NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Diabetes, Antenatal Insulin Regime Management in Pregnancy

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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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.

OBSTETRIC GUIDELINES
DIABETIC – ANTENATAL INSULIN REGIMEN

Patients with any type of diabetes **requiring insulin** during pregnancy (Type 1, Type 2 or Gestational) presenting during pregnancy **needing IV treatment** (dehydrated, ketotic or acidotic) and **not in labour** should be commenced on the following intravenous fluid and insulin regimen. This includes those fasting (non-surgical), hyperglycaemic or with DKA.

In women with suspected or confirmed pre-eclampsia this fluid regimen is not appropriate and these cases should be discussed with the on-call obstetric consultant and a member of the diabetes team.

1. Biochemistry:

Ensure U&Es especially bicarbonate level normal. Record urine ketone status. If urinary ketones ≥ 1, or blood ketones >0.5, + OR bicarbonate <17 OR any concerns discuss with the Diabetic Medical (DM) team.

2. Fluids:

Choice of intravenous fluid:

If blood glucose ≥ 15*mmol/l* at the start use 0.9% sodium chloride IV infusion until blood glucose <15 *mmol/l* then change to 5% glucose IV infusion.

If blood glucose <15 *mmol/l* at the start always use 5% glucose IV infusion. (A change to 10% glucose IV infusion may be advocated by the DM team.)

Rate of intravenous infusion:

If dehydrated, ketotic or acidotic

500mls over 30 minutes ("stat" if hypotensive, tachycardic or signs of shock) followed by:
500mls over 1 hour followed by:
500 mls over 2 hours and then
1000mls over 8 hours. Usually by now the blood glucose will be < 15 mmol/l so use 1000ml bags of 5% glucose with 0.15% (20mmol) Potassium Chloride IV infusion continuously, until patient's condition allows IV treatment to stop, or advised to change by diabetes team. If EGFR <30 potassium chloride (KCI) should be omitted. If the blood glucose is still above 15mmol/l contact the diabetes team.
If the woman has been on a glucose containing IV infusion for more than 16 hours then additional sodium choride may be required.

If NOT dehydrated, ketotic or acidotic go straight to the 8 hourly fluid regimen, the choice of IV fluid dependent on the woman's blood glucose and the potassium.

This infusion regimen can only be altered on the instructions of medical staff.

3. Insulin

Unless directed, patients' basal insulin (e.g. Lantus, Levemir, Insulatard, Humulin 1) should be continued whilst on the sliding scale.

Insulin Regimen A (50 units of human actrapid insulin in 50mls 0.9% sodium chloride IV infusion via syringe pump).

Capillary Blood Glucose	**Insulin (Units per hour = ml per hour)**
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	
Date & Time	
Target	Target **Capillary blood glucose is 5-9**
Action/Revision	If **Capillary blood glucose >14** *mmol/l for 2 consecutive hours despite sliding scale contact medical staff for revision of sliding scale and check infusion (consider infusion B after discussion with diabetes team or med reg, if satisfied no issues with insulin infusion)*

Insulin Infusion B (50 units of human actrapid insulin in 50mls 0.9% sodium chloride IV infusion via syringe pump) [To be used if BM >14mmol/l on two occasions despite insulin infusion A]

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	2		
7.1 – 10.0	4		
10.1 – 14.0	6		
>14.0	8		
	Signed	**Signed**	**Signed**
	Date & Time	**Date & Time**	**Date & Time**
Target	Target **Capillary Blood glucose is 5 - 9**		
Action/revision	If **Capillary Blood glucose >14** *mmol/l for 2 consecutive hours despite sliding scale contact medical staff for revision of sliding scale and check infusion*		

4. Biochemical Monitoring

U&Es + HCO3/venous gas to be checked on admission and 6 – 12 hourly. Check all urine for ketones. Check blood glucose every 2 hours. Potassium replacement will be dependent on the serum Potassium.

5. Hypoglycaemia If patient becomes HYPOGLYCAEMIC (i.e. blood glucose <4mmol/l) STOP INSULIN

REFER TO THE HYPOGLYCAEMIA ALGORITHM AND TREAT THE HYPO

If patient's fasting or nil by mouth DO NOT give oral treatments.
For **Mild Hypoglycaemia** episodes (BM 2.8-3.9 mmol/l) ,where patient's fasting, give 150mls of 5% glucose IV (Must not contain KCI) or more if required STAT
Re-check glucose every 15 minutes until blood sugar >4mmols/l.
If hypo is resolved (blood sugar >4mmols/l) recommence insulin as per regimen.
Monitor blood glucose hourly for 2 hours and if stable revert back to original protocol.
Always consider why hypo occurred in the first place.
If 2nd hypo occurs, again stop insulin and treat hypo, but refer to medical staff for review of insulin regime. If unexplained hypoglycaemia discuss with diabetes team or medical registrar.

In **moderate/severe hypoglycaemia** (when unable to use oral route for hypo treatment) use 200mls of 10% glucose or 100mls of 20% glucose IV over 10 – 15 minutes as per hypoglycaemia protocol (STAT). In moderate/severe hypoglycaemia the blood glucose is typically <2.8mmol/l and autonomic and neuroglycopaenic symptoms may be a feature. Can result in coma if left untreated.

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