PRACTICAL GUIDANCE FOR MANAGEMENT OF GLUCOSE CONTROL DURING LABOUR AND DELIVERY FOR WOMEN ON METFORMIN OR MULTIPLE DAILY INJECTIONS (MDI)

INPATIENT DIABETES TRAINING & SUPPORT

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- When managing any patient with diabetes who is pregnant always refer to local guidance and discuss with the local specialist diabetes and obstetric teams

Once in established labour, check CBG hourly

- Stop meal time insulin (and metformin if taken) but continue long acting basal insulin once VRIII is started
- If CBG is less than 4.0 mmol/L, then treat hypoglycaemia as per trust policy, may need dextrose infusion if NBM

Target blood glucose: 4-7 mmol/L

- If general anaesthesia is used, monitoring CBGs every half an hour until the baby is born and the mother is fully conscious
- Relaxed targets may be appropriate and safer in if regional analgesia or general anaesthesia is used to minimise maternal hypoglycaemia
- The unit should be supported by a daily ward round from the diabetes team

Who will need VRIII

- All Type 1 diabetes women using multiple daily injections at the time of established labour
- Women with Type 1 diabetes on insulin pumps/CSII, If unable to manage her own insulin needs, or becomes unstable, i.e. blood glucose >7.0 mmol/L on two consecutive occasions, or has urinary ketones ++ or more on urinary dipstick or high capillary blood ketones (> 1.5 mmol/L) then a VRIII should be commenced immediately and pump switched off.
- In women with Type 2 diabetes or GDM, if two consecutive blood glucose levels are above 7 mmol/L (The second CBG should be within half an hour of the first high reading to prevent any delay in starting VRIII)

Stetting up VRIII:

- Start Insulin infusion (50 units human soluble [Humulin® S] insulin or Actrapid® insulin made up to 50 ml with 0.9% NaCl).
- If on basal insulin, it needs to be continued as usual.
- Stop meal time insulin
- Substrate fluid: 0.9% NaCl with 5% glucose and 0.15% KCl (20 mmol/L) or 0.3% KCl (40 mmol/L) with i.v. insulin to avoid hypoglycaemia, hyponatraemia and hypokalaemia.
- The rate of substrate infusion should take into account the volume status but generally 50 ml/hr would be reasonable. Additional fluids may be needed as per clinical needs. Senior review if risk of fluid overload.

See Appendix 2 of JBDS guidelines below for info on insulin infusion algorithm

Practical Guidance:

- Check U+Es 4–6 hourly during labour to maintain potassium and bicarbonate
- Use blood ketones if available and if ketoacidosis is suspected (see the section of ketoacidosis).
- If elective caesarean section is planned in the morning, a VRIII can be set up at about 6 a.m., or earlier if blood glucose levels are unstable overnight
- Following delivery of the placenta the insulin infusion rate should be **reduced by 50% in women with type 1 and type 2 diabetes and stopped in women with GDM**.
- In women with pre-existing diabetes, pre-pregnancy insulin regimen should be resumed once eating and drinking. The doses should be as pre-advised by diabetes team or 25% less than early pregnancy doses.
- CBG may need to be monitored before and 1 hour after meal for up to 24 hours in gestational diabetes to ensure euglycaemia and pick up new or pre-existing diabetes.
- Women with pre-existing diabetes should resume their usual pre-pregnancy monitoring regimen.
- Staff should be trained in safe use of VRIII.
- Midwives should have at least two hours of training and yearly updates on managing VRIII