Policy

Clinical Guideline
Fetal Surveillance Intrapartum Clinical Guideline

Policy developed by: SA Maternal & Neonatal Clinical Network
Approved SA Health Safety & Quality Strategic Governance Committee on:
07 September 2015
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Summary
Clinical practice guideline on the types and indications for fetal surveillance in the intrapartum period.

Keywords
Intrapartum, CTG, cardiotocography, fetal compromise, STAN, fetal heart rate, monitoring, intermittent monitoring, continuous monitoring, Doppler, fetal surveillance intrapartum, clinical guideline

Policy history
Is this a new policy? N
Does this policy amend or update an existing policy? Y v3.0
Does this policy replace an existing policy? N

Applies to
All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

Staff impact
All Staff, Management, Admin, Students, Volunteers
All Clinical, Medical, Nursing, Allied Health, Emergency, Dental, Mental Health, Pathology

PDS reference CG221

Version control and change history

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South Australian Perinatal Practice Guidelines

fetal surveillance
(intrapartum)

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Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient’s medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Explanation of the aboriginal artwork:
The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant women. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.

Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that Perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.
Intrapartum fetal surveillance flow chart

Any identifiable antenatal risk factors

- No

- Intermittent auscultation using a hand held Doppler

  - Abnormal

  - EFM Continuous

- Yes

  - EFM Intermittent or Continuous

Development of an intrapartum risk factor?

- No

- EFM Continuous

Antepartum risk factors

- Abnormal antenatal cardiotocograph (CTG)
- Abnormal Doppler umbilical artery velocimetry
- Suspected intrauterine growth restriction
- Oligohydramnios or polyhydramnios
- Antepartum haemorrhage (in excess of a “show” ≥ 50 mL)
- Hypertension / pre-eclampsia (current pregnancy)
- Diabetes (on medication, or poorly controlled or fetal macrosomia)
- Multiple pregnancy
- Uterine scar / previous caesarean section
- Known fetal abnormality which requires monitoring
- Maternal medical conditions that constitute a significant risk of fetal compromise (e.g. severe anaemia, cardiac disease, cholestasis, hyperthyroidism, renal disease, iso-immunisation, substance abuse, vascular disease)
- Reduced fetal movements
- Morbid obesity (BMI ≥40)
- Abnormal maternal serum screening results associated with an increased risk of poor perinatal outcomes e.g. PAPP-A <0.37 MoM

Intrapartum risk factors

- Preterm labour
- Breech presentation
- Post-term pregnancy (≥ 42+0 weeks)
- Induction / augmentation of labour with oxytocin
- Prolonged rupture of membranes (> 24 hours)
- Meconium-stained or blood-stained liquor
- Fetal bradycardia (< 110 beats / minute) or audible decelerations
- Fetal tachycardia (>160 beats / minute)
- Abnormal fetal heart rate on auscultation
- Maternal pyrexia > 38 °C
- Chorioamnionitis
- Vaginal bleeding in labour (in excess of a “show” ≥ 50 mL)
- Prolonged active first stage labour (> 12 hours regular uterine contractions with cervical dilatation > 3 cm)
- Prolonged second stage of labour (> 1 hour active pushing)
- Insertion of epidural (including just before insertion)
Literature review

Intrapartum fetal surveillance

- Aims to avoid adverse outcome from intrapartum acidotic / hypoxic insult
- Method (intermittent auscultation or continuous CTG monitoring) should be decided in partnership with the woman according to her needs
- Intermittent auscultation is equally as effective as continuous CTG monitoring for low risk women in labour
- In low risk women, the incidence of intrapartum fetal compromise is low
- Computerised CTGs augmented by fetal ECG ST segment analysis (STAN) during labour have been introduced at the Women’s and Children’s Hospital in South Australia. For further information on STAN see www.neoventa.com

Continuous cardiotocography

- Should not be used as a substitute for a midwife
- Provides a record of change over a period of time
- Reduces the incidence of neonatal convulsions, but no significant differences in cerebral palsy, infant mortality or other standard measures of neonatal well-being
- Increases the rates of caesarean sections and operative vaginal deliveries

  - It is possible that the availability of fetal blood sampling in labour will lessen the increase in caesarean section rate; however it should not be instituted in cases where it may delay delivery and thereby worsen outcomes. For further information on fetal blood sampling see ‘Fetal acid base balance’ at www.sahealth.sa.gov.au/perinatal in the A to Z index

- With the use of telemetry, women can labour with minimal restriction in their activity

Intermittent auscultation

- Refers to auscultation of the fetal heart at regular intervals using a hand held Doppler
- Every 15 - 30 minutes (throughout and after a contraction) in active labour or in accordance with hospital policy
  - Each auscultation should commence toward the end of a contraction and continue for at least 30-60 seconds after the contraction has finished
- After each contraction or at least every 5 minutes in active second stage of labour:
  - listen between active pushing and toward the end of the contraction for at least 30-60 seconds

Indications for continuous CTG intrapartum

- Continuous CTG is recommended when risk factors for fetal compromise are detected during pregnancy, at the onset of labour, or at any time during labour (See risk factors below)
- If there is difficulty auscultating the fetal heart OR obtaining an adequate fetal heart rate tracing at any time in labour, the fetal heart rate should be monitored using a fetal scalp electrode
- Consideration should be given to instituting CTG monitoring before insertion of a regional anaesthetic to establish baseline fetal heart rate characteristics
Interruptions to fetal heart rate monitoring

> Where continuous CTG is required for the substantial part of labour, and if the CTG to date is considered to be normal, monitoring may be interrupted for short periods of up to 15 minutes to allow personal care (e.g. shower, toilet). Such interruptions should be infrequent and not occur immediately after any intervention that might be expected to alter the FHR (e.g. amniotomy, epidural insertion, or top-up etc)
> Monitor fetal heart rate by intermittent auscultation during unavoidable interruptions, at times of potential fetal vulnerability, with re-commencement of continuous CTG when feasible
> Interruptions to fetal heart rate monitoring should be minimised during transfer to the operating theatre and before delivery of the fetus

Antepartum risk factors

> Abnormal antenatal cardiotocograph (CTG)
> Abnormal Doppler umbilical artery velocimetry
> Suspected intrauterine growth restriction
> Antepartum haemorrhage (in excess of a ‘show’ ≥ 50 mL)
> Hypertension / preeclampsia (current pregnancy)
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> Multiple pregnancy
> Uterine scar / previous caesarean section
> Known fetal abnormality which requires monitoring
> Oligohydramnios or polyhydramnios
> Maternal medical conditions that constitute a significant risk of fetal compromise (e.g. severe anaemia, cardiac disease, cholestasis, hyperthyroidism, renal disease, iso-immunisation, substance abuse, vascular disease)
> Reduced fetal movements
> Morbid obesity (BMI ≥40)
> Abnormal maternal serum screening associated with an increased risk of poor perinatal outcomes e.g. PAPP-A <0.37 MoM

Risk factors at the onset of labour

> Preterm labour
> Breech presentation
> Post-term pregnancy (≥ 42+0 weeks)
> Induction of labour with oxytocic agents

Risk factors present at the onset of labour or arising during labour

> Prolonged rupture of membranes (> 24 hours)
> Meconium-stained or blood-stained liquor (apply fetal scalp electrode, [providing there are no contraindications e.g. Hepatitis B antigen carrier, Hepatitis C or HIV positive women])
> Fetal bradycardia (< 110 beats / minute) or audible decelerations
> Fetal tachycardia (>160 beats / minute)
> Abnormal fetal heart rate on auscultation
> Maternal pyrexia > 38 °C
> Chorioamnionitis
> Vaginal bleeding in labour (in excess of a “show” ≥ 50 mL)
> Prolonged active first stage labour (> 12 hours regular uterine contractions with cervical dilatation > 3 cm)
> Prolonged second stage of labour (> 1 hour active pushing)

Consider intrapartum cardiotocography if several of the following conditions are present:

> Pregnancy gestation 41°0 to 41°6 weeks’ gestation
> Gestational hypertension
> Gestational diabetes mellitus without complicating factors
> Obesity (BMI 30-40)
> Maternal age ≥ 40
> Maternal pyrexia ≥ 37.8 and < 38 °C

Indications associated with the use of interventions

> Any use of oxytocin whether for induction or for augmentation of labour
> Before and for at least 20 minutes after administration of prostaglandin or cervical ripening balloon catheter
> Epidural analgesia (including at the time of inserting an epidural block)

Conservative measures:

> If there are any concerns about fetal wellbeing, think about possible underlying causes (e.g. infection) and start one or more of the following conservative measures, based on the most likely cause/s:

  > Encourage the woman to mobilise or adopt a left lateral position, and in particular avoid being supine
  > Give intravenous fluids
  > Offer paracetamol if the woman’s temperature is raised
  > Assess contraction frequency / reduce oxytocin (if being used) if uterine hyperstimulation
  > Inform midwife coordinator and obstetrician

> Do not use maternal facial oxygen for intrauterine fetal resuscitation, because it may harm the baby (but it can be used for maternal indications)
References


Abbreviations

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<tr>
<td>BMI</td>
<td>Body mass index</td>
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<tr>
<td>CTG</td>
<td>Cardiotocograph or cardiotocogram</td>
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<td>EFM</td>
<td>Electronic fetal monitoring</td>
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<tr>
<td>e.g.</td>
<td>For example</td>
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<tr>
<td>FHR</td>
<td>Fetal heart rate</td>
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<tr>
<td>HIV</td>
<td>Human immunodeficiency virus</td>
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<td>mL</td>
<td>Millilitre(s)</td>
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<td>MoM</td>
<td>Multiples of the median</td>
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<td>PAPP-A</td>
<td>Pregnancy associated plasma protein A</td>
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<tr>
<td>RANZCOG</td>
<td>Royal Australian and New Zealand College of Obstetricians and Gynaecologists</td>
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<td>RCOG</td>
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