Management of Uterine Hyperstimulation (Tachysystole)

Clinical Practice Guideline (CPG)

1. Background

Hyperstimulation is defined as:

- more than 4 contractions in ten minutes over a 30 minute period
  OR
- contractions lasting more than 2 minutes in duration
  OR
- contractions of normal duration occurring within 60 seconds of each other

Hyperstimulation may occur with or without fetal heart rate (FHR) changes

1.1 Precautions

Early recognition is essential as hyperstimulation of the uterus causes poor utero-placental perfusion leading to a decrease in fetal oxygenation and eventually fetal compromise. It is expected that early recognition of uterine hyperstimulation with prompt and appropriate management will reduce maternal and perinatal morbidity and mortality.

When assessing for hyperstimulation consideration should be given to both the duration and frequency of the contractions. Contractions normally vary in duration from 30-60 seconds during the first stage of labour, to 90 seconds during the second stage of labour. The fetus needs 60-90 seconds between each contraction to restore normal fetal oxygenation.

Hyperstimulation is frequently associated with oxytocin infusions, therefore judicious use of oxytocin and continuous cardiotocograph (CTG) is required whenever an oxytocin infusion is being administered (refer Oxytocin (Syntocinon®) Induction and Augmentation of Labour CPG).

Where hyperstimulation occurs naturally a cardiotocograph (CTG) is also required to ensure early recognition of fetal heart rate changes.

A raised uterine baseline pressure also contributes to reduced utero-placental perfusion. Sustained baseline pressures above 15mmHg lead to fetal heart rate changes.
Placental blood flow between mother and fetus ceases during a contraction when the uterine pressure exceeds 30mmHg. Intensity of uterine activity however can only be accurately assessed using an intrauterine pressure sensor.

Adverse effects on the fetus may be avoided by minimizing periods of hyperstimulation, and administrating treatment in a timely manner rather than waiting until the fetal heart rate changes are non-reassuring.
Management of hyperstimulation defined as:
- more than 4 contractions in 10 minutes or
- duration of contractions > 2 mins or
- contractions within 60 seconds of each other

Cervidil® vaginal pessary insitu: Immediately remove pessary

Normal fetal heart rate pattern
Baseline, variability, accelerations
- Remain with the woman until normal uterine activity is achieved
- Notify medical staff and midwife in charge
- Maintain continuous CTG

Where associated with oxytocin infusion:
- decrease infusion to prior rate
- If normal activity not established within 10-20 minutes:
  - halve the infusion rate
  - notify medical staff

Suspicious fetal heart rate pattern
including:
- variable decelerations without complicating features or
- isolated prolonged decelerations or
- increased baseline heart rate

Where associated with oxytocin infusion:
- immediately halve infusion rate
- position change to left lateral
- hydration
- observe for improvement in the fetal heart rate and uterine activity

Fetal heart rate remains suspicious with abnormalities persisting:
- stop the oxytocin infusion

Where hyperstimulation spontaneously occurs instigate emergency management principles:
- position mother in the left lateral
- IV fluids as required
- consider scalp lactate if available

Significant heart rate pattern including:
- prolonged decelerations or
- complicated variable decelerations or
- late decelerations or
- increase in baseline heart rate or
- reduced or absent variability or
- bradycardia

Where associated with oxytocin infusion:
- immediately stop infusion
- advise vaginal examination to assess progress
- exclude placental abruption
- emergency management principles:
  - position mother in the left lateral
  - IV fluids as required
  - consider scalp lactate if available

Where hyperstimulation persists, consider:
1. Terbutaline 250 micrograms IV or SC
   NB: the ampoule comes as 500mcg/1ml therefore the volume given is 0.5ml, or
2. Salbutamol 100 micrograms IV
   NB: make up 1 ampoule of salbutamol sulphate (Not Ventolin Obstetric) for injection 500μg in 10 ml Normal saline (final concentration 50μg/ml). Administer 100μg (2 ml of preparation) over 1-2 minutes. May be repeated after 5 minutes if hypertonus sustained, or
3. Sublingual GTN spray (Nitrolingual®):
   1 metered spray (400μg) administered under tongue. Repeat after 5 minutes if hypertonus sustained.
   Expediting birth/emergency caesarean if
   - CTG remains suggestive of fetal compromise
   - scalp lactate > 4.7 mmol/l

MNCN- Management of Uterine Hyperstimulation (Tachysystole)