FETAL BLOOD SAMPLING – INTRAPARTUM (FBS)

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
   - Appropriate assessment of fetal acid base balance/lactate status
   - Appropriate clinical plan in response to fetal blood sampling result

2. PATIENT
   - Labouring woman whose cervix is >3cm dilated and there is a pathological Cardiotocograph (CTG)
   - Contraindications to fetal blood sampling are women with Human Immunodeficiency virus (HIV), active genital herpes simplex, Hepatitis C, Hepatitis B or known fetal bleeding disorders such as haemophilia, or prematurity <34 weeks

3. STAFF
   - Medical officer
   - Registered midwife

4. EQUIPMENT
   - Light source
   - Fetal blood sampling tray
   - Chlorhexidine 0.02%
   - Obstetric cream
   - Lactate machine
   - pH machine

5. CLINICAL PRACTICE
   - Discuss need for fetal blood sampling with the woman and her partner / support people and obtain verbal consent and document
   - Position the woman to maximise attendant’s ability to visualise the cervix/fetal scalp: usually a lateral position
   - Cleanse and drape the vulva using aseptic technique
   - Insert amnioscope, identify cervix and fetal scalp, apply end of amnioscope closely to the fetal head
   - Clean the area of fetal head to be sampled with gauze
   - Apply paraffin jelly to fetal scalp to encourage blood droplet formation
   - Induce bleeding by pressing fetal scalp blade firmly against the fetal scalp
   - Collect blood straight into capillary tube (held in the appropriate capillary tube holder). Ensure no contamination with maternal blood and minimize air bubbles in the specimen
   - Hand specimen to midwife
   - Depending on sample size, present sample to lactate analyser or blood gas analyser
     - Lactate can be measured from a small sample
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- Consider collecting a second sample immediately after first if possible
- Apply pressure using a gauze or peanut swab to fetal scalp to stop bleeding
- Ensure results are handwritten into the medical record with an ongoing plan of care (Printout is not adequate)
- **Interpret Results:**
  - If pH \( \geq 7.25 \) repeat within one hour if the FHR abnormality persists
  - If pH \( 7.21 - 7.24 \) repeat within 30mins or deliver if rapid fall since last FBS
  - If pH \( \leq 7.20 \) DELIVER immediately (within 30 mins to 60 mins depending on clinical condition)
  - If Lactate \( 4.2 - 4.8 \) consider repeat in 30 mins
  - If Lactate \( \geq 4.8 \) DELIVER immediately (within 30 mins to 60 mins depending on clinical condition)
- Take paired samples of cord blood at birth of all babies who have had FBS performed

All FBS should take into account previous pH / lactate results, rate of progress in labour and clinical information

7. DOCUMENTATION
- Partogram
- Integrated Clinical Notes

8. EDUCATIONAL NOTES
- Measuring pH gives an indication of respiratory acidosis and/or metabolic acidosis whilst lactate sampling gives an assessment of metabolic acidosis
- Simplicity of performing a lactate measurement makes this procedure an attractive alternative to measuring pH
- In the presence of a pathological FHR pattern FBS should be performed, unless there is very clear evidence of acute fetal compromise. For example : a prolonged deceleration > 3mins in duration. In this instance time should not be wasted on FBS as an alternative to expediting birth
- The following table represents the correlation between cord pH – respiratory and metabolic acidosis and Lactate – metabolic acidosis
- Minimise work health and safety risks by adopting a lateral position without manual support of the women’s leg

<table>
<thead>
<tr>
<th>CORD PH</th>
<th>LACTATE</th>
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<tbody>
<tr>
<td>7.3</td>
<td>3.2</td>
</tr>
<tr>
<td>7.25</td>
<td>4.1</td>
</tr>
<tr>
<td>7.20</td>
<td>4.9</td>
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<tr>
<td>7.15</td>
<td>5.7</td>
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</tbody>
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9. RELATED POLICIES / PROCEDURES/ CLINICAL PRACTICE LOP

- Intrapartum fetal heart rate monitoring
- Instrumental vaginal delivery
- Care in first stage of labour
- HIV in Pregnancy
- Hepatitis B Positive mothers and their babies
- Hepatitis C positive mothers and their babies
- Herpes simplex
- PACE Birthing Services calling criteria

10. REFERENCES


REVISION & APPROVAL HISTORY
Reviewed and endorsed Maternity Services LOPs group 15/7/13
Approved Patient Care Committee 6/12/07
Reviewed by Obstetrics Guidelines group September
Approved RHW Quality Council 19/6/06
Endorsed Maternity Services Clinical Committee 13/6/06