (large for gestational age), congenital malformations and an increased likelihood of abnormal placental development.

Pregestational diabetes: Women with pregestational diabetes, where diabetes is diagnosed before pregnancy, face a higher risk of stillbirth. Poor blood sugar control in the early stages of pregnancy, particularly during the first trimester when fetal organogenesis occurs, can lead to embryonic malformations, including congenital heart defects, which contribute to stillbirth.

Gestational diabetes: Defined as glucose intolerance during pregnancy, also contributes to an increased risk of stillbirth. If poorly controlled, gestational diabetes can lead to fetal macrosomia, which is associated with birth injuries and complications during delivery.

Role of obstetric care in preventing stillbirth

Improved obstetric care is needed in managing diabetic pregnancies to prevent stillbirths. Several key strategies can help

mitigate the risk by ensuring optimal maternal and fetal health throughout the pregnancy. These strategies involve early identification, continuous monitoring, glycemic control and comprehensive management during labor.

Early identification and risk stratification

The first step in preventing stillbirth in diabetic pregnant women is early identification and risk stratification. Women planning pregnancy should ideally undergo preconception counseling to identify and address any potential health issues, including diabetes. Early detection of gestational diabetes through universal screening, as recommended by obstetric guidelines, is important for managing glucose levels before the fetus is affected.

Glycemic control

Maintaining good glycemic control throughout pregnancy is paramount in reducing the risk of stillbirth. Poor glycemic control, especially during the first trimester, can lead to fetal malformations, while hyperglycemia later in pregnancy can impair placental function and lead to fetal distress.

Pregestational diabetes: For women with pregestational diabetes, tight glycemic control is needed from the time of conception. This can be achieved through insulin therapy and close monitoring of blood glucose levels. Hemoglobin A1c (HbA1c), a marker of long-term blood glucose control, should be closely monitored to ensure it remains within the target range (ideally <6.5% before conception and throughout pregnancy).

Gestational diabetes: It is usually managed through dietary modifications, exercise and if necessary, insulin therapy. Blood glucose levels should be monitored frequently, and women with gestational diabetes should be educated on proper nutrition, the importance of regular physical activity and blood sugar monitoring to avoid complications that may lead to stillbirth.

Antenatal surveillance

It involves the use of monitoring techniques to detect potential complications that may lead to stillbirth. For diabetic women, a

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combination of routine and specialized surveillance can help identify and manage issues before they result in adverse outcomes.

Ultrasound imaging: Regular ultrasound examinations are important for assessing fetal growth, amniotic fluid volume and placental function. Diabetic pregnancies often have an increased risk of Intrauterine Growth Restriction (IUGR) or fetal macrosomia. Growth scans, typically performed every 4-6 weeks after 28 weeks of gestation, help track fetal development and ensure that the fetus is not showing signs of distress.

Fetal monitoring: Non-Stress Tests (NST) and Biophysical Profiles (BPP) are commonly used to assess fetal well-being in high-risk pregnancies. For diabetic women, these tests are typically performed after 32 weeks of gestation to monitor fetal heart rate patterns and movements.

Medical management

Medical management of diabetic pregnancies is important for preventing stillbirth. Several interventions can be implemented to optimize maternal and fetal health.

Aspirin for preeclampsia prevention: Diabetic women are at an increased risk for developing preeclampsia, which can impair placental function and increase the risk of stillbirth. Low-dose aspirin is recommended for women at high risk of preeclampsia, including those with diabetes.

Blood pressure control: Effective management of blood pressure in pregnant women with diabetes is important to prevent complications such as preeclampsia. Antihypertensive medications may be necessary to maintain blood pressure within normal ranges.

Insulin therapy: It is the cornerstone of managing pregestational diabetes. In cases where blood glucose levels cannot be controlled through diet and exercise alone, insulin may be required to maintain optimal glucose control. Insulin regimens should be tailored to each individual's needs, with regular monitoring of blood glucose levels to prevent hyperglycemia and hypoglycemia.

Labor and delivery management

The management of labor and delivery is critical for preventing stillbirth in diabetic pregnancies. Proper timing of delivery and close monitoring during labor can reduce the risk of fetal demise.

Timing of delivery: Women with diabetes are often at risk for prolonged pregnancies, which can increase the likelihood of stillbirth. For women with well-controlled diabetes, delivery is typically planned around 38-39 weeks to reduce the risks associated with prolonged gestation.

Mode of delivery: The mode of delivery is also important. Cesarean delivery may be recommended for women with large babies (macrosomia) or those with other complications that make vaginal delivery too risky.

Improved obstetric care is instrumental in preventing stillbirth among diabetic pregnant women. Early identification, effective glycemic control, routine antenatal surveillance, medical management, and careful labor and delivery management all play key roles in reducing the risk of stillbirth.