

Pre-labour rupture of Membranes (PROM) Preterm and Term Guidelines

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

This Guideline is for the management of all women presenting with term or preterm rupture of membranes (PROM). It contains advice on management, detection and treatment for PROM.

This guideline is for use by the following staff groups:

Midwifery and medical staff working within obstetrics

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This is the most current document and should be used until a revised version is in place

Key amendments to this guideline

Date	Amendment	Approved by:
16/12/2022	New Guideline – Merged PPRM and SROM >37 weeks	MGM
October 2024	Amended Guideline – New Flowchart	MGM

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Definitions

PROM Prelabour rupture of membranes
SROM Spontaneous Rupture of Membranes
PPROM Preterm Prelabour rupture of membranes
GBS Group B streptococcus
IOL Induction of labour
FBC Full blood count
CRP C-reactive protein
IUT In utero transfer
IAP Intravenous Antibiotic prophylaxis
DAU Day Assessment Unit
CEFM Continuous Electronic Fetal Monitoring
ANC Antenatal Clinic

Introduction

PROM occurs in 10% of term (37+0-42+0) pregnancies, 60% of which will labour within 24 hours.

PPROM is defined as a spontaneous rupture of the membranes prior to the onset of regular uterine contractions at 24+0 – 36+6. PPRM complicates 3% of pregnancies but is associated with a third of preterm births. Latency tends to shorten as gestational age at PPRM advances.

There is an association between ascending infection from the lower genital tract and PPRM. In women with PPRM about one third of pregnancies have positive amniotic fluid cultures. As well as risks associated with prematurity, these infants are at risk of pulmonary hypoplasia and sepsis.

Term PROM

Telephone advice

If a woman reports ruptured membranes with no contractions, she should be offered an appointment in DAU within 12 – 18 hours, providing she feels well, the liquor is clear, fetal movements are normal, no vaginal bleeding present, and it is a single fetus in cephalic presentation. If she has any concerns before this she should be advised to contact triage and be invited in for assessment of maternal and fetal wellbeing.

If there is any uncertainty regarding the diagnosis of PROM she should be invited in for a speculum examination to confirm or exclude the diagnosis.

All women who call with PROM or are seen and PROM is confirmed should be offered immediate Induction of Labour and should be informed that:

- There is a slightly increased risk of serious neonatal infection (1% rather than 0.5% for women with intact membranes)
- 60% of women with pre-labour rupture of membranes will go into labour within 24 hours
- IOL is appropriate approximately 24 hours after the rupture of membranes

On arrival in DAU/Triage/CMW

- Obtain maternal history including past medical and obstetric history and confirm gestational age
- Full antenatal assessment, including fetal and maternal observations and abdominal palpation to confirm lie and presentation. Measure SFH if appropriate.

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- Assess fetal wellbeing – check FHR/CTG as required and enquire about fetal movements
- Do not carry out a speculum examination if it is certain that the membranes have ruptured.
- Speculum examination should be performed to confirm rupture of membranes if the diagnosis is uncertain. If liquor is seen, then treat as SROM. If liquor is not evident then perform Eliprom. If positive then treat as SROM. If negative then assume membranes are still intact. On the rare occasion that Eliprom is negative but the history is very suggestive of SROM, discuss with the registrar/Consultant on call regarding an on-going plan.
- Vaginal examination should be minimised unless really indicated (e.g. If the woman appears to be in labour)

Do not routinely offer a low vaginal swab or measurement of C reactive protein (CRP)

Indications for immediate IOL

- **Maternal choice** – offer immediate IOL to all women with PROM
- Maternal Pyrexia
- Presumed Fetal Compromise (senior review to make plan for safest mode of delivery)
- Meconium stained liquor
- Blood-stained liquor
- Group B Streptococcus
- HIV positive mother.
- Unstable presenting part
- 42+0
- Consideration should also be given for immediate IOL in those women with HCV and HBV

Evidence of infection in mother

If chorioamnionitis is clinically suspected, refer to [Chorioamnionitis Suspected/diagnosed](#):

- Screen for sepsis
- Commence antibiotics
- Make plans for delivery by most appropriate route depending on clinical situation and patient wishes.
- Inform NICU before delivery

Expectant management – advice for going home (appropriate if single cephalic fetus with normal movements, FH and normal maternal observations and mother desires expectant management)

Until IOL is commenced or spontaneous labour established, including those women who choose expectant management beyond 24 hours, the following advice should be given:

- To observe for fever and check temperature 4 hourly whilst awake
- To inform if any change in colour or smell of vaginal loss
- To observe fetal movements
- To return immediately if any change in fetal movements or feels unwell
- That sexual intercourse may be associated with an increase in infection but that bathing and showering isn't
- If labour has not started 24 hours after rupture of membranes birth should take place where there is access to neonatal services and that the woman should stay in hospital for at least 12 hours after the birth.

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- Fetal movement and heart rate should be assessed at initial contact and then every 24 hours after PROM while the woman is not in labour

Induction of labour is appropriate 24hrs after rupture of membranes (RCOG and NICE) and this should be booked with the antenatal ward. Midwife in charge should be made aware of these cases.

Immediate IOL

If a woman chooses immediate IOL, she should be admitted and induction commenced at the earliest opportunity.

Care in labour for women with PROM

- If no evidence or signs of infection, antibiotics are **not** required (RCOG 2012)
- CEFM is advised for PROM > 24 hours
- **Antibiotics plus full assessment are required if signs of infection (e.g. maternal pyrexia) (please also refer to the guideline 'management of suspected chorioamnionitis')**

Method of IOL

Discuss with women and explain procedure with benefits and risks all pathways clearly discussed and documented

Oxytocin augmentation is the preferred method of IOL due to lower risk of chorioamnionitis. If dinoprostone (Propess®) 10 mg PV is requested by the woman, full counselling should take place by a senior obstetrician.

Care of the baby

- Asymptomatic term babies born to mothers with PROM >24 hours should be observed for at least 12 hours for:
 - Temperature
 - Respiratory rate
 - Heart rate
 - Feeding
 - General condition
- Additional investigations might be required if signs of infection. As Per [Reducing the Risk of Group B Streptococcal Infection - Local Guideline](#)
- Advise women to inform healthcare professionals immediately if they have any concerns about their baby's wellbeing, especially in the first 5 days.

Management of women with PPRM

PPROM complicates up to 3% of pregnancies and is associated with 30-40% of preterm births. It can result in significant neonatal morbidity and mortality, primarily from prematurity, sepsis, cord prolapse and pulmonary hypoplasia. There are also risks associated with chorioamnionitis and placental abruption.

The median latency period after PPRM is 7 days and tends to shorten as the gestational age at PPRM advances.

Initial assessment and management

- **All** women should be invited in for immediate assessment
- History – gestation (ultrasound confirmed), parity, timing/colour/odour of vaginal loss, presence of abdominal pain and/or contractions, fetal movements, relevant medical history
- Check maternal observations; temperature, pulse & blood pressure. Measure and plot SFH if not done within last 2 weeks

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- Ascertain presentation of fetus abdominally – if uncertain or non-cephalic presentation confirm by scan and confirm presence of fetal heart.
- Check fetal heart with pinnards/sonic aid and perform CTG (Intermittent Auscultation if <28 weeks).
- Perform an USS if there is uncertainty about the presentation.

Diagnosis

- Confirm the diagnosis of PPRM by maternal history followed by use of sterile Speculum examination and or Eli prom. See Appendix 1 for process
- Perform urine analysis +/- MSU.
- Ultrasound scan (USS) examination should not be used to confirm diagnosis. (Normal LV does not exclude PPRM). There are no randomised controlled trials to support the use of frequent USS or Doppler assessment to improve pregnancy outcome. This should only be arranged after discussion with Consultant.
- HVS to be taken at this stage and performed weekly if decide on conservative management.
- FBC should be checked on admission and performed weekly if decide on conservative management.
- C reactive protein (CRP) may need to be considered on clinical grounds in certain circumstances.
- AVOID VAGINAL EXAMINATION on assessment unless labour suspected or there is evidence of fetal distress.
- Inform Neonatal intensive care unit – if <27 weeks (singleton) or <28+0 (Multiples) will likely require IUT if appropriate
- Observe for infection: 4 hourly FHR, maternal pulse, temperature.

Counselling women with PPRM (as per preterm labour guideline)

- See Preterm Labour guideline for information regarding extremes of viability.
- Women with PPRM who have no contraindications to continuing the pregnancy should be offered expectant management until **37 weeks**. A Cochrane review in 2017 found no difference in neonatal sepsis but increased risk of RDS, ventilation, neonatal mortality, NNU admission and delivery by caesarean section in patients that were delivered immediately compared with expectant management until 37 weeks.

Prophylactic Antibiotics

- Antibiotics should be prescribed if a definite diagnosis of PPRM has been made. DO NOT commence if uncertainty regarding diagnosis of ROM.
- Erythromycin 250mg 6 hourly for 10 days or until established labour, whichever is shorter (if allergic to macrolides consult Consultant Microbiologist)
- Co-amoxiclav is not recommended for women with PPRM because of concerns with necrotising enterocolitis.
- Prophylactic antibiotics should be discontinued once delivered.
- Intrapartum antibiotic prophylaxis should be offered for all as prematurity and rupture of membranes >18 hours are risk factors for early onset GBS infection of newborn. Please also see guideline for the prevention of early-onset neonatal group B streptococcal (EOGBS) disease

Antibiotic Treatment in case of Chorioamnionitis/Sepsis

Chorioamnionitis		
1st Line	Non-Severe Penicillin Allergy	Severe Penicillin Allergy
Benzylpenicillin IV 2.4g QDS AND Metronidazole 500mg IV 8 hourly AND Gentamicin IV	Cefotaxime 2grams 6 hourly AND Metronidazole 500mg IV 8 hourly	Vancomycin IV* AND Metronidazole 500mg IV 8 hourly AND Gentamicin IV**
Antenatal Sepsis		
1st Line	If cephalosporin or severe penicillin allergy:	
Cefotaxime 2 g intravenous infusion in 100 ml sodium chloride 0.9% every 6 hours AND Metronidazole 500 mg IV 8 hourly	Vancomycin IV* AND Metronidazole 500 milligrams intravenous infusion over 20 to 30 minutes three times a day AND Gentamicin IV**	
Postnatal Sepsis		
1st Line	Non-severe penicillin allergy	Severe penicillin allergy
Co-amoxiclav 1.2 grams IV TDS	Cefotaxime + Metronidazole as per antenatal guidelines above.	Vancomycin, Metronidazole and Gentamicin , as per antenatal guidelines above.
Severe Sepsis		
Add-in: Clindamycin IV 1.2 grams QDS to the above regimens		
*Vancomycin prescribing guidelines: https://app.eolasmedical.com/organisation/landing/null?organisationId=ORG%23staging-worcestershire-acute-hospitals-nhs-trust%231f9077df-6392-4e35-8221-c8b0e1f47ee4&fileId=FILE%23d4bb3628-d89c-4822-9d7d-d11a4220bb01&origin=section		
**Gentamicin prescribing guidelines: https://app.eolasmedical.com/organisation/landing/null?organisationId=ORG%23staging-worcestershire-acute-hospitals-nhs-trust%231f9077df-6392-4e35-8221-c8b0e1f47ee4&fileId=FILE%23ae80b262-eef6-4688-8dd1-8fce7025c32b&origin=section		

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Steroids

There is strong evidence that maternal steroids reduced the incidence and severity of respiratory distress syndrome, intraventricular haemorrhage, necrotising enterocolitis, and neonatal death. Therefore, steroids should be given if there is high risk of a pre-term birth.

- **The recommended gestation range for giving maternal corticosteroids is 24 to 34+6 weeks:**
 - At <24 weeks- may be used at individual instigation of a Consultant (Obs/Neonatologist).
 - 24+0 and 34+6 weeks - **Offer** steroids
 - 35+0 and 36+6 weeks – **Consider** balance of risks & benefits (short term respiratory benefits for the neonate but increased likelihood of neonatal hypoglycaemia)
- **Dose:**
 - In the UK it is recommended that 24 mg dexamethasone phosphate is given intramuscularly in two divided doses of 12 mg 24 hours apart or four divided doses of 6 mg 12 hours apart.
 - An alternative is 24 mg betamethasone given intramuscularly in two divided doses of 12 mg 24 hours apart.
 - The 2nd dose of steroids should be administered 24 hours after the first dose, but can be given between 12 and 24 hours if circumstances dictate this to be more practical.
- Diabetic women receiving steroids are at risk of hyperglycaemia. For these women steroids should be given in liaison with diabetic team and will likely need sliding scale.
- Consider a single repeat course of maternal corticosteroids for women less than 34+0 weeks of pregnancy who:
 - have already had a course of corticosteroids when this was more than 7 days ago, and
 - are at very high risk of giving birth in the next 48 hours.
 When offering or considering maternal corticosteroids, discuss the benefits and risks with the woman (and her family members or carers, as appropriate)
- Contraindications include sepsis, tuberculosis and porphyria. It should be used with caution in uncontrolled diabetes in liaison with diabetic team.

NICE clearly advises use of steroids in the case of PPROM, however caution should be exercised in a woman who is unwell or septic from chorioamnionitis or other infection. In this case discuss with the on-call consultant.

Tocolysis

Tocolysis in patients with PPROM is not recommended. A Cochrane review from 2014 found that tocolysis was associated with increased need for ventilation support. For mothers before 34 weeks gestation, tocolysis was associated with increased risk of chorioamnionitis.

If IUT is planned, then tocolysis until the receiving hospital is reached is advised.

Magnesium Sulphate for neuroprotection

In women with PPROM who are in established labour or having planned birth within 24 hours, IV magnesium sulphate should be offered between 24+0 – 29+6 weeks. NG25 recommends this, evidence of reduction in cerebral palsy. Consider giving between 30+0 – 33+6 weeks – consultant decision. See Appendix 2 for dosing.

Outpatient management

- **Women with PPROM can be considered for outpatient conservative management only after rigorous individual selection by a consultant obstetrician and if the baby is in the cephalic presentation.**
- Outpatient monitoring should be considered only after a period of at least 48 hours of inpatient observation. The aim is to prolong pregnancy to 37 weeks if safely possible.
- During this time women must be advised on signs and symptoms of chorioamnionitis (pyrexia, offensive or green/yellow discharge, decreased fetal movement, abdominal pain regular contractions, feeling unwell or flu-like symptoms) and **should present immediately** if develops any of these.
- Weekly clinical review on DAU/ANC.
 - LVS should be taken if any change in colour or smell of discharge (no evidence of benefit for routine weekly LVS).
 - Continue to perform weekly FBC/CRP (but be aware of their low sensitivity and specificity in identifying chorioamnionitis).
 - Check maternal T/P/BP, FH/CTG, reinforce symptoms to report.
 - Senior obstetrician review if abnormality in any of above.
- Women should be advised to buy a thermometer and check their temperature twice daily at home.
- Repeat USS for liquor volume assessment is not indicated. USS/umbilical artery Doppler may be required if there are concerns about fetal wellbeing.

Contra-indications to expectant outpatient management

- Maternal pyrexia i.e. temperature over 37.5 C.
- Maternal tachycardia over 90 beats/minute.
- Fetal compromise (reduced fetal movements, IUGR).
- Abnormal fetal heart rate on auscultation followed by abnormal CTG.
- Meconium stained amniotic fluid.
- Ante-partum haemorrhage.
- Hypertension.
- Multiple pregnancy.
- Non-cephalic presentation.
- Transport difficulties to the hospital, women fail to keep appointments.
- Any clinical deviation from the norm should be reported to medical staff as the woman may not be appropriate for expectant management.

Timing of Delivery

- Induction should be offered from 37 weeks gestation in absence of GBS
- In the case of GBS:
 - The perinatal risks associated with preterm delivery at less than 34 weeks are likely to outweigh the risks of perinatal infection
 - For those at more than 34 weeks it may be beneficial to expedite delivery
- The timing and decision for delivery should be made by the Consultant after review of the individual case. (2017 Cochrane review conclusions are influenced by trials examining late PPROM (34-36+6) and it is less clear whether conservative management until 37 weeks is appropriate for PPROM at earlier gestations – guideline to remain under frequent review)

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Mode of delivery

- Aim for vaginal delivery.
- Caesarean section should only be performed for obstetric indications or maternal choice.

Induction / Augmentation of Labour

- After decision for IOL, perform a cervical assessment.
- Intrapartum antibiotic prophylaxis should be offered for all as prematurity and rupture of membranes >18 hours are risk factors for early onset GBS infection of newborn. Please see page 7 and the guideline for the prevention of early-onset neonatal group B streptococcal (EOGBS) disease
- Perform CEFM when in labour/from ARM+/- commencement of oxytocin
- Senior obstetric review is indicated immediately if signs of infection develop (maternal pyrexia, rising inflammatory markers, fetal tachycardia or rising baseline)

Spontaneous labour in PPRM

- CEFM if $\geq 28/40$
- IAP with Benzylpenicillin unless allergic
- Regular maternal observations, more frequent if signs of sepsis
- Inform neonatal unit
- Magnesium sulphate if 24-29+6/40 or until 34/40 after consultant discussion

Care of baby

As for term PROM if asymptomatic, plus any additional plan made by neonatal team.

Postnatal management

Pregnancies complicated by PPRM are associated with a higher risk of PTSD (14% v 2% antenatally, 17% v 3% 6 weeks postnatally). Offer these women and their partners additional emotional support.

Future pregnancies

Pregnancies complicated by PPRM are at increased risk of PPRM in subsequent pregnancies (OR 8.7). Manage these patients in the dedicated Preterm Prevention ANC in future pregnancies.

Appendix 1: Triage checklist for Term Spontaneous Rupture of Membranes between 37+0 to 42+0 weeks (SROM)

- Take a full history and confirm gestational age.
- Assess maternal wellbeing---check maternal observation and perform abdominal palpation including SFH if appropriate.
- Assess fetal wellbeing----inquire about fetal movement and check fetal heart rate.
- Confirm SROM either clinically or using a speculum or Eliprom test.
- Confirm GBS status and need for antibiotics in labour.

- Recommend IOL/delivery as soon as possible if:
- Signs of chorioamnionitis.
 - GBS infection or plan for antibiotics in labour.
 - Meconium or blood stained liquor.
 - CTG concerns
 - Concerns about fetal movement
 - 42 weeks
 - Fetal growth restriction
 - Any clinical concerns

- Discuss 60% of women will go in labour within the first 24 hours after SROM
 - Explain there is a slightly increased risk of serious neonatal infection (1% rather than 0.5% for women with intact membranes) and this risk may increase over time.
 - Discuss options if no indication for IOL ASAP
 - 1- IOL ASAP -----Admit to ANW or DS and inform the coordinator midwife
 - 2- IOL after about 24 hours-----send home with 4 hourly temperature check and red flag signs, add to IOL book and inform the coordinator midwife.
- If patient is kept on waiting beyond 24 hours, advise to attend after 24 hours for further discussion and plan by senior doctor.

Appendix 2: Magnesium Sulphate infusion for neuroprotection (24+0-29+6 or up to 33+6 at Consultant discretion)**Prior to commencing magnesium sulphate**

Provide the woman with information about the treatment.

Obtain verbal consent.

Check and document patella reflex present and respiratory rate >12/min.

Dose, dilution and infusion rate to be checked by two registered midwives.

Loading dose

4g (8ml) Magnesium Sulphate in 42ml 0.9% sodium chloride injection, intravenous infusion over 20 minutes via a syringe driver.

Maintenance dose

5g (10ml) Magnesium Sulphate in 40ml 0.9% sodium chloride injection, intravenous infusion at rate of 1g/hour (10ml/hour).

Continue for 24 hours or until delivery.

During infusion**Maternal observations**

Check patella reflex, RR, HR and BP every 15 mins for first 2 hours, then hourly thereafter.

Monitor oxygen sats continuously with pulse oximeter, record hourly.

Measure and record urine output (UO) hourly – should be >25mg/hour. Catheterise if not already in situ.

Medical review +/- stop infusion if reflexes become absent, RR falls <12/min or UO <25ml/hour. Calcium gluconate should always be available to treat acute magnesium toxicity – give 10ml of 10% via slow iv injection (over 5 minutes) after stopping the Magnesium Sulphate infusion.

Fetal observations

CEFM throughout infusion – may see a lower baseline, reduced variability and reduced reactivity during Magnesium Sulphate infusion. However, if CTG abnormal a medical review is still warranted.

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Monitoring

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: <i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i>	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
	PROM advice given on Triage – Offer of immediate IOL	Assessment of notes	Quarterly	Senior Midwife	LW Forum	Quarterly

References

- Thomson AJ, on behalf of RCOG. Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation. Green-top Guideline No. 73, June 2019
- Bond et al. Planned early birth versus expectant management for women with preterm prelabour rupture of membranes prior to 37 weeks' gestation for improving pregnancy outcome. Cochrane Database of Syst Rev 2017:CD004735
- Preterm labour and birth NG 25. Published date: 20 November 2015 Last updated: 02 August 2019

Contribution List

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
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This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Maternity Governance Meeting
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