CLINICAL GUIDELINE

Diabetes, Women Requiring Insulin, Diabetes Management, Labour and Delivery

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Approval Group:	Obstetrics Clinical Governance Group

Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Greater Glasgow & Clyde Obstetric Guidelines
Labour and Delivery: Management of women requiring insulin in pregnancy

GENERAL MANAGEMENT

All women will be fasted during labour
Avoid Hartmann's intravenous solution

****DURING LABOUR TARGET CAPILLARY BLOOD GLUCOSE LEVEL IS 4-7MMOL/L****

SPONTANEOUS LABOUR

- Routine admission to labour ward
- Check capillary Blood Glucose (BM)
- Inform Middle grade doctor who will discuss care with Consultant if obstetric concerns.
- Site and date two venflons, the first to be used for the insulin infusion & the dextrose infusion via a non-return valve. The second to ensure secure IV access.
- Take bloods - Group & Save, FBC & UE's.
- Continuous EFM monitoring
- Inform On Call Paediatrician and Anaesthetist

COMMENCE SLIDING SCALE (TYPE 1 AND GESTATIONAL DIABETES MANAGED WITH INSULIN IN PREGNANCY)

- Commence infusion of 1000 ml of 5% Dextrose (Glucose) with 20 mmols (0.15%) Potassium Chloride (KCL), at 100 mls/hr.
- Commence Insulin Infusion using syringe pump
- 50 units Actrapid Insulin made up to a total volume of 50mls with Sodium Chloride 0.9%
- The rate of Insulin is titrated against BM (see below and Table 1 or Table 2 if subcutaneous insulin in last 4 hours)
- Check BM hourly. Aim to maintain levels between 4.0 – 7.0mmol/l
- Recordings documented on Insulin Sliding Scale Prescription & Recording Chart
- Test all urine for ketones. If > 2+ change to 500ml infusion bags of 10% Dextrose (Glucose) with 10mmol (0.15%) Potassium Chloride at 100mls/hr.

DELIVERY & 3RD STAGE

- Experienced personnel should be available for the management of the second & third stage of labour in a diabetic pregnancy with suspected macrosomia.

POST DELIVERY

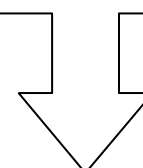
After delivery women with diabetes require greatly reduced insulin doses

- Immediately after delivery of placenta stop insulin and dextrose infusions. Infusion should stay in place until main meal ready to be taken. Mother may be given tea and snack while infusion in place but not running.
- Baby assessed by paediatrician

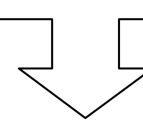
IF WOMAN REQUIRED INSULIN BEFORE PREGNANCY

- **Recommence subcutaneous insulin at a dose of 50% usual pre-pregnancy dose with the first normal meal** (as indicated in postnatal insulin regimen plan in notes).
- Check BM's before subsequent meals and continue to give 50% pre-pregnancy subcutaneous. insulin with each meal for at least the first 24 hours. Half of the evening pre-pregnancy dose of long acting insulin should also be given.
- If breast feeding will require increased carbohydrate (with advice from dietician) and potentially less insulin aiming for a pre-meal BM of 7-12 mmols/l
- If BM > 12mmols /L and not eating normally recommence IV Dextrose & Insulin at reduced doses (Table 2)
- If hypoglycaemia occurs reduce insulin further from pre-pregnancy dosages.
- Liaise with Diabetic team.
- After the first 24 hours insulin requirement may increase towards normal pre-pregnancy doses.

INFORM MIDDLE GRADE OBSTETRICIAN
FAST DURING LABOUR
SITE AND DATE 2 VENFLONS
TAKE BLOODS
CONTINUOUS EFM

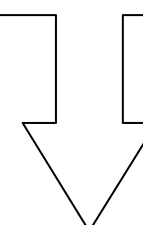


COMMENCE SLIDING SCALE WHEN LABOUR IS ESTABLISHED



<u>POST DELIVERY PLAN</u>
STOP SLIDING SCALE AFTER DELIVERY OF PLACENTA

RECOMMENCE HALF PRE-PREGNANCY S/C INSULIN WITH FIRST NORMAL POST DELIVERY MEAL



IF THE WOMAN HAS GESTATIONAL DIABETES

- Check BM's before meals for the first 24 hours. If any BMs> 6mmol/L inform diabetes team next working day. (If any BMs >12 recommence sliding scale at lower doses as above Table 2)
- Arrange OGTT or fasting glucose at 6/52 post partum
- Consultant will inform patient and GP re OGTT results (usually by letter).

INDUCTION OF LABOUR

- Admit to ward evening prior to induction
- Each woman should have individualised plan of care regarding insulin and prostin doses
- Take bloods Group & Save, FBC & UE's.
- Give evening prostin if prescribed
- Give usual evening dose of long acting insulin if Insulatard/Humulin I,* **but only give 70% usual insulin if Lantus/Levemir***

- **Reassess cervix at 0600- 07.00**

- **<u>If cervix favourable for ARM Transfer labour ward circa 0730</u>**
- Site and date 2 Venflons (16g)
- No morning insulin to be given
- **Check BM and commence sliding scale at 0800 (labour ward)**
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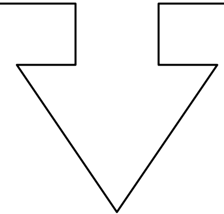
- <u>**If morning prostin required** may have tea & toast/breakfast</u>.
- **Follow insulin prescription sheet for insulin dose with breakfast or sliding scale as indicated**
- **If no breakfast insulin plan available commence sliding scale**
- Adjust sliding scale as needed to cover insulin requirements.
- Care in labour as detailed for spontaneous labour (above)
- Post delivery: follow same regimen as outlined for spontaneous labour (above)

ELECTIVE CAESAREAN SECTION

- Admit to ward the previous evening
- Each woman should have individualised plan of care regarding insulin doses
- Take bloods Group & Save, FBC & UE's.
- Give usual evening dose of long acting insulin if Insulatard/Humulin I,* **but only give 70% usual insulin if Lantus/Levemir***
- Fast from 12 midnight
- **Transfer to labour ward 0730**
- Site 2 Venflons (16g)
- No morning insulin to be given
- **Check BM and commence sliding scale at 0800 (labour ward)**
- Post delivery: follow same regimen as outlined for spontaneous labour (above)

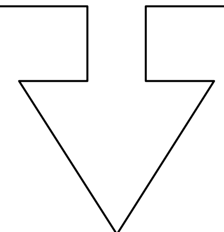
<u>IOL /PROSTIN INDUCTION</u>
ADMIT TO WARD EVENING PRIOR

TAKE BLOODS
PROSTIN AS PRESCRIBED
USUAL EVENING DOSE OF INSULIN (REDUCED TO 70% IF LANTUS OR LEVEMIR)
REASSESS 0600-0700
COMMENCE SLIDING SCALE BY 0800 IF ABLE TO ARM UNLESS ALTERNATIVE PLAN



POST DELIVERY PLAN (AS ABOVE)

<u>ELECTIVE CAESAREAN SECTION</u>
INDIVIDUALISED CARE PLAN
TAKE BLOODS
USUAL EVENING DOSE OF INSULIN (REDUCED TO 70% IF LANTUS OR LEVEMIR)
FAST FROM MIDNIGHT
CHECK BM 0730
SITE 2 VENFLONS
0800 COMMENCE SLIDING SCALE



POST DELIVERY PLAN (AS ABOVE)

SLIDING SCALE-

- Commence infusion of 1000 ml 5% Dextrose (Glucose) with 20 mmols (0.15%) Potassium Chloride (KCL), at 100 mls/hr.
- **Check BM hourly and adjust Insulin infusion rate according to BM**

Table 1 : Sliding scale for Diabetes in Labour

Capillary Blood glucose	**Insulin (Units per hour=ml per hour)**	**Revision of sliding scale if required**	**Revision of sliding scale if required**
0.0-4.0	**STOP INSULIN This is a hypo: assess patient and treat**		
4.1-7.0	1		
7.1-10.0	2		
10.1-14.0	3		
> 14.0	6		
	SIGNED	SIGNED	SIGNED
	Date/ Time	**Date/ Time**	**Date/ Time**
Target	Target **Capillary Blood glucose is 4-7 in labour**		
Action/revision	*If **Capillary Blood glucose >** 7 mmol/l for 2 consecutive hours despite sliding scale contact medical staff for revision of sliding scale.*		

Table 2 : Sliding scale for Diabetes in Labour if subcutaneous insulin has been taken less than 4 hours previously OR postpartum (NB need for sliding scale post partum is unusual)

Capillary Blood glucose	**Insulin (Units per hour=ml per hour)**	**Revision of sliding scale if required**	**Revision of sliding scale if required**
0.0-4.0	**STOP INSULIN This is a hypo: assess patient and treat**		
4.1-7.0	0		
7.1-10.0	1		
10.1-14.0	2		
> 14.0	3		
	SIGNED	SIGNED	SIGNED
	Date/ Time	**Date/ Time**	**Date/ Time**
Target	Target **Capillary Blood glucose is 4-7 in labour, 7-10 post partum**		
Action/revision	*During labour: If **Capillary Blood glucose >** 7 mmol/l for 2 consecutive hours despite sliding scale contact medical staff for revision of sliding scale.* *Postpartum: If **Capillary Blood glucose >** 14 mmol/l for 2 consecutive hours despite sliding scale contact medical staff for revision of sliding scale.*		

Authors GG&C Diabetes Pregnancy Group

Title Labour & Delivery Management of women requiring insulin during pregnancy V4

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