3 MEDICAL DISORDERS ASSOCIATED WITH PREGNANCY

3.1 DIABETES IN PREGNANCY

3.1.11 MEDICATION IN PREGNANCY

KEY WORDS
OHA, insulin, diabetes educators, blood glucose monitoring, normoglycaemia

AIM
To lower blood glucose levels in women with type 1, type 2 or gestational diabetes mellitus to accepted target ranges for pregnancy.

ORAL HYPOGLYCAEMIC AGENTS (OHA’S)

KEY POINTS

- Most OHA’s are not currently recommended for use in pregnancy. However, clinical trials have demonstrated that Metformin and Glibenclamide appear to be safe alternatives to insulin therapy. Clinical trials are continuing to determine if there is any long term effect on the fetus.
- Oral hypoglycaemic agents are not used in type 1 DM.
- Oral hypoglycaemic agents may be prescribed by the physician for women with type 2 or gestational DM following discussion with the woman in the following circumstances:
  - Where the woman has been taking OHA’s prior to and in early pregnancy (e.g. PCOS)
  - Where the woman refuses to take insulin injections.
  - When insulin compliance is poor.
  - As a supplement to insulin or when large doses of insulin are required to control blood glucose levels.
- On admission notify the diabetes educators / medical registrar of women taking OHA’s during pregnancy.
- Blood glucose monitoring is essential throughout pregnancy – fasting and 2 hours post meals. If BGL’s are not maintained within range (< 7.0mmol/L) subcutaneous insulin is offered.
- Notify the diabetes physician / medical registrar of the woman’s planned method for birth, for further instruction regarding OHA’s in labour or prior to caesarean section.

INSULIN THERAPY

KEY POINTS

- Women with type 1DM require insulin for life. Some type 1 women will be using a subcutaneous insulin pump for delivery of insulin.
- Insulin pumps deliver a constant basal rate of short acting insulin and the woman will give a bolus dose for meals.
- The woman will know how to manage her pump.
• Frequent monitoring of BGLs pre and post meals is required for pump management,

• If diet and exercise has failed to achieve normoglycaemia in women with type 2 DM and GDM, diabetes medication is commenced.

• Initiation of medication is discussed with the Diabetes Physician or Obstetrician.

• Women requiring insulin during pregnancy monitor their BGLs at least three days a week pre breakfast and 2 hours after meals to determine the effect of insulin doses on blood glucose levels.

COMMENCING INSULIN THERAPY

• The need for and timing of insulin administration depends on the blood glucose profile as demonstrated by BGL monitoring and cannot be predicted by the OGTT result.

• Diet may be sufficient to achieve control after some meals, but not after others, depending on the individual's eating pattern and other life factors. For example, insulin may be necessary only after breakfast, and not after other meals. In addition, insulin resistance increases progressively as pregnancy proceeds. For this reason, there is no final dose of insulin that will achieve control.

• Monitoring must be continued, and insulin dosage adjusted (usually increases two - three fold) as the pregnancy proceeds, determined by blood glucose response.

Timing and Type of Insulin

• When starting women on insulin the appropriate insulin to commence them on is determined by the time of day when glucose levels are high.

<table>
<thead>
<tr>
<th>BGL elevated</th>
<th>Before breakfast</th>
<th>After breakfast</th>
<th>After lunch</th>
<th>After dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Insulin:</td>
<td>Nocte 2100-2130</td>
<td>Pre breakfast</td>
<td>Pre lunch</td>
<td>Pre dinner</td>
</tr>
<tr>
<td>Type of insulin</td>
<td>Protaphane, Humulin NPH, Lantus or Levemir</td>
<td>Short-acting e.g. Novorapid ®/ Humalog</td>
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</tbody>
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* Discuss with the patient a suitable time to take longer acting insulin with regards their normal sleeping habits, needs to be at a consistent time e.g. 2130 rather than “Before Bed”

Dose of insulin

• The key to the management of a pregnant woman requiring insulin is flexibility and providing the correct amount of insulin to maintain euglycaemia.

• When starting insulin, a SMALL DOSE IS PRESCRIBED by the medical officer, in anticipation that increasing insulin stepwise will be required to achieve blood glucose control as soon as possible.

• Women with diabetes mellitus who are inpatients are reviewed daily (Monday – Friday) by the medical registrar and/or diabetes educators and the physician on call should be notified of any problems out of hours or on weekends.
Once discharged, the woman should maintain phone contact with the diabetes educators for assistance in determining subsequent changes to her insulin regimen on a least a weekly basis.