Guideline

Rupture of the Membranes - Preterm Premature (PPROM)

Immediate Actions

- Admit to Birth Centre for assessment
- The diagnosis is usually made on clinical grounds
  - Perform a sterile speculum examination and perform Amnisure/Actim Prom
  - A digital vaginal examination should NOT be performed routinely
  - Ultrasound examination for presentation. Note- ultrasound of amniotic fluid volume may be helpful but is not diagnostic
- Administer antibiotics as per protocol, guided by gestational age
- Administer corticosteroids
- Plan ongoing management

1. Purpose

This clinical guideline outlines the requirement for the management of preterm premature rupture of the membranes (PPROM) at the Women's.

Where processes differ between campuses, those that refer to the Sandringham campus are differentiated by pink text or have the heading **Sandringham campus.**

Sandringham campus: Women with PPROM at 23 to 34 weeks gestation require transfer to the Women's or the most appropriate tertiary centre.

Risks associated with PPROM include:

- Preterm labour
- Cord prolapse
- Placental abruption
- Intrauterine infection/chorioamnionitis
- Pulmonary hypoplasia

This guideline is related to:

- Premature Rupture of Membranes at Term
- Prevention & Treatment of Early Onset GBS in Neonates

2. Definitions

Preterm Premature Rupture of the Membranes (PPROM) is the rupture of the membranes prior to 37 completed weeks gestation and prior to the onset of labour.

3. Responsibilities

Clinical staff caring for a woman with PPROM.

4. Guideline

Admit to Birth Centre.

4.1. Diagnosis

The diagnosis can usually be made on clinical grounds by a combination of history and the identification of amniotic fluid in the vagina on speculum examination.

- All women presenting with a history of PPROM must have a sterile speculum examination
- A digital vaginal examination should NOT be performed routinely

- Ultrasound examination showing markedly reduced liquor volume in the presence of normal fetal kidneys and the absence of FGR is highly suggestive of ROM, however normal liquor volume does not exclude the diagnosis
- If the diagnosis is in doubt, the woman may be admitted for pad checks

4.2. Evaluation

- General examination including pulse and temperature
- Abdominal examination
- Sterile speculum examination
  - Confirm the diagnosis through identifying the presence of liquor (Amnisure/ Actim Prom may be considered)
  - Collect cervico-vaginal swabs for microscopy and culture
  - Collect low vaginal and ano-rectal swabs for GBS
  - Estimate cervical dilatation
  - Exclude cord prolapse
- CTG
- FBE
- Birth Centre ultrasound examination if presentation is in doubt
- Consider a formal ultrasound for fetal number, weight, presentation, morphology and liquor volume
- A cervical suture, if present, should be removed immediately and submitted for culture.

4.3. Prophylaxis for neonatal respiratory distress syndrome

All women with PPROM <34 weeks gestation should be administered corticosteroids betamethasone injection 11.4mg IM Daily - 2 doses, 24 hours apart (Celestone Chronodose™)

Sandringham campus: Administer the first dose prior to arranging transfer to the Women's or a tertiary centre.

4.4. Tocolysis

Where there is no evidence of infection, the gestation is <34 weeks and corticosteroids have not been completed, if contractions are occurring, tocolysis in order to complete the corticosteroids is reasonable. Refer to the guideline: Preterm Labour - Management.

4.5. Continuing management

Delivery

- Where the gestation is > 36 weeks at presentation, induction of labour (if there are no contraindications to vaginal delivery) should be commenced at the next convenient opportunity (Refer to the procedure Rupture of Membranes at Term – Pre-Labour Midwifery Assessment and Management).
- If the woman is **GBS positive**, consideration should be given to prompt induction of labour from 32 weeks.
- In women who are being managed conservatively (see below), delivery should be effected if there is evidence of intrauterine infection, or when the gestation reaches 36 weeks.

4.5.1 Antibiotics

Antibiotic regimens

Refer to section 4.6 for further information.

The following two regimens may be used (the two regimens were used in the largest PPROM randomized controlled trials that showed a decrease in both maternal and neonatal morbidity):

(1) amoxycillin 2 g IV every 6 hours and erythromycin 250 mg oral every 6 hours for 48 hours followed by amoxycillin 250 mg orally every 8 hours and erythromycin 500 mg orally every 8 hours for 5 days.

This regimen is preferred for PPROM ≤ 32 weeks.

(2) erythromycin 250 mg orally every 6 hours for 10 days.

Amoxycillin/clavulanic acid should not be used because some studies suggest an increased risk of necrotizing enterocolitis in neonates exposed to the combination antibiotic. Amoxycillin without clavulanic acid is safe.

4.5.2 Surveillance for infection, growth

- clinical observations
  - 4/24 temperature, pulse
  - assessment of pv loss
  - assessment of abdominal pain or tenderness
- FBE weekly
- CTG twice per week
- Weekly assessment of fundal height
- Formal ultrasound examination initially, then every fortnight.

4.5.3 Outpatient management

- All women should be observed in hospital for 72 hours. If they remain well and are not in labour, they can then be discharged for outpatient management. The woman would be instructed to take her temperature t.d.s., observe PV Loss and be aware of fetal movements - returning if there are reduced fetal movements felt. They should be seen once each week in the PDCC and once each week in the antenatal clinic (complex care) with the above surveillance performed at each visit.
- Women who are referred to the hospital as in-utero transfers can be transferred back to the referring hospital at 34 weeks.

Sandringham campus:

- Women should attend the Birth Centre twice a week to be reviewed by the registrar.
- The surveillance outlined previously should be performed at each visit.

4.6 Educational Notes:

Infections are more commonly polymicrobial. Aggressive antibiotic treatment is *not* associated with increased rates of necrotizing enterocolitis or stillbirth.

Antibiotic treatment after PPROM reduces the risk of ascending infection, chorioamnionitis and delivery within 7 days. For the neonate, maternal antibiotics reduce major cerebral abnormalities, neonatal infections and the duration of neonatal intensive care unit admission.

Women presenting with PPROM should be screened for urinary tract infections, sexually transmitted infections, and group B streptococcus carriage, and treated with appropriate antibiotics if positive.

Indications for antibiotics in PPROM

PPROM may occur as a consequence of infection and is also associated with an increased risk of premature labour due to ascending infection. Therefore, antibiotics should be used for pregnancies where pregnancy prolongation is likely to result in a reduction of newborn morbidities.

PPROM at ≤ 32 weeks gestation

Antibiotics should be administered to women who are not in labour in order to prolong pregnancy and to decrease maternal and neonatal morbidity. The benefit of antibiotic treatment is greater at earlier gestational ages and more aggressive treatment with intravenous antibiotics is justified.

PPROM at > 32 weeks' gestation

Administration of antibiotics to prolong pregnancy is recommended if fetal lung maturity cannot be proven and/or delivery is not planned.

GBS carriers and those delivering before culture results are available still require intrapartum prophylaxis. Refer to GBS protocol.

The antibiotic treatment of women with established preterm labour should be reserved for those with chorioamnionitis, other established infections or GBS prophylaxis.

Once labour has commenced - Refer to the guideline GBS Colonisation Antenatal Intrapartum Strategies to Prevent Early - Onset Neonatal Sepsis.

Special circumstances

PPROM remote from term

PPROM at <22 weeks poses special problems. The survival rate in these fetuses is about 20%. While the latency period is usually increased, the fetus is at risk of pulmonary hypoplasia. There is no reliable method for predicting this outcome. Immediate delivery is a reasonable option to discuss in these circumstances at consultant level.

5. Evaluation, monitoring and reporting of compliance to this guideline

Intermittent auditing of PPROM prophylaxis and management compliance with feedback to Obstetrics and Quality and Safety Unit.

6. References

1. Mercer BM, Miodovnik M, Thurnau GR, Goldenberg RL, Das AF, Ramsey RD, et al. Antibiotic therapy for reduction of infant morbidity after preterm premature rupture of the membranes. A randomized controlled trial. National Institute of Child Health and Human Development Maternal-Fetal Medicine Units Network. JAMA. 1997 Sep 24;278(12):989-95.
2. Mercer B. Antibiotics in the management of PROM and preterm labor. Obstet Gynecol Clin North Am. 2012 Mar;39(1):65-76.
3. Kenyon SL, Taylor DJ, Tarnow-Mordi W. Broad-spectrum antibiotics for preterm, prelabour rupture of fetal membranes: the ORACLE I randomised trial. ORACLE Collaborative Group. Lancet. 2001 Mar 31;357(9261):979-88.
4. Management of preterm prelabour rupture of mambranes: an audit. How do the results compare with clinical practice guidelines? Australian and New Zealand Journal of Obstetrics and Gynaecology 2005; 45: 201-206

7. Legislation/Regulations related to this guideline

Not applicable

8. Appendices

Not applicable.

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