Clinical Guideline

DIABETES IN PREGNANCY (GESTATIONAL)

SETTING Women's & Children's Services/Maternity

FOR STAFF Midwifery, obstetric and diabetes teams

PATIENTS Pregnant women who develop diabetes during pregnancy

Introduction

Gestational diabetes is defined by the World Health Organization (WHO) as 'carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy'.

Women with gestational diabetes are at increased risk of having a macrosomic baby, trauma during birth to themselves and the baby, neonatal hypoglycaemia, perinatal death, induction of labour and caesarean section.

Risk assessment by community midwives

So that women can make an informed decision about risk assessment and testing for gestational diabetes, Community midwives must explain that:

- in some women, gestational diabetes will respond to changes in diet and exercise
- the majority of women will need oral blood glucose-lowering agents or insulin therapy if changes in diet and exercise do not control gestational diabetes effectively
- if gestational diabetes is not detected and controlled, there is a small increased risk of serious adverse birth complications such as shoulder dystocia
- a diagnosis of gestational diabetes will lead to increased monitoring, and may lead to increased interventions, during both pregnancy and labour.

At the booking visit, recommend testing for gestational diabetes to women with any of the following risk factors:

- Previous macrosomic baby weighing 4.5kg or more
- BMI above 30kg/m2 at booking
- Previous gestational diabetes
- Family history of diabetes in a first degree relative
- Minority ethnic origin with a high prevalence of diabetes (South Asian, Black Caribbean, Middle Eastern, Black African)

A GTT may be considered for women with multiple pregnancy, previous stillbirth, PCOS

Offer screening for gestational diabetes at any time during pregnancy if the woman has had no previous GTT and there is one or more of the following (if a normal GTT has been done at 28 weeks then do not repeat GTT but refer to any obstetric consultant for further management):

- >++ glycosuria on any 1 occasion or >+ glucose on two or more occasions
- Polyhydramnios confirmed by ultrasound

Abdominal Circumference or Estimated Fetal Weight >95 centile on USS**Diagnosis of gestational diabetes:**

Do not use fasting blood glucose, random blood glucose, HBA1C, glucose challenge test or urinalysis for glucose to assess the risk of developing gestational diabetes.*during the Covid-19 HBA1C and RBG/FBG was a temporary method of screening for GDM (see link for more detail https://www.rcog.org.uk/globalassets/documents/guidelines/2020-12-09-guidance-for-maternal-medicine-services-in-the-coronavirus-covid-19-pandemic.pdf.)

Use the 2-hour 75 g oral glucose tolerance test (OGTT) to test for gestational diabetes in women with risk factors

Offer women who have previously had gestational diabetes in a previous pregnancy either:

- 1 week early self-monitoring of blood glucose which can be arranged via the diabetes specialist midwife (community midwives do not need to teach monitoring but can refer to the diabetes specialist midwife)

or

- a 75 g 2-hour OGTT as soon as possible after booking (whether in the first or second trimester), which can be done in the community, and a further 75 g 2-hour OGTT at 24–28 weeks if the results of the first OGTT are normal.

Offer women with any of the other risk factors for gestational diabetes a 75 g 2-hour OGTT at 24–28 weeks.

Diagnose gestational diabetes if the woman has either:
- a fasting plasma glucose level of **5.6 mmol/litre** or above or
- a 2-hour plasma glucose level of **7.8 mmol/litre** or above.

Impaired glucose tolerance is no longer an accepted term.

On receipt of an abnormal OGTT:

Clinician requesting OGTT must make arrangements for follow up of result within one week of the test. This clinician is also responsible for informing the woman of an abnormal result prior to referral to Diabetes Specialist Midwife (DSM).

- Please refer any abnormal results to the diabetes specialist midwife by email, by completing and sending the referral form to [redacted] and [redacted] and cc'd to ubh-tr.st.michaels_antenatal_clinic@nhs.net

The Diabetes Specialist Midwife will offer women with a diagnosis of gestational diabetes a review with the diabetes specialist midwife within 1 week of the DSM receiving the referral, this will be arranged by the diabetes team once the referral has been received.

The Diabetes Specialist Midwife will inform the primary healthcare team when a woman is diagnosed with gestational diabetes (see also the NICE guideline on patient experience in adult NHS services in relation to continuity of care).

Antenatal care

The management of women with gestational diabetes must be given by a multidisciplinary team that includes:

- Diabetes specialist midwife
- Dietitian
- Obstetrician
- Diabetes specialist nurse (DSN)
- Endocrinologist

First hospital visit

Women diagnosed with gestational diabetes will be seen in the Gestational Diabetes clinic by the MDT.

Explain to women with gestational diabetes:
- about the implications (both short and long term) of the diagnosis for her and her baby
- that good blood glucose control throughout pregnancy will reduce the risk of fetal macrosomia, trauma during birth (for her and her baby), induction of labour and/or caesarean section, neonatal hypoglycaemia and perinatal death
- that treatment includes changes in diet and exercise, and could involve medicines.

Maternal	Fetal	Neonatal
Birth trauma Induction of labour or caesarean section Future risk of GDM (The probability of GDM for a woman who has had GDM in a previous pregnancy is 30–84%. Moreover, the probability of GDM given insulin-treated GDM in a previous pregnancy is approximately 75%.)	Fetal macrosomia	Birth trauma Transient neonatal morbidity Neonatal hypoglycaemia Perinatal death Obesity and/or diabetes developing later in life

Diabetes developing later in life		

- Teach women with gestational diabetes about self-monitoring of blood glucose.
- Use the same capillary plasma glucose target levels for women with gestational diabetes as for women with pre-existing diabetes in pregnancy.
- Tailor blood glucose-lowering therapy to the blood glucose profile and personal preferences of the woman with gestational diabetes.
- Advise women with gestational diabetes to eat a healthy diet during pregnancy, and emphasise that foods with a low glycaemic index should replace those with a high glycaemic index.
- Refer all women with gestational diabetes to a dietitian.
- Advise women with gestational diabetes to take regular exercise (such as walking for 30 minutes after a meal) to improve blood glucose control.

Treatment Options

- Offer a trial of changes in diet and exercise to women with gestational diabetes who have a fasting plasma glucose level below 7 mmol/litre at diagnosis.
- Offer metformin to women with gestational diabetes if blood glucose targets are not met using changes in diet and exercise within 1–2 weeks.
- Offer insulin instead of metformin to women with gestational diabetes if metformin is contraindicated or unacceptable to the woman.
- Offer addition of insulin to the treatments of changes in diet, exercise and metformin for women with gestational diabetes if blood glucose targets are not met.
- Offer immediate treatment with insulin, with or without metformin, as well as changes in diet and exercise, to women with gestational diabetes who have a fasting plasma glucose level of 7.0 mmol/litre or above at diagnosis.
- Consider immediate treatment with insulin, with or without metformin, as well as changes in diet and exercise, for women with gestational diabetes who have a fasting plasma glucose level of between 6.0 and 6.9 mmol/litre if there are complications such as macrosomia or polyhydramnios.

Monitoring Blood Glucose

- Advise pregnant women with gestational diabetes to test their fasting and 1-hour post-meal blood glucose levels daily during pregnancy if they are:
  - on diet and exercise therapy or
  - taking oral therapy (with or without diet and exercise therapy) or single-dose intermediate-acting or long-acting insulin.

Advise pregnant women with gestational diabetes who are on a multiple daily insulin injection regimen to test their fasting, pre-meal, 1-hour post-meal and bedtime blood glucose levels daily during pregnancy.

- Agree individualised targets for self-monitoring of blood glucose with women with diabetes in pregnancy, taking into account the risk of hypoglycaemia.

- Advise pregnant women with any form of diabetes to maintain their capillary plasma glucose below the following target levels, if these are achievable without causing problematic hypoglycaemia:

  • fasting: 5.3 mmol/litre

  and

  • 1 hour after meals: 7.8 mmol/litre

- Advise pregnant women with diabetes who are on insulin or Glibenclamide to maintain their capillary plasma glucose level above 4 mmol/litre.

Investigations

- Measure HbA1c levels in all women with gestational diabetes at their first clinic appointment to identify those who may have pre-existing type 2 diabetes.

- Arrange growth scan if 28 weeks gestation or more and has not had scan within previous 2 weeks. Then scan every at least every 4 weeks, or more frequently if clinical concerns.

Documentation

It is important that there is an individual management plan for the pregnancy, delivery and postnatal period (up to 6 weeks). The management plan will consider the increased risk of macrosomia, shoulder dystocia and increased perinatal morbidity.

Targets for glycaemic control:

The recommended level is a blood glucose 3.5 – 5.3 mmol/l if on dietary treatment or on Metformin, and 4-5.3mmol/l if on insulin before meals & <7.8 mmol/l 1 hour after meals

Glycaemic control issues can be managed by DSM or DSN (review by phone/in DSN/DSM clinic as frequently as needed.

Planning for birth

Advise women with uncomplicated gestational diabetes to give birth no later than 40^{+6} weeks, and offer elective birth (by induction of labour, or by caesarean section if indicated) to women who have not given birth by this time. Induction of labour should start by latest 40+3 to ensure delivery by 40+6 weeks.

Consider elective birth before 40^{+6} weeks for women with gestational diabetes if there are maternal or fetal complications e.g. blood sugar readings above target, diabetes needing medical treatment with insulin or metformin, macrosomic or growth restricted fetus, or other obstetric indications.
Explain to pregnant women with diabetes who have an ultrasound-diagnosed macrosomic fetus about the risks and benefits of vaginal birth, induction of labour and caesarean section.

Discuss management of blood glucose levels after delivery and care of the baby:

- Discuss changes to hypoglycaemic therapy during birth & document in notes.
- Discuss discontinuation of hypoglycaemic therapy after delivery
- Discuss initiation of breastfeeding
- Offer information about initial care of baby & risk of neonatal hypoglycaemia
- Discuss St Michael's Hospital policy for at risk infants
- Advice with regard to fetal movements, intrapartum and postnatal care including hand expression
- Give information about contraception and follow up with GP
- Ensure postnatal plan for diabetes management is documented in patient's notes

Care beyond 38 weeks of not delivered

- Consider weekly tests of fetal well-being from 38 weeks for women awaiting spontaneous labour, with review by medical staff (ST6 or above). e.g. AFI, doppler, computerised CTG (Do not routinely offer tests of fetal well-being before 38 weeks unless there is a risk of intrauterine growth restriction (IUGR) or other indication)
- At every visit reassess the appropriateness of continuation of the pregnancy vs. delivery.
- Offer stretch and sweep if indicated, this can be done in the community or hospital setting from 38 weeks, or earlier if sanctioned by a consultant.

Intrapartum care: See Diabetes in pregnancy Intrapartum Guideline

Postnatal care (up to 6 weeks)

Advise women with diabetes to give birth in hospitals where advanced neonatal resuscitation skills are available 24 hours a day.

Babies of women with diabetes should stay with their mothers unless there is a clinical complication or there are abnormal clinical signs that warrant admission for intensive or special care.

Refer to Neonatal hypoglycaemia guideline for management of babies born to mothers with diabetes.

Women who have been diagnosed with gestational diabetes should discontinue blood glucose-lowering therapy immediately after birth.Test blood glucose in women (for 24 hours) who were diagnosed with gestational diabetes to exclude persisting hyperglycaemia before they are transferred to community care.

Remind women who were diagnosed with gestational diabetes of the symptoms of hyperglycaemia.

Explain to women who were diagnosed with gestational diabetes about the risks of gestational diabetes

in future pregnancies, and offer them testing for diabetes when planning future pregnancies.

For women who were diagnosed with gestational diabetes and whose blood glucose levels returned to normal after the birth:

- Offer lifestyle advice (including weight control, diet and exercise).
- Offer a **fasting plasma glucose test** 6–13 weeks after the birth to exclude diabetes (for practical reasons this might take place at the 6-week postnatal check).
- If a fasting plasma glucose test has not been performed by 13 weeks, offer a fasting plasma glucose test, or an HbA1c test if a fasting plasma glucose test is not possible, after 13 weeks.
- Do not routinely offer a 75 g 2-hour OGTT.

Offer an annual HbA1c test to women who were diagnosed with gestational diabetes who have a negative postnatal test for diabetes.

Women who have had GDM should be offered early screening in any subsequent pregnancies, as soon as possible after booking with a community midwife. This can be by OGTT (to be repeated at 24-28/40 if normal), or by referring to the diabetes specialist midwife for self-monitoring of blood glucose

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Ratified by Antenatal working party

RELATED DOCUMENTS

SAFETY

QUERIES [redacted]