Preterm labour and birth

Clinical Guideline Presentation

45 minutes

Towards CPD Hours

Clinical Excellence Queensland

Queensland Government

References:

Queensland Clinical Guideline: Preterm labour and birth is the primary reference for this package.

Recommended citation:

Queensland Clinical Guidelines. Preterm labour and birth clinical guideline education presentation E20.6-1-V4-R25. Queensland Health. 2020.

Disclaimer:

This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

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Objectives

- In relation to preterm labour (PTL) and preterm birth (PTB), the participant will be able to:
  - Identify risk factors
  - Identify risk reduction measures
  - Outline the assessment process
  - Outline clinical management options

Abbreviations

BMI	Body mass index
CTG	Cardiotocograph
CS	Caesarean section
fFN	Fetal fibronectin
FHR	Fetal heart rate
GBS	Group B streptococcus
MSU	Mid stream urine
MC&S	Microscopy / culture / sensitivity
PROM	Premature rupture of membranes
PPROM	Preterm premature rupture of membranes
PTB	Preterm birth
PTL	Preterm labour
QCC	Queensland Emergency Medical System Coordination Centre
ROM	Rupture of membranes
TVCL	Transvaginal cervical length
USS	Ultrasound scan
VE	Vaginal examination
>	Greater than
<	Less than

Introduction

Preterm birth: *Occurring before 37 completed weeks*

- PTB occurred in 9.4% of all pregnancies in Queensland in 2017
- Cause unidentified in up to 50% of PTB
- Majority of women with risk factors will not have PTB
- Many women who have a PTB have no risk factors
- 8.7% of singleton births
- 66% of multiple births

Risk factors for PTB

Maternal, medical and pregnancy risk factors	
• Previous PTB*	Fetal fibronectin positive
• Assisted reproduction	Short cervical length
• Cigarette smoking	Genital/urinary tract infections
• Low socio-economic status	Vaginal bleeding
• High or low body mass index (BMI)	Multiple pregnancy
• Late or no antenatal care	Preterm premature rupture of membranes (PPROM)
• Uterine anomalies	Chronic/acute medical conditions
• Ethnicity (non-Caucasian)	Previous cervical trauma
• < 18 or > 35 years of age	Previous cervical surgery

*Most important historical risk factor is prior spontaneous PTB

Risk screening

History	• Comprehensive history review including maternal characteristics and previous medical/pregnancy history
Counselling	• Psychosocial needs, smoking, lifestyle, chronic disease • Involve a multidisciplinary team and refer when needed/appropriate
Bacterial vaginosis	• Offer screening and treatment to women with symptoms of BV and/or history of PTB
Bacteriuria	• Offer routine ward test urine screening and treatment to women
Transvaginal cervical length	• If history of PTB: recommend serial TVCL screening from 14–24 weeks • If low risk of PTB: consider a single TVCL measurement during mid-trimester USS

Progesterone therapy

Reduces risk of PTB in women with a history of spontaneous PTB and/or short cervix

- Consider for:
  - Singleton pregnancy from 16–24 weeks with a history of prior spontaneous PTB
  - Asymptomatic women with incidentally diagnosed short cervix in the second trimester
- Not recommended for use in multiple pregnancies

Cervical cerclage

Compared with no treatment cerclage reduces incidence of PTB in women at risk

Consider cervical cerclage for women with a history of:

- One or more prior spontaneous PTB and/or second-trimester loss related to painless/painful cervical dilation and in the absence of labour or placental abruption *or*
- Prior cerclage due to painless cervical dilation in second trimester *or*
- Cervical incompetence

Cerclage may be indicated if TVCL is less than 25 mm before 24 weeks if:

- Preterm prelabour rupture of membranes (PPROM) in a previous pregnancy *or*
- A history of cervical trauma/surgery *or*
- Prior spontaneous PTB before 34 weeks gestation *and*
- Current pregnancy singleton

Clinical assessment

Rationale: to determine risk of birth within the next 7 days

- Assess maternal and fetal wellbeing
- Review history and risk factors
  - Medical, surgical, obstetric, psychosocial
- Assess for signs and symptoms of PTL
  - Cervical effacement/dilatation
  - Pelvic pressure
  - Lower abdominal cramping/back pain
  - Vaginal loss (mucous, blood, fluid)
  - Regular uterine activity

Physical examination

- Vital signs
- Abdominal palpation
- Sterile speculum examination
  - Confirm/exclude PPROM
  - Assess cervix, liquor
  - Collect high vaginal swab for MC&S for bacterial vaginosis
  - Collect either vaginal-rectal or vaginal-perianal swab for Group B streptococcus
  - Obtain fFN test (if not contraindicated)
- Sterile digital VE
  - Unless contraindicated by ROM/placenta praevia

Fetal surveillance and investigations

- Fetal surveillance
  - FHR
  - Continuous CTG (interpret with caution if less than 28 weeks gestation)
  - USS, if feasible

- Maternal laboratory investigations
  - Collect high vaginal swab for MC&S for bacterial vaginosis
  - Collect either vaginal-rectal or vaginal-perianal swab for Group B streptococcus
  - Midstream urine for MC&S

Transvaginal cervical length

Risk of PTB increases with a shorter cervical length

- If history of PTB: recommend serial TVCL screening from 14–24 weeks
- If low risk of PTB: consider a single TVCL measurement during mid-trimester USS
- Consider therapeutic interventions when TVCL is < 25 mm

Fetal fibronectin testing

Screening test to assess the risk of PTB in next 7–14 days

Indications for **symptomatic** women with threatened preterm labour:

- Between 22+0 and 37+0 weeks gestation *and*
- Intact membranes *and*
- Cervical dilatation less than or equal to 3 cm

Indications for **asymptomatic** women, greater than 22 weeks gestation, with a history of:

- Cervical surgery/trauma *or*
- PTB in previous pregnancy *or*
- Late miscarriage in previous pregnancy

Is admission required?

- Consider admission if:
  - fFN result greater than 50 ng/mL
  - Cervical dilation
  - Cervical change over 2–4 hours
  - Ruptured membranes
  - Regular contractions
  - Further observation or investigation indicated
  - Other maternal or fetal concerns

Management

Use clinical judgement and appropriate consultation

- Admit for observation
- Consider if in-utero transfer is indicated
- Offer analgesia
- Administer corticosteroids
- Measure TVCL (if available)
- Communicate with multidisciplinary team
- Discuss plan with woman and document
- Clinical reassessment as required

In-utero transfer

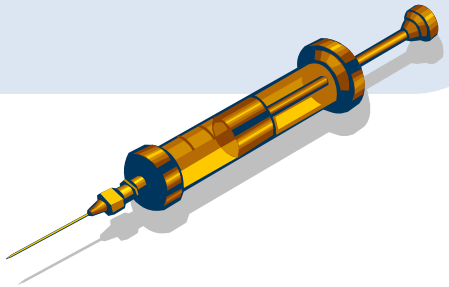
Improved neonatal outcomes with appropriate transfer

- Aim for **in-utero** transfer
- Accept a high level of risk for birth en-route if gestation less than 28 weeks
- Contact & discuss with relevant obstetric medical co-ordinator via Queensland Emergency Medical System Coordination Centre (QCC) on 1300 799 127

Antenatal corticosteroids

Reduces fetal mortality and morbidity

- Recommend with viable fetus before 35+0 weeks
- If risk of PTB persists 7 days after initial course, consider repeat dose(s)
- If maternal diabetes present, monitor blood glucose levels



Tocolysis

- May delay birth and allow:
  - In-utero transfer
  - Corticosteroid administration
  - Magnesium sulfate administration
- No evidence for prophylactic use after contractions have ceased

Tocolysis contraindicated

If prolongation of pregnancy is contraindicated

- In-utero fetal death
- Suspected fetal compromise
- Maternal bleeding/haemodynamic instability
- Lethal fetal anomalies
- Severe pre-eclampsia
- Chorioamnionitis

Nifedipine

- Tocolytic of choice
- Calcium channel blocker that relaxes smooth muscle
- Effective tocolytic with fewer side effects than other tocolytics

Antibiotics

Routine administration in *threatened* PTB with intact membranes and without infection not recommended

- If *established* PTL or *imminent risk* of PTB, give prophylactic antibiotics for GBS
- If PTL does not ensue and no other indications, then with:
  - Intact membranes, cease antibiotics

Signs of chorioamnionitis

- Temperature > 38 °C, maternal/fetal tachycardia, uterine tenderness, offensive discharge, elevated white cell count
- If intact or ruptured membranes and signs of chorioamnionitis, do not inhibit labour
- Consider hastening the birth and use broad spectrum IV antibiotics

Magnesium sulfate

Reduces the risk of cerebral palsy and protects gross motor function in the preterm infant

- **Recommend** between 24+0 and 30+0 weeks where birth is expected or planned within 24 hours
- **Consider** for women between 30+0 and 33+6 weeks
- If urgent birth indicated, do not delay birth to administer

Mode of birth

- Singleton vertex ≥ 26+0 weeks
  - Recommend vaginal birth unless caesarean section (CS) indicated for other reasons
- Breech ≥ 26+0 weeks
  - CS not generally recommended if vaginal birth imminent
- ≤ 25+0 weeks* (vertex or breech)
  - CS for fetal indications not generally recommended at less than 25+0 weeks

*Refer to Queensland Clinical Guideline: *Perinatal care at the threshold of viability*

After threatened PTL

- Provide care according to clinical circumstances
  - Prolonged admission
  - Back transfer
  - Discharge if usual criteria met (e.g. consider maternal vital signs, membrane status, contractions infrequent, cervical changes, CTG, fFN test result)
- Refer and follow-up as indicated

Provide discharge information

- Provide the woman information that:
  - Aids recognition of PTL signs and symptoms
  - Identifies risk reduction measures
  - Provides instruction about when to seek clinical advice
- Offer social worker or other relevant referral/s
- Notify GP of diagnosis and plan of care