MEDICAL DISORDERS ASSOCIATED WITH PREGNANCY

DIABETES IN PREGNANCY

INTRAPARTUM MANAGEMENT OF TYPE 2 DIABETES MELLITUS - INCLUDES INDUCTION OF LABOUR/ CAESAREAN SECTION PLAN

AIMS

- Women with diabetes will maintain blood glucose control (4 – 7 mmol/L) during labour/Caesarean section to avoid hypo / hyperglycaemia.
- Some women with TYPE 2 DIABETES may require insulin and glucose for labour or Caesarean section.
- All women with TYPE 2 DIABETES for induction of labour or caesarean section who are on insulin or oral hypoglycaemic agents shall have the plan for their intrapartum and postpartum management discussed and documented on the MR 004 during antenatal clinic visits at 34 – 36 weeks.
- Measure Blood Glucose Level (BGL) at usual times (pre-breakfast and 2hrs post meals) until fasting.

EVENING PRIOR TO INDUCTION OR CAESAREAN SECTION:

- **Night time treatment**
  
  Insulin: Reduce night time insulin by 50% - usually insulin detemir (*Levemir*) or insulin glargine (*Lantus*) and less commonly humanised isophane insulin (*Protaphane* or *Humulin NPH*).
  
  **Oral agents:** Do not give night time oral hypoglycaemic agents.
  
- **Meal time blood glucose management treatment during induction of labour**
  
  Continue normal meal time medication (insulin or OHAs) and diet until obstetrician determines fasting should commence.
  
- **With onset of fasting**
  
  Monitor blood glucose levels 2 hourly and if > 7.0mmol/L commence IV Dextrose/ Insulin infusion according to protocol as follows.
CAESAREAN SECTION

- Book the woman’s Caesarean section first on the theatre list unless a Type 1 is also booked the same day (Type 1 women have priority)

Evening before:

- Insulin: Night time insulin is reduced by 50% - usually insulin detemir (Levemir) or insulin glargine (Lantus) and less commonly humanised isophane insulin (Protagphane or Humulin NPH). (See MR 004)
- Oral agents: Night time oral hypoglycaemic agents are withheld

On the morning of caesarean section:

- check BGL on admission and if BGL greater than 7 mmol/L, commence IV Dextrose/ insulin infusion, as per INSULIN DOSE TITRATION table 1 – see below

NOTE: Insulin infusion is not required for women with type 2 DM if BGLs are within normal range i.e. less than 7.0 mmol/L

Refer to page 4 for Post Partum Management of Type 2 DM

INSULIN DOSE TITRATION

This guideline is intended to apply on the morning of Induction / Caesarean section.

Please note, this protocol SHOULD NOT be used in the event of a hyperglycaemic crisis such as ketoacidosis, coma or hyperosmolar hyperglycaemic syndrome. Instead, contact the on call physician or obstetric medicine registrar.

TABLE 1- RATE TO COMMENCE INSULIN INFUSION

<table>
<thead>
<tr>
<th>Blood glucose level</th>
<th>Rate of Insulin Infusion</th>
<th>Measure BGL in:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 7 mmol/L</td>
<td>Withhold insulin</td>
<td>2 hours</td>
</tr>
<tr>
<td>7 to 8 mmol/L</td>
<td>1mL/hour (i.e. 1 unit/hour)</td>
<td>2 hours</td>
</tr>
<tr>
<td>Greater than 8 mmol/L</td>
<td>2mL / hour</td>
<td>1 hour</td>
</tr>
</tbody>
</table>

Continue to adjust insulin infusion according to BGLs as shown in table 2
# TABLE 2: RATE TO MAINTAIN INSULIN INFUSION

<table>
<thead>
<tr>
<th>BGL IN MMOL/L</th>
<th>ACTION REQUIRED</th>
<th>FREQUENCY OF BGLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;15 mmol/L</td>
<td>Give 4mL (=4 units) bolus. Increase infusion rate by 1mL (=1 unit) per hour.</td>
<td>Retest BGL in 1 hour. (if BGL remains &gt;15mmol/L notify Physician)</td>
</tr>
<tr>
<td>7-15 mmol/L</td>
<td>Increase insulin rate by 1mL (= 1 unit) per hour. If exceeding 4mL (= 4 units) per hour, inform RMO.</td>
<td>Retest BGL in 1 hour.</td>
</tr>
<tr>
<td>5-7mmol/L AND recent increase to insulin infusion rate in the last hour.</td>
<td>Reduce insulin rate by 1mL (= 1 unit) per hour.</td>
<td>Retest BGL in 1 hour.</td>
</tr>
<tr>
<td>5-7mmol/L AND NO increase to insulin infusion rate in the last hour.</td>
<td>Maintain infusion rate.</td>
<td>Retest BGL in 1 hour. If BGL stable for 3 hours, retest BGL 2 hourly instead.</td>
</tr>
<tr>
<td>4-5mmol/L</td>
<td>Halve insulin infusion rate.</td>
<td>Retest BGL in 1 hour.</td>
</tr>
<tr>
<td>&lt;4mmol/L</td>
<td>Stop Insulin infusion Give 50mL bolus of 10% Dextrose IV If &lt;4 mmol/L, leave infusion off and consult with physician. If BGL 4-6 mmol/L leave infusion off Once BGL &gt; 6.0 mmol/L, recommence infusion at HALF the previous rate.</td>
<td>Retest BGL in 15 minutes. Retest BGL in 15 minutes. Retest BGL in 1 hour and follow Table 2 (if BGL remains &lt;4 mmol/L notify Physician)</td>
</tr>
</tbody>
</table>
POSTPARTUM MANAGEMENT OF TYPE 2 DM

- If used during labour/ caesarean section, cease insulin/ dextrose infusion at delivery of the placenta
- Check MR 004 for any ongoing medication orders
- Monitor BGL (fasting and 2 hours post each meal) for 24 hours, then as decided by Physician/ Diabetes Educator
- Contact Physician/ Diabetes Educator if blood glucose levels are consistently above 10.0mmol/L.
- Women are referred back to their General Practitioner or Specialist Centre for ongoing management of their diabetes

REFERENCES (STANDARDS)


Do not keep printed versions of guidelines as currency of information cannot be guaranteed.
Access the current version from the WNHS website.