What’s New 2015? NICE Guidance, Referral Pathway for Endocrine and Diabetes: Preconception and Antenatal Care

GP Awareness 2015
Endocrine and Diabetes
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Outline

• Why this talk
• Recommended referral pathway
• Evidence why
• Cases
• New NICE changes
Question

• How do you currently refer your pre-conception patients?
  • A. Don’t – seen by practice nurse
  • B. Call the diabetes centre
  • C. Choose and book.
  • D. Urgent fax or call to DC or joint ANC.
  • E. Other - state
PATHWAY FOR THE PRE-CONCEPTUAL CARE OF WOMEN WITH DIABETES

All women of child bearing age with Type 1 and Type 2 diabetes and women who have had previous gestational diabetes

Discuss pre-conception, contraception and the importance of planning a pregnancy at each contact

Planning a pregnancy

No/not yet

Give first line initial advice whether planning a pregnancy or not including contraception advice

Yes

Unplanned Pregnancy

If unplanned pregnancies refer direct to diabetes specialist team as soon as pregnancy confirmed either by Fax or telephone referral

PGH: 01924 213904
Fax: 01924 214 977

PGI: 01977 747930
Fax: 01977 747921

Refer to specialist diabetes pre-conception joint clinic
One to one consultation

Ensure good glycaemic control for at least 3 months prior to becoming pregnant

- Medication review – stop all statins and ace inhibitor therapy
- Ensure dietetic review
- Optimisation of HbA1c of < 42mmo/mol through intensive insulin therapy and the agreement of monthly monitoring
- Optimisation of blood pressure <130/80mmHg
- Lifestyle advice including: smoking cessation, alcohol and substance misuse
- Check rubella status
- Prescribe folic acid 5mgs during pre-conception and continue until after the first trimester
- Intensive education including the management of hypoglycaemia – DAFNE for people with Type 1 diabetes
- Screen for diabetic complications
- Check for TSH if known underlying thyroid disease
  - Retinal screening if not carried out within the previous 6 months
  - Renal assessment
- Ketone monitoring for those with pre-existing diabetes
- Metformin can be continued during pregnancy

When pregnancy discovered refer to Diabetes Specialist team directly either by Fax or telephone referral as soon as pregnancy is confirmed
Why give you this talk?

• CEMACH-Confidential Enquiry into Maternal and Child Health
  - key finding and Diabetes recommendation
• Commissioners of services must ensure that all women with diabetes are provided with specialist preconception services with access to all members of the specialist MDT
• NICE guidance preconception awareness starting from adolescence “Health care professionals should give information (and document this) on the benefits of preconception glycaemic control at each contact”
• CEMACH 2007 521 preg
• Key findings
• CMF increased 2 fold
• Still birth 4 fold
• Perinatal mortality 4 fold
• Poor in T2DM and T1DM
• HbA1C most sig risk factor
• 73 % suboptimal care pre-con 5 fold risk poor preg
• Especially true for type 2 DM
• Only 35 % received any
• NPID
A: Risk of a major or minor congenital anomaly according to the number of SDs of GHb above normal, measured periconceptionally.

Andrea Guerin et al. Dia Care 2007;30:1920-1925
Jensen DM Diabetes Care 2009-933
women with type 1

<table>
<thead>
<tr>
<th>HbA1c</th>
<th>Cong Mal %</th>
<th>Perinatal mort %</th>
<th>Serious adverse outcome</th>
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<td>&gt;10.4</td>
<td>10.9</td>
<td>5.5</td>
<td>16.3</td>
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<tr>
<td>7.9-8.8</td>
<td>5.0</td>
<td>3.3</td>
<td>7</td>
</tr>
<tr>
<td>6.9-7.8</td>
<td>4.9</td>
<td>2.6</td>
<td>7.7</td>
</tr>
<tr>
<td>&lt;6.9</td>
<td>3.9</td>
<td>2.1</td>
<td>5.6</td>
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<tr>
<td>Background pop</td>
<td>2.8</td>
<td>0.75</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Cost Effectiveness of Pre-Conception Care

- Herman WH J Repro Med 1999
- $5 per $1 spent in USA
- Pre-con cost effective in terms of complication management eg cost fetal cardiac echo at a specialist centre
Starting from adolescence

• Record pregnancy intentions and contraceptive use at each contact
• Avoidance of unplanned pregnancy
• Avoid altogether if HBA1C 10% (Cong mal risk 10 %)
• OFFER women seeking pregnancy specialist preconception advice including: structured education, dietary, body weight, exercise advice
Pre-conception care

- Hba1C < 6.1 %
- Self monitoring
- Monthly Hba1C
- Close FU and active advise
- Managing pregnancy related nausea and vomiting- avoid ketosis and hyperglycaemia at all costs
- Hypo and hypo awareness management
- Medication review and safety
- Assessment of complications
- BP, renal, retinopathy, hypo unawareness, autonomic neuropathy
- Smoking and alcohol
- 5mg Folic Acid
- Vitamin D
Whats the data? Effectiveness of Pre-con Care

• UK study 680 women
• Decrease in stillbirth, neonatal death and malformation 7.8 to 1.3 %
• Benefits are beyond improved glycaemic control, stronger predictor of adverse pregnancy outcome than obesity, ethnicity or social disadvantage
• Murphy, H et al Diabetes Care 2010
Contemporary challenges

• T2DM
• Obesity
• GDM
• Bariatric surgery
SAFER leaflet

- S Stop
- A is HbA1C
- F Folic acid dose
- E Enjoy planning your pregnancy
- R Referral Early to specialist care
To set the scene: Case 1

33 year old female
Presented at 28/40 gestation April 2013
Joint ANC at PGH
Roux en y gastric bypass April 2012
History of Retinopathy
Hypertension
Weight 102 kg
BP144/91
Elective section 11/7/12
Interactive Question:

• What test would you offer this lady- the midwife tells you the BMI >30?
• A. OGTT at 28 weeks
• B. Nothing the surgeon has cured her with the gastric bypass surgery
• C. HbA1C
• D. BM monitoring
• E. All of the above
Remaining History

- Type 2 DM 2005
- April 2011 Weight was 144.5 kg BMI 55.6
- Weight loss programme with Dr R
- By July 2011 Lost 10 kg on Liraglutide (Victoza)
- Was 133.5kg BMI 40
- Reviewed by dieticians, psychologist etc
- 16/1/2012 Roux-En-Y Mr J
- 1/12/2012 DDH EPU
When is the recommended time to conceive after bariatric surgery?

• A. 3 months
• B. 6 months
• C. 12 months
• D. 18 months
• E. 24 months
<table>
<thead>
<tr>
<th>Date</th>
<th>HbA1C in mmol/mol</th>
<th>BMI</th>
<th>Clinical Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/10/10</td>
<td>114 or 12.6 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19/11/10</td>
<td>120 or 13.1 %</td>
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<td></td>
</tr>
<tr>
<td>28/01/11</td>
<td>68 or 8.4 %</td>
<td>52.6</td>
<td>Bilateral macular laser</td>
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<tr>
<td>4/7/11</td>
<td></td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>19/3/12</td>
<td>114 or 12.6 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25/4/12</td>
<td></td>
<td></td>
<td>Roux-En-Y laparoscopically</td>
</tr>
<tr>
<td>1/10/12</td>
<td>64 or 8 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/12/12</td>
<td></td>
<td></td>
<td>Pregnant</td>
</tr>
<tr>
<td>16/4/13</td>
<td>36</td>
<td></td>
<td>Attends ANC</td>
</tr>
<tr>
<td>4/6/13</td>
<td>62 or 7.8 %</td>
<td></td>
<td>Bilateral pan retina laser</td>
</tr>
</tbody>
</table>
Contacts with health professionals

- Midwife
- SpR DDH
- GP
- ANC PGH
- At 28 weeks
Medications

- Adcal D3
- Sanatogen A-Z od- too much Vit A
- B12 injection 3 monthly
- Zinc supplements

Pregnacare

Folic Acid dose

Monitoring
First contact with antenatal team

• 16/4/13
• Joint antenatal clinic
• HBA1C requested
• Monitoring commenced
• Urgent retinal examination arranged
• ACR reviewed
• Mode of delivery discussed
Urgent appointment with Eye team

• Known bilateral diabetic macular oedema
• Laser performed 31/1/2011
• Bilateral modified macular grid laser treatment
• Underwent pan retinal grid laser therapy Jun 2013 when pregnant
Issues arising from the case

• These patients need specialist review
• If no pre-existing DM need to know surgery to decide on GDM screening test
• AJOG combination
• Micronutrients without Vit A
• Folic Aid dose
• Terminology essential
Gestational Syndromes

- Pre-Eclampsia
- Gestational Diabetes
- Obstetric cholestatis
- Transient Diabetes Insipidus
- Lipid disorders
- Postnatal depression
- Postpartum thyroiditis
- Postnatal autoimmune disease
- Paternal Disease
Diabetes

- Approx 700,000 women give birth each year
- 5 % involve diabetes
- Majority 87.5 % GDM which may or may not resolve after pregnancy
- 7.5 % Type 1 DM
- 5 % Type 2 DM
- Prevalence has increased as higher rates of obesity and older women
NICE : Reason for Update

• Landmark Study
• Hyperglycaemia and Adverse Pregnancy Outcomes Study
• Consensus resulted adoption by the WHO
• More women as a result being diagnosed
• Cost-benefit analysis
Also reviewed

• Technologies for monitoring blood glucose
• The role of HbA1C
• The role of the specialist MDT
• Blood glucose targets before and during pregnancy, best timing for diagnosing continued glucose intolerance in women after birth
• Patient centred care
Preconception planning and care

• Advise women with diabetes who are planning to become pregnant to aim for the same capillary plasma glucose target ranges as recommended for all people with type 1. [New 2015]
Diagnosis of Gestational Diabetes

- If the women has EITHER
- A fasting plasma glucose level of 5.6 mmol/mol/l or above or
- A 2 hour plasma glucose level of 7.8 mmol/l or above [New 2015]
Antenatal Care for Women with Diabetes

• Advise pregnant women with ANY form of diabetes to maintain their blood 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 or
  • 2 hours after meals 6.4 mmol/litre [New 2015]
• To test urgently for ketonaemia with any form of diabetes if unwell or hyperglycaemia and to exclude DKA
• Specific antenatal care should be provided for women with diabetes [Amended 2015]
Pre-conception care

- MDT approach
- Consultant Diabetologist and Obstetrician
- Midwife, DSN, Specialist dietician
- All most senior team
- Optimisation
- Drug review
- Risk
Booking Schedule

- **PRECONCEPTION CARE!!!!**
- **Joint ANC by 10 weeks**
- Continue advice regarding diet, blood glucose monitoring and targets
- If she has not attended for precon: history, complications-neuropathy, vascular disease, retinopathy, DH review, offer retinal screening if none
- Review 1-2 weekly
- Measure HbA1C to determine level of risk for the pregnancy
- Offer self monitoring or 75 g 2 hour OGTT as soon as possible for those with a history of GDM.
- Confirm viability and gestational age at 7-9 weeks
16 Weeks

• Offer retinal screening at 16-20 weeks if retinopathy present at first ANC visit
• Offer self monitoring or 75 g 2 hour OGTT to those previous GDM that book in the second trimester
• 20 weeks
• USS to detect fetal abnormalities including fetal heart
28 weeks

- USS fetal growth and amniotic fluid volume
- Offer retinal screening
- Women diagnosed at 24-28 weeks diagnosed with GDM enter the pathway
- 32 weeks growth scans and routine investigations offered to nulliparous women
- 34
- 36 USS timing mode of delivery management of birth, analgesia, anaesthesia, changes to blood glucose-lowering therapy during and after birth, care of the baby after birth, initiation of breast feeding and effect on blood sugars
- Contraception and follow up
37-38+6 weeks

- Offer IOL, or CS if indicated in type 1 or 2 women, or await spontaneous labour [New 2015]
- 38 offer fetal wellbeing tests
- 39 offer fetal wellbeing tests
- Advise uncomplicated GDM not to delay later than 40 + 6 weeks [New 2015]
Blood glucose during labour and birth

- In diabetes maintain 4-7 mmol/litre
- Type 1 insulin infusion
Post Natal Care

• Offer lifestyle advice (weight control, diet and exercise)
• Offer FBG 6-13 weeks post partum (practically 6 week check)
• If not performed offer FBG or HBA1C after
• Do not routinely offer 75 OGGT [New 2015]
Recommendations

- Pre-existing diabetes referred back to routine care
- Reminder of pre-conception care
- GDM risks and testing for future pregnancies-planning
- FBG at 6 weeks
- Or HBA1c if not done by 13 weeks post partum
GDM- post partum 6 week

• FBG < 6.0 mmol/l
• Continue lifestyle advice
• Annual FBG
• Moderate risk of type 2
• 6.0-6.9 HIGH risk of developing type 2
• If FBG >/= 7.0 mmol/l likely to have type 2 dm-confirm test [New 2015]
• If they have an HbA1C <39 mmol/mol or 5.7 %
< 39 MMOL/MOL

- Low prob dev type 2 DM
- Continue lifestyle advice and annual check
- Moderate risk
- 39-47 at high risk (5.7-6.4 %)
- 48/6.5 % Type 2DM
- Annual HbA1C all GDM [new 2015]
- Early testing for all GDms in subsequent pregnancies
Renal Recommendations

- Refer if ACR >30mg/mmol or EGFR <45 ml/min/1.73m
- Serum Cr 120 umol/l
- Need referral pre discontinuation of contraception
Risks

Mother
• Miscarriage
• Pre-Eclampsia
• Pre-term labour
• Worsening retinopathy

Fetus
• Stillbirth
• Congenital malformations
• Macrosomia
• Birth injury
• Perinatal mortality
• Post natal adaption problems
Priorities

• Pre-conception care
• Antenatal care
• New targets
• FBG post prandial
• Neonatal care
• Postnatal care
• GDM – lifestyle, FBG at 6 weeks post partum and annually thereafter
End

• Questions?
Studies and Controversies

Hyperglycaemia and pregnancy outcomes study (HAPO May 2008)

- Over 23000 women
- Risk of adverse outcomes with degrees of Glc intolerance
- 7 groups of glucose categories (1 lowest 7 highest)
- Frequency of primary outcomes see graphs
- No treatment arm

International Assoc of Diab and Preg Study Groups

- Recommendations for diagnosis GDM
Effective treatment for gestational diabetes?

- Studies
- ACHOIS – Australian Carbohydrate Intolerance study in Pregnant Women - Double blind study to see treatment reduced perinatal complications NEJM 2005 Treatment arm reduced perinatal morbidity
- MFMUN- trials- Maternal fetal medicine units network trial- Randomised double blind trial if mild GDM treatment improves outcome
Cost

- Insulin analogue
- Glibenclamide
- Metformin

- Sheffield data
- 2005
  - 100 GDM
- 2008
  - 244 GDM
  - Rate 34/1000 births

- 2012
  - 315 GDM
  - Rate 44/1000 births

- £96
- £16.32
- £11.68