GESTATIONAL DIABETES SCREENING

Definition:

Gestational Diabetes Mellitus (GDM) is defined as any degree of carbohydrate intolerance that is first discovered during pregnancy. This condition results in higher than normal blood sugar levels in the mother. It usually occurs in second half of pregnancy (around 24 – 28 weeks) and for 98% of women, it disappears after the baby is born. It affects approximately 6.5% of pregnancies in Canada.

Understanding metabolic changes in pregnancy:

Glucose in the mother's blood crosses the placenta to help provide energy for the fetus. During pregnancy, the mother produces hormones that alter her carbohydrate metabolism to make glucose readily available to the fetus, primarily by increasing insulin resistance. Women with GDM do not produce enough insulin to deal with the increased blood glucose levels. This means the fetus will also have high blood glucose levels and will therefore need to produce higher than normal amounts of insulin to compensate, which may interfere with the normal growth and development of the fetus. Women with GDM usually have no symptoms and feel perfectly healthy.

Who is at risk for GDM?

Risk factors include women who have a previous history of gestational diabetes or a family history of diabetes, age greater than 25 years, being overweight or having a high BMI. Certain ethnic groups e.g. Asian, African, Aboriginal or Hispanic have a higher incidence of gestational diabetes. Women who have previously had large babies (greater than 4 kilograms), an unexplained stillbirth, or a baby with hypoglycaemia, hypocalcemia or severe jaundice may be at risk.

Clinical risk factors include repeated glycosuria (glucose in your urine), measuring large for dates, a substantial weight gain and a high level of amniotic fluid (polyhydramnios).

Who should be tested?

There is currently no single recommended approach for testing as there is not enough evidence-based data proving clinical benefits for universal screening. Screening is recommended for women with risk factors as listed above.

Who does not need to be tested?

Women who meet the following criteria;

- age < 25 years,
- member of ethnic group with a low prevalence of GDM,
- no family history of diabetes in first-degree relative,
- no history of abnormal glucose tolerance,
- no history of GDM (with or without an associated poor obstetrical outcome)
- weight normal before pregnancy,

are considered low risk and do not require glucose testing. It is acceptable to decline routine glucose testing in many situations. Women are encouraged to discuss their individual health status with their midwives to determine if screening is appropriate.

What are the tests?

The most common test is a 50 gram glucose challenge test (GCT) and is done between 24 and 28 weeks of pregnancy. This is a screening test and involves drinking a drink containing 50 grams of glucose and having your blood drawn one hour later to measure your blood sugar levels. Your midwife will discuss the results with you and if these values are above the normal range (>7.8 mmol/L) you will be offered a glucose tolerance test (GTT). If the value of the GCT is above 10.0 mmol/L you will be referred directly to the diabetes clinic without undergoing the GTT test.

Women with a previous diagnosis of GDM, a previous positive GTT or a strong likelihood of diagnosis by risk factors will be recommended to have either a fasting blood glucose, random blood glucose or HbA1c included in their initial bloodwork, and may be recommended to forgo the GCT and take the 2 hour GTT.

A GTT is a diagnostic test and requires fasting for ten hours prior to and during the test (except for water). Blood is drawn prior to taking a 75 gm gram sugar drink and then again at one and two hours (3 blood draws).

What happens if the GTT is abnormal?

Your midwife will discuss the results with you. If one or more of the values are above normal range this is considered diagnostic of gestational diabetes and requires a referral to the diabetes clinic. At the Diabetes Clinic you will see a specialist nurse and physician who will discuss with you how to monitor your blood sugar levels in pregnancy. You will have regular visits to the Diabetes Clinic to assess that dietary and lifestyle changes are keeping your blood sugar levels within normal ranges.

Does GDM need to be treated?

GDM is generally managed by diet and exercise. It is very important to follow the diet and exercise recommendations. The benefits of making these changes are to reduce the risks of hypoglycemia, hypocalcemia, hyperbilirubinemia (jaundice) and polycythemia in newborns. Diet and exercise help to reduce the incidence of very large babies (>4000gm/9lb), which may result in a difficult delivery. Pregnant women with GDM are at greater risk for developing maternal complications, therefore in some cases we consult with and share care with Obstetricians. In situations where insulin is required to manage GDM, care is transferred to an Obstetrician and your midwife will continue care with you in a supportive role.

What happens during and after the birth?

Your blood sugar levels will be monitored during the birth and your baby will be tested following the birth. Immediate and frequent breastfeeding is the best course for babies of GDM mothers. Occasionally, if the newborn's blood sugars are low, some formula may be recommended to stabilize them.

Women with GDM are at risk for developing Type 2 Diabetes later in life and should receive ongoing evaluation from their family physician. Follow up is recommended at 3 months postpartum. Women can discuss with their midwives healthy diet and lifestyle habits that may improve their risk factors for GDM and reduce the development of type II diabetes outside of pregnancy.