<table>
<thead>
<tr>
<th><strong>This is an official Northern Trust policy and should not be edited in any way</strong></th>
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<tbody>
<tr>
<td><strong>Fetal Blood Sampling Guideline</strong></td>
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</tbody>
</table>
| **Reference Number:**
NHSCT/11/423 |
| **Target audience:**
This policy is directed to all obstetricians and midwives |
| **Sources of advice in relation to this document:**
Caroline McKeown, Lead Midwife
Gillian Morrow, Practice Development Midwife
Margaret Gordon, Assistant Director Obs/Gynaec |
| **Replaces (if appropriate):**
Former NHSCT Fetal Blood Sampling Guideline (NHSCT/10/325) |
| **Type of Document:**
Directorate Specific |
| **Approved by:**
Policy, Standards and Guidelines Committee |
| **Date Approved:**
21 April 2011 |
| **Date Issued by Policy Unit:**
4 August 2011 |
| **NHSCT Mission Statement**
To provide for all, the quality of service we expect for our families, and ourselves. |
Fetal Blood Sampling
Guideline

April 2011
Fetal Blood Sampling (FBS) Guideline

Definition
To obtain a scalp sample of capillary blood from the fetus in order to assess fetal acidosis, in the presence of a suspicious or pathological CTG.

Aim
To diagnose level of hypoxia / acidosis in the fetus, to facilitate further obstetric management.

Target Audience
This policy is directed to all obstetricians and midwives.

Responsibilities
The Assistant Director and Clinical Director are responsible for the dissemination and implementation of this guidance within the Directorate.

Line managers are responsible for ensuring that staff have a working knowledge of and adhere to the guidance and that any amendments are disseminated.

All practitioners are responsible for familiarising themselves with and adhering to this guidance.

Policy Statement

Indications
- Suspicious or Pathological CTG patterns – e.g. persistent variable or late decelerations
- Unexplained decreased or absent variability
- Unexplained tachycardia
- Sinusoidal heart rate pattern
- Presence of meconium with suspicious or pathological FHR

Refer to NHSCT Guidelines for Midwifery and Obstetric Staff in the use and interpretation of cardio-tocography in antenatal and intrapartum fetal surveillance on how to recognizes/define a suspicious or pathological CTG.

Contraindications
- Women who are HIV positive or suffer from hepatitis B or C.
- If the fetus is known/suspected of having a bleeding disorder
- The fetus is less than 34 weeks gestation.

Equipment
1. Disposable fetal blood sampling kit
2. Disposable amnioscope
3. Sterile Gloves
4. White Paraffin
5. Lubricating gel/hibitane
Procedure

- Obstetrician must explain procedure to the woman, and obtain her verbal consent for procedure.
- Midwife must check blood gas analyzer is ready for use to facilitate immediate result.
- Continuous CTG must remain in progress throughout procedure to observe for fetal well being
- Midwife assists medical obstetric staff to prepare equipment using sterile procedures.
- Once equipment is prepared position woman either:
  - in left lateral position with leg support or
  - in lithotomy position
- The external genital area is cleaned with water
- Vulva is isolated using sterile drapes
- The operator must check cervical dilatation
- The amnioscope is passed into the posterior vaginal fornix and the obturator is removed.
- The amnioscope is maneuvered to rest against the fetal head
- The fetal scalp area is dried carefully with a swab
- A thin layer of soft paraffin is smoothed over the area
- Any surplus paraffin is removed with a second wipe
- A stab incision is made in the scalp; prick the baby’s scalp firmly with the blade ensuring that the surface is cleanly broken, sometimes an additional prick is required and this should be at right angles to the first.
- Blood is collected directly from the wound site into the pre-heparinised capillary tube, using the tube holder (both provided in the fetal blood sampling kit) – the tube should be filled ½ to ⅔, without air bubbles and if blood is free flowing, a second sample taken.
- Once the sample has been obtained, seal the tube with the caps provided in the kit, before transport to the analyzer
- The person who obtained the sample should thoroughly mix the sample for 30 seconds to reduce air bubbles and prevent coagulation of sample.
- The sample should be taken to the blood gas analyzer by a midwife or a member of the medical staff who is competent in how to use the machine.
- An instrument specific adaptor is used to introduce capillary sample to analyzer
- One midwife must remain with the woman throughout the procedure.
• Always document when sample was taken on FHR tracing and maternity record

• Record results:
  - On CTG
  - In woman’s maternity record
  - In baby notes

Note: Sources of Error

• Contamination with amniotic fluid (↓ pH value)
• Contamination with meconium (↑ or ↓ pH value)
• Presence of air bubbles (↑ pH value)
• Fetal scalp oedema or caput (↓ pH value)
• Delay in processing (↓ pH value)

<table>
<thead>
<tr>
<th>FBS Result (pH)</th>
<th>Interpretation</th>
<th>Subsequent Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥7.25</td>
<td>Normal</td>
<td>Repeat FBS if FHR abnormality persists</td>
</tr>
<tr>
<td>7.21 – 7.24</td>
<td>Borderline</td>
<td>Repeat FBS within 30 minutes or consider delivery if rapid fall since last sample</td>
</tr>
<tr>
<td>≤7.20</td>
<td>Abnormal</td>
<td>Delivery indicated</td>
</tr>
</tbody>
</table>

Alternative Sites with Gas Analyser Machine

• Neonatal Unit (Antrim and Causeway)
• I.C.U. (Antrim and Causeway)

Note:

All scalp pH estimations should be interpreted taking into account the previous pH measurement, the rate of progress in labour and the clinical features of the mother and baby.

If CTG warrants scalp pH estimations and it is not possible to perform then delivery is indicated.

If it has been necessary to do a fetal blood sample during labour then at delivery, paired umbilical cord samples (Both arterial and venous samples are required) should be taken. Apgar scores should be calculated at 1 and 5 minutes. All results recorded on NIMATS and in the baby’s notes.
Equality, Human Rights and DDA
The policy is purely clinical/technical in nature and will have no bearing in terms of its likely impact on equality of opportunity or good relations for people within the equality and good relations categories.

Alternative formats
This document can be made available on request on disc, larger font, Braille, audio-cassette and in other minority languages to meet the needs of those who are not fluent in English.

Sources of Advice in relation to this document
The Policy Author, responsible Assistant Director or Director as detailed on the policy title page should be contacted with regard to any queries on the content of this policy.

References

NHSCT (2009) Guidelines for Midwifery and Obstetric Staff in the use and interpretation of Cardio-Tocography in Antenatal and Intrapartum Surveillance