CARDIOTOCOGRAPHY (CTG) - ANTENATAL

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM
   • Accurate interpretation of Antenatal Fetal Heart Rate (FHR) with Electronic Fetal Monitoring (EFM)

2. PATIENT
   • A woman ≥26 weeks gestation, presenting with a clinical indication as per Appendix 1

3. STAFF
   • Medical, nursing and midwifery staff

4. EQUIPMENT
   • Cardiotocography (CTG) machine and straps
   • Ultrasound gel

5. CLINICAL PRACTICE
   Performing the FHR pattern:
   • Explain the procedure and reasons for CTG
   • Obtain verbal consent
   • Suggest the woman empties her bladder
   • Raise bed to appropriate height for clinician
   • Ascertain the lie, presentation and position of the fetus by abdominal palpation
   • Place and secure the fetal heart rate ultrasound transducer over the fetal anterior shoulder and the tocotransducer on the fundus
   • Position the woman comfortably, either sitting upright or laterally
   • Ensure ultrasound contact is maintained (handheld if necessary)
   • Document on the CTG paper:
     o date and time
     o addressograph
     o indication for monitoring
     o maternal pulse every 30 minutes
     o gestation
   • Ensure that the FHR records at the rate of 1cm/minute
   • Continue recording the FHR pattern until all reassuring features have been met
   • Ensure where there are concerns regarding fetal heart rate pattern, reporting of FHR pattern is documented by consultant/medical staff using the CTG sticker

   Interpreting antenatal FHR patterns (see Figure 1 below)
   • Classify CTG as per features on antenatal sticker (Figure 1) and arrange clinical response as per RHW PACE criteria
   • Interpret the CTG in the context of the clinical situation, especially gestational age
   • Compare with preceding CTGs where available

   Features not met
   • Escalate to the midwife in charge if non-reassuring or abnormal CTG
   • Consider either review by the medical team or call PACE 1 or 2
   • Discuss with midwife in charge if criteria falls in yellow (non-reassuring) or red (abnormal) zone to determine which of medical review or a PACE call is required
   • Keep monitoring with ongoing assessment if features are non-reassuring or abnormal
   • Keep woman nil by mouth
   • Document in the clinical notes by medical team individualized plan for the woman

..../2
CARDIOTOCOGRAPHY (CTG) – ANTE NATAL  cont’d

Figure 1 - Antenatal Sticker

<table>
<thead>
<tr>
<th>Identified Risk</th>
<th>Maternal Pulse</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Features</strong></td>
<td><strong>Contraction</strong>s</td>
</tr>
<tr>
<td>Reassuring</td>
<td>Nil</td>
</tr>
<tr>
<td></td>
<td>Present &gt;37/40</td>
</tr>
<tr>
<td>Non-reassuring</td>
<td>Present &lt;37/40</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Abnormal</td>
<td>Tonic &gt;2min</td>
</tr>
<tr>
<td></td>
<td>≥6:10</td>
</tr>
</tbody>
</table>

**Features:**
- **Reassuring**
- **Non-reassuring**
- **Abnormal**

**Management Plan:**

6. DOCUMENTATION
- Integrated Clinical Notes
- CTG Stickers
- CTG Paper

7. EDUCATIONAL NOTES
- It is mandatory for all appropriately trained and qualified providers of maternity care to complete Fetal Welfare Assessment training including ongoing updates
- The fetal heart rate pattern can be affected by:
  - The gestation of the fetus
  - Fetal behavioural state
  - Maternal medications
  - Pregnancy complications
- Whilst most fetal behavioural states last between 20–40 minutes, a fetal sleep cycle may last up to 60 minutes; reduced variability is abnormal if it lasts longer than 60 minutes
- Tocotransducers have limited ability to record uterine activity in the preterm gestation or in a woman with high BMI
- Antenatal EFM may be considered at gestations below 26+0 weeks following a multidisciplinary discussion with the woman regarding birth and neonatal management.
- (In multiple pregnancies ultrasound may be required to locate individual fetal heart positions prior to commencement of CTG monitoring
- The frequency of antenatal CTG is dependent on both the maternal and fetal condition
- There are very few instances where regular routine CTG must be implemented
CAROTTIDOCOGRAPHY (CTG) – ANTENATAL  cont’d

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP
• Preterm Premature Rupture Of Membranes (PPROM) – Assessment And Management Guideline
• Ruptured Membranes – Pre Labour at Term
• Preterm Labour - Diagnoses and Management
• Transfers - In Utero At 23–25 Weeks Gestation
• Midwifery Admission Guideline
• Estimating Due Date (EDD)
• Induction of Labour
• Hypertension – Management In Pregnancy
• Antepartum Haemorrhage
• Cervical Catheterisation for Mechanical Cervical preparation
• Cervical Ripening - Induction of Labour - Administration of Prostaglandin
• Induction Of Labour For Women With A Post-Dates Low Risk Pregnancy
• Intrapartum Fetal Heart Rate Monitoring
• Cervidil Guideline
• Patient with Acute Condition for Escalation (PACE): Management of the Deteriorating ADULT & MATERNITY Inpatient

9. RISK RATING
• Medium

10. REFERENCES
2 NSW general DETECT/ ‘Between the Flags’ program 2012
3 Antenatal Cardiotocography. SA Maternal & Neonatal Clinical Network Contact: South Australian Perinatal Practice Guidelines workgroup 2010
4 New South Wales Fetal Heart Rate Monitoring Guideline GL2015_004 March 2015

REVISION & APPROVAL HISTORY
Minor addition (last dot point) Performing the FHR pattern February 2016
Reviewed and endorsed Maternity Services LOPs September 2015
Approved Quality & Patient Safety Committee December 2010
Reviewed Obstetrics Clinical Guidelines Group October 2010
Approved Patient Care Committee 6/12/07

FOR REVIEW : SEPTEMBER 2018
APPENDIX 1

Situations where Antenatal EFM should be considered from 26 weeks gestation

<table>
<thead>
<tr>
<th>Situations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal Doppler waveform studies</td>
</tr>
<tr>
<td>Amniotic fluid index (AFI) &lt;5cm or &gt;25cm</td>
</tr>
<tr>
<td>Antepartum haemorrhage (APH)</td>
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<tr>
<td>Decreased fetal movements</td>
</tr>
<tr>
<td>Diabetes – Pre-gestational or Unstable gestational</td>
</tr>
<tr>
<td>External cephalic version (prior to and following any attempt)</td>
</tr>
<tr>
<td>Hypertension: a sudden elevation of blood pressure (BP) at a gestation where birth is considered as a treatment option</td>
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<tr>
<td>Intrauterine growth restriction (IUGR)</td>
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<tr>
<td>Post-dates from 41+1 weeks (twice weekly)</td>
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<tr>
<td>Pre-eclampsia - Uncontrolled hypertension or progressing pre-eclampsia</td>
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<tr>
<td>Preterm rupture of the membranes &lt;37+0 weeks</td>
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<tr>
<td>Preterm uterine activity</td>
</tr>
<tr>
<td>Prostaglandin – (pre and post administration )</td>
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<tr>
<td><strong>Any other obstetric conditions or procedures that increase the risk of fetal compromise</strong></td>
</tr>
</tbody>
</table>

*Note: This list is not exhaustive and should not replace clinical judgement.*