UPDATE ON DIABETES IN PREGNANCY

24/3/17

PRE EXISTING DIABETES- MEASURING AGAINST THE NICE GUIDELINE

The NPID audit measures the quality of care using national standards set out in NICE guideline NG31 including:

Prior to pregnancy

- use of folic acid supplement prior to pregnancy
- keeping HbA1c below 48 mmol/mol where achievable without causing problematic hypoglycaemia
- substitution of oral glucose-lowering medications apart from metformin
- suspension of statins and ACE inhibitors/ARBs

During pregnancy

- early first contact with joint diabetes and antenatal clinic
- monitoring HbA1c to assess level of pregnancy risk
- retinal screening

Birth and neonatal care

- elective birth and timing of birth
- keeping babies with their mothers unless clinical need for intensive, high dependency or special care

KEY FINDINGS

- In 2015, 3,044 pregnancies in 3,036 women with diabetes were recorded by 155 antenatal diabetes services.
- 46 per cent (1,386 women) had Type 2 diabetes (over 50 per cent in some regions, and over 70 per cent among some ethnic groups). Women with Type 2 diabetes tended to be older, and more likely to live in areas of social deprivation.
- There is large variation between services/localities in meeting the NICE guideline recommendations for
  - pregnancy preparation
  - first contact with the antenatal diabetes team
  - minimising admissions to a neonatal unit

Few women were prepared for pregnancy in the ways recommended in the NICE guideline:

- Only 16 per cent of women with Type 1 diabetes and 38 per cent of women with Type 2 diabetes had first trimester HbA1c <48 mmol/mol.
- 46 per cent of women with Type 1 diabetes and 23 per cent of women with Type 2 diabetes were taking 5mg folic acid prior to pregnancy.
- Women with Type 1 diabetes from deprived areas were much less likely to be taking 5mg folic acid or have first trimester HbA1c < 48 mmol/mol.

[Be aware that level of risk for the pregnancy for women with pre-existing diabetes increases with an HbA1c level above 48 mmol/mol (6.5%)]. [new 2015]

The majority of women did not have contact with the antenatal diabetes team before they were 8 weeks pregnant:

- Only 36 per cent of women with Type 2 diabetes and 55 per cent of women with Type 1 diabetes had contact in the first 8 weeks of pregnancy.

Hypoglycaemia during pregnancy:

- Almost 1 in 10 women with Type 1 diabetes had at least one admission to hospital with recorded hypoglycaemia during their pregnancy.

The majority of births were by caesarean section:

- 66 per cent of women with Type 1 diabetes and 56 per cent of women with Type 2 diabetes had a birth by caesarean section (elective or emergency).

There was a modest reduction in adverse pregnancy outcomes:

- The stillbirth rate has reduced significantly since the 2002-03 CEMACH Study for women with Type 1 and Type 2 diabetes (10.7 and 10.5 per 1,000 respectively), although it is still higher than in the general population (4.7 per 1,000 live and stillbirths).

However, preterm delivery and large for gestational age babies were common and the admission rate to neonatal units was high:

- 40 per cent of singleton births to women with Type 1 diabetes and 22 per cent of births to women with Type 2 diabetes were preterm (before 37+0 weeks).
- Preterm delivery, babies large for gestational age and admission to a neonatal unit were more common for women who had HbA1c at 24 weeks above 48 mmol/mol.

RECOMMENDATIONS
DIABETES AND MATERNITY SERVICES

A collaborative approach by diabetes and maternity services is needed to improve pregnancy outcomes in women with diabetes by:

Improving preparation for pregnancy:

– promoting access to pregnancy preparation advice

– tailoring approach to offer women the right information at the right time

– informing women about the importance of, and options for, safe effective contraception

Improving early contact with specialist support:

– creating clear pathways for rapid referral to specialist teams, and publicising these to primary care and family planning services

Improving achievement of safe glucose control in pregnancy:

– focussing on proactive glucose management in pregnancy

RECOMMENDATIONS - CORE DIABETES CARE SERVICES

Primary care, family planning and community teams are recommended to:

– develop a clear plan for all women with diabetes to ensure awareness of the value of pregnancy preparation and the importance of safe effective contraception (including identification from primary care registers and discussion of pregnancy as a part of care planning/annual review)

– maintain a clear understanding of how to use referral pathways for specialist support

Specialist diabetes services are recommended to:

– routinely discuss pregnancy with all appropriate women

– access, where needed, new technologies to support glucose management

– lead or to identify leadership for quality improvement in antenatal diabetes care

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GESTATIONAL DIABETES NICE 2015

So that women can make an informed decision about risk assessment and testing for gestational diabetes, 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. [new 2015]

ASSESS RISK OF GESTATIONAL DIABETES USING RISK FACTORS IN A HEALTHY POPULATION. AT THE BOOKING APPOINTMENT, DETERMINE THE FOLLOWING RISK FACTORS FOR GESTATIONAL DIABETES

- BMI above 30 kg/m2
- previous macrosomic baby weighing 4.5 kg or above
- previous gestational diabetes
- family history of diabetes (first-degree relative with diabetes)
- minority ethnic family origin with a high prevalence of diabetes.

Do not use fasting plasma glucose, random blood glucose, HbA1c, glucose challenge test or urinalysis for glucose to assess risk of developing gestational diabetes. [2015]

TESTING

Use the 2-hour 75 g oral glucose tolerance test (OGTT) to test for gestational diabetes in women with risk factors (see recommendation 1.2.2). [2015]

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

- early self-monitoring of blood glucose or
- a 75 g 2-hour OGTT as soon as possible after booking (whether in the first or second trimester), and a further 75 g 2-hour OGTT at 24–28 weeks if the results of the first OGTT are normal. [new 2015]

Offer women with any of the other risk factors for gestational diabetes (see recommendation 1.2.2) a 75 g 2-hour OGTT at 24–28 weeks. [2015]

GESTATIONAL DIABETES NICE 2015

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. [new 2015]

Interventions

- 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.

Teach women with gestational diabetes about self-monitoring of blood glucose. [2015]

- Use the same capillary plasma glucose target levels for women with gestational diabetes as for women with pre-existing diabetes
- Tailor blood glucose-lowering therapy to the blood glucose profile and personal preferences of the woman with gestational diabetes. [new 2015]
- Offer women advice about changes in diet and exercise at the time of diagnosis of gestational diabetes. [new 2015]
- 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. [new 2015]
- Refer all women with gestational diabetes to a dietitian. [new 2015]
- Advise women with gestational diabetes to take regular exercise (such as walking for 30 minutes after a meal) to improve blood glucose control. [new 2015]

- 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. [new 2015]
- Offer metformin to women with gestational diabetes if blood glucose target are not met using changes in diet and exercise within 1–2 weeks. [new 2015]
- Offer insulin instead of metformin to women with gestational diabetes if metformin is contraindicated or unacceptable to the woman. [new 2015]
- 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. [new 2015]
- Offer immediate treatment with insulin, with or without metformin[2], 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. [new 2015]

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 hydramnios. [new 2015].

Consider glibenclamide for women with gestational diabetes:

-in whom blood glucose targets are not achieved with metformin but who decline insulin therapy or

-who cannot tolerate metformin. [new 2015]

POSTNATAL TREATMENT FOR WOMEN DIAGNOSED WITH GESTATIONAL DIABETES

Gestational diabetes is one of the strongest risk factors for the subsequent development of type 2 diabetes: up to 50% of women diagnosed with gestational diabetes develop type 2 diabetes within 5 years of the birth. There are some data suggesting that changes in diet and exercise, with or without metformin, can prevent type 2 diabetes developing in non-pregnant middle-aged people with glucose intolerance, but there are no studies specifically in women with a past history of gestational diabetes. There is thus an urgent need to investigate what interventions may delay or prevent type 2 diabetes developing in this high-risk population of women. Undertaking a formal randomised controlled trial involving long-term outcomes is often not feasible in practice. However, it would be possible to have a quasi-randomised study comparing 2 populations of women with similar demographic profiles who had gestational diabetes. One population would be encouraged at their annual check to follow a specific diet and exercise regime and those in the other population would not. The incidence of the development of type 2 diabetes in the 2 groups at 5, 10 and 20 years would be compared.