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MP032(i):Pre-Labour Rupture of Membranes at Term (PROM)

Term ROM is now covered by Pre labour ROM at Term

MP032(ii): Pre-Term Pre-Labour Rupture of Membranes (PPROM)

Maternity Protocol: MP032

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Guideline Reviewer:	Katie Fraser / Giulia Lorina Ryan Watkins
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Cross reference:	**MP008** Infections in pregnancy including GBS **MP009** Guidelines for the Management of HIV in Pregnancy and Neonatal period **MP026** BSOTS **MP031** Pre-term Labour **MP033** Induction of labour **MP034** Vaginal Birth After Caesarean Section (VBAC) **MP037** Fetal heart monitoring **MP046** Breech & ECV **MP045** Pyrexia in Labour and Sepsis

Table of Contents

Term Pre-Labour Rupture of Membranes (PROM)

This is now covered by Pre labour ROM at Term.

1 Process for Induction of Labour (IOL):

1.1 If Bishop score is <6 and mother and fetus are well, IOL management can allow 1 x Prostin PV (1 dose only) followed by Oxytocin augmentation

1.2 Bishop score is >6 – direct augmentation with Oxytoxin

1.3 For further information on IOL see Maternity Protocol MP033: Induction of Labour

Pre-term Pre-Labour Rupture Of Membranes (PPRoM)

2 Definition and Background

2.1 Rupture of membranes (RoM) before 37 weeks gestation and prior to onset of labour

2.2 PPRoM complicates up to 3% of pregnancies and is associated with 30–40% of preterm births.

2.3 Risks associated with PPROM resulting in significant neonatal morbidity and mortality include

2.3.1 Those associated with prematurity
2.3.2 Sepsis
2.3.3 cord prolapse
2.3.4 pulmonary hypoplasia

2.4 Risks associated with poor maternal outcome including chorioamnioitis and sepsis.

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

3 Phone Assessment

3.1 When the pregnant woman / person phones into labour ward or triage a midwife or obstetrician should undertake a verbal risk assessment.

3.2 All pregnant women / people reporting suspected PPRoM should be invited in for assessment as soon as possible.

4 Clinical Assessment

4.1 On arrival the midwife should complete a thorough assessment using BSOTS MP026 including history, confirm gestation and presence of fetal movements.

4.2 The attending midwife should check all baseline observations, and start CTG monitoring if >26-weeks gestation

4.3 All pregnant women /people with suspected PPRoM should be reviewed by a member of the obstetric team.

4.4 After confirming the history, and gaining informed consent the reviewing obstetrician should

4.4.1 Undertake sterile speculum examination to confirm pooling of liquor in vagina and rule out meconium or cord prolapse.

4.4.2 If an obstetrician is unavailable despite request and a speculum is required urgently a senior midwife can undertake this procedure.

4.4.3 If on speculum examination, no amniotic fluid is observed, clinicians should consider performing an Amnisure® test should be used to guide further management (the diagnosis of PPROM can be equivocal in 10–20% of cases) Refer to MP032(i) section 3.4 for information in using Amnisure ®

4.4.4 The role of ultrasound assessment of amniotic fluid volume is unclear however persistent anhydramnios is associated with increaseed risk of severe pulmonary hypoplasia.

4.4.5 Do not perform digital vaginal examination despite contractions unless

- the cervix appears to be dilated on speculum examination or
- there is an indication to start immediate augmentation of labour i.e. meconium more than grade 1 or signs of chorioamnionitis

5 Initial Care Planning and Management (all gestations)

5.1 The ongoing care plan following the confirmation of PPRoM will depend on gestation.

5.2 In the immediate management, it is important to rule out any current infection.

5.3 A combination of clinical assessment, parental inflammatory and infection markers and fetal wellbeing should be used to diagnose chorioamnionitis:

5.3.1 Take FBC (WCC) and CRP *

5.3.2 Perform HVS

5.3.3 Review CTG assessment of fetus *

5.4 Where the situation is stable, there are no signs of infection or immediate delivery:

5.4.1 Admit to the ward for ongoing assessment for 48-72 hours. During admission, vital signs, including pulse, blood pressure, respiratory rate and temperature, should be recorded on Badgernet.

5.4.2 Arrange fetal growth scan and assess liquor volume.

5.4.3 Inform neonatal team – all pregnant women / people with PPROM should have the opportunity to meet with a neonatologist to discuss their baby's care

*Do not use WCC, CRP or CTG in isolation - if the results of the clinical assessment or any of the tests are not consistent with each other, continue to observe the woman and consider repeating the tests

5.5 Antibiotics (antenatal)

5.5.1 Offer all pregnant women / people with confirmed PPROM oral erythromycin 250 mg 4 times a day for a maximum of 10 days or until in established labour (whichever is sooner).

5.5.2 For those with PPROM who cannot tolerate erythromycin or in whom erythromycin is contraindicated, use Amoxilciln 500mg TDS for a maximum of 10 days or until in established labour (whichever is sooner).

5.5.3 Do not offer co-amoxiclav as prophylaxis for intrauterine infection for PPROM.

5.6 Antibiotics (intrapartum)

5.6.1 Advise and prescribe IV benzylpenicillin to all women / people in established pre-term labour refer to MP031 Pre-Term Labour for regimes.

5.7 Antenatal corticosteroids

5.7.1 Refer to MP031 Pre Term Labour Guideline

5.7.2 A single course of corticosteroids can be given to any women with threatened pre-term labour from 23 - 34^{+6}/40 gestation.

5.7.3 The recommended course of corticosteroids is: Dexamethasone 12mg IM – 2 doses given 12 hours apart OR Betamethasone 12mg IM – 2 doses given 12 hours apart

5.7.4 Corticosteroids may sometimes be considered at gestations from 22+0 to 22+6, but this decision should be taken by the obstetric and neonatal consultants after consideration of active management in line with the BAPM framework

5.7.5 If antenatal corticosteroids have been given at gestations less than 26^{+0} weeks, then consideration should be given to a further course if there is another admission with suspected preterm labour under 32^{+0} weeks if delivery is considered highly likely to happen. More than 2 courses of steroids is not recommended

5.7.6 The optimum effect of a steroid course is seen if delivery occurs between 24 hours and 7 days after the last dose. A course of steroids can be initiated if delivery is anticipated within 24 hours as there is still a beneficial effect on neonatal death.

6 Magnesium Sulphate

Please refer to MP031 Pre-Term Labour
Administration of IV MgSO4 should be given to those in established preterm labour or where preterm birth is expected / being planned within the following 24 hours.

6.1 Magnesium sulphate reduces cerebral palsy and motor dysfunction in the baby - with greatest benefit before 30+0 weeks of gestation.

6.1.1 Offer MgSO4 to those between 24+0 and 29+6 weeks diagnosed with PPROM and in established labour

6.1.2 Offer MgSO4 to those between 24+0 and 29+6 weeks with PPROM and expecting / planning delivery within 24 hours

6.1.3 MGSO4 should be considered when preterm birth is anticipated between 30+0 and 33+6 weeks and should be discussed with the neonatal team and the parents.

6.2 Tocolysis is not recommended for cases with PPROM.

6.3 Amnioinfusion is not recommended as part of routine clinical practice.

7 Pre-Term Pre-Labour Rupture of Membranes between 34 - 36+6 Weeks

7.1 If cephalic presentation, and in the absence of concerns for infection, or meconium, discuss with the benefits and risks of induction of labour and conservative management beyond 37 weeks.

7.2 If breech presentation – recommend elective caesarean section at 37 weeks after discussing risks and benefits of both IOL and conservative management as well as options of LSCS and vaginal birth. See Breech Guideline MP046

7.3 Timing of birth and ongoing plan for care should be discussed with each pregnant woman / person on an individual basis and in conjunction with theneonatal team. It is important to consider the whole clinical picture including the level of liquor seen on the USS.

7.4 All discussions should be clearly documented. It should also be clear that the pathway may change in case of any deterioration in the clinical picture / fetal wellbeing.

7.5 Conservative management until 37-weeks, may reduce the risks of prematurity and reduce the risk of respiratory support for the newborn. It may also reduce the risk of caesarean section. However, there is increased risk of chorioamnionitis.

7.6 Conservative management beyond 37-weeks is not recommended. If a pregnant woman / person wishes to extend the pregnancy please refer to the obstetric consultant in ANC.

7.7 Expediting delivery – induction of labour reduces the risk of developing chorioamniotnitis, but does not reduce the risk of neonatal infection. Risks include increased risk of caesarean

section.

7.8 For those opting to await delivery at 37-weeks, on discharge from the department:

7.8.1 Give Erythromycin TTO to continue for 10-days in line with Section,

7.8.2 Organise weekly DAU follow up for repeat infection markers and fetal monitoring

7.8.3 Fortnightly scans for fetal growth and assessment of amniotic fluid

7.8.4 Book a date for IOL – explain that date may be expedited if the clinical picture changes.

7.8.5 Observations at home and other advice should be same as for term PROM

7.8.6 Advise that deterioration in the clinical picture may require expediting delivery earlier than the planned 37-weeks

8 Pre-term Pre-labour Rupture of Membranes between 24 and 33+6 Weeks

8.1 Admission and investigations should be carried out as per Section 4.1 - 4.7.

8.2 Offer antibiotics as per section 4.8 (an alternative in case of allergy) for 10 days .

8.3 Offer a course of antenatal steroids as above Section 4.9 if labour appears likely or planned within the next 7-days.

8.4 6-hourly assessment of maternal observations, FHR monitoring as per the CTG guideline (CTG should be attempted from 26-weeks), colour of liquor and uterine tenderness

8.5 If there is meconium, signs of chorioamnionitis, fetal distress, or maternal sepsis delivery should be expedited with steroid, antibiotic and magnesium sulphate cover as per Section 4

8.6 Where there is no indication for immediate delivery, aim to manage the pregnant woman / person conservatively with regular reviews.

8.7 Upon discharge from the department:

8.7.1 Give Erythromycin TTO to continue for 10-days in line with Section,

8.7.2 Organise weekly DAU follow up for repeat infection markers and fetal monitoring

8.7.3 2-weekly scans for fetal growth / dopplers and assessment of amniotic fluid

8.7.4 Observations at home and other advice should be same as for term PROM

8.7.5 Advise that deterioration in the clinical picture may require expediting delivery

8.8 Timing of birth plans should be discussed with each pregnant woman / person on an individual basis:

8.8.1 Whilst aiming to reach 37-weeks of gestation, decisions around the timing of

delivery should be dynamic - based around the clinical picture, fetal wellbeing and liquor volume.

8.8.2 Decisions around timing of delivery should involve the MDT with obstetric and neonatal input and review in the obstetric ANC at least every 4-weeks.

8.8.3 There is a recognised increased risk of lung hypoplasia where there is prolonged reduced liquor volume. For this reason, it may not be in the best interest of the baby to continue with conservative management even in the absence of infection.

8.8.4 All discussions must be clearly documented in Badgernet and the MDT be aware of the ongoing plan. Such patients may be referred to / discussed at the Complex Care Meeting

9 Pre-Term Pre-Labour Rupture of Membranes between 22 and 23+6

9.1 Please refer to the BAPM pathway and Pre-term pathway for decisions around management at this gestation. It is imperative that decisions at this gestation are made with complete involvement with the senior MDT and with involvement from the pregnant person.

9.2 Where appropriate steroids, magnesium sulphate and antibiotics may be offered and active management as per those with gestation >24-weeks in Section 6.

10 Extreme pre-term pre-labour rupture of membranes before 22-weeks

10.1 For those with PPRoM <24-weeks, discussions around the ongoing management must be based primarily on concerns for maternal wellbeing – eg. Signs of sepsis

10.2 Where there are concerns for maternal health, termination should be advised.

10.3 Where there are no concerns for maternal wellbeing, discussions with families must be open and clear regarding the unknown likelihood of survival and the likelihood of poor fetal / neonatal outcome.

10.4 In the absence of concerns for maternal wellbeing, options should still include termination of pregnancy, or conservative management as per those with PPRoM >24 weeks.

10.5 The pregnant woman / person must be informed that the clinical picture can change and there may be changes to management plans at short notice.

10.6 Evidence is lacking for outcomes of babies where PPRoM occurs at these early gestations and discussions should include:

- Increased risk of pulmonary hypoplasia – particularly where PPRoM occurs <20-weeks
- Increased risk of chorioamnionitis
- Low rates of neonatal survival (around 40%) for cases where PPRoM occurs before 20-weeks – irrespective of latency from RoM to delivery

- One study showed that 70% of pregnancies affected by PPROM prior to 24 weeks gestation resulted in live births with two-thirds of these live births surviving to over a year of age. Concluding that there is better prognosis than reported in similar literature.

11 References

RCOG guideline No 73: Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation

RCOG guideline No. 7: Antenatal corticosteroids to reduce neonatal morbidity and mortality. October 2010

http://labguide.fairview.org/showtest.asp?testid=4104

NICE guideline CG 149: Neonatal infection (early onset): antibiotics for prevention and treatment

Pregnancy Outcome for Membrane Rupture Before 24 Weeks Gestational Age
Newcastle University, Institute of Health and Society, Anna Jackson*, Dr Martin Ward-Platt

J Perinatology. 2004 Oct;24(10):611-6.Expectant management in spontaneous preterm premature rupture of membranes between 14 and 24 weeks' gestation
Sandy J Falk [1], Laura J Campbell, Aviva Lee-Parritz, Amy P Cohen, Jeffrey Ecker, Louise Wilkins-Haug, Ellice Lieberman

Appendix A: A Guide for DAU Follow Up for Pre-Term Pre-Labour Rupture of Membranes

- Weekly review is advised but the pregnant woman / person must have open access to call in for review where they have any concerns for raised temperature, change in colour, odour, or consistency of PV loss, concerns for fetal movements, feeling unwell, experiencing pain, or other concern.
- Confirm history and plan from notes
- Ask for any new symptoms, colour and smell of liquor, fetal movements
- Check parental observations, perform abdominal palpation observing for any uterine tenderness
- CTG
- Check recent blood, swab and scan results
- Re-take FBC, CRP and organise a suitable time to speak to parent with results
- Discuss with doctor on call regarding ongoing plan.

Appendix B : Summary Table for management planning for conservative management PPROM and PROM

Gestation at PPROM	**Admission**	**Antbiotics** **Erythromycin 10 days or until labour whichever sooner**	**Steroids** **Dexamethasone 12mg 12-24hr apart**	**Scans** **Growth, dopplers, LV**	**MDT review**
<22 weeks	RSCH	TBC following discussion with MDT / neonatal team (BAPM pathway)	TBC by MDT	At time or PPROM and 4-weekly thereafter unless concerns for fetal movements	At time of PPRoM and 4-weekly thereafter
22-24+6	RSCH	Recommended after discussion with neonatal team	Recommended after discussion with neonatal team May consider second dose upto 32 weeks of suspected PTL	At time or PPROM and 4-weekly thereafter unless concerns for fetal movements	At time of PPRoM, 28-weeks 4-weekly thereafter.
24+6 – 34-weeks	RSCH	Recommended	Recommended	At time or PPROM and 4-weekly thereafter unless concerns for fetal movements	
34	PRH / RSCH	Recommended	Recommended	2- weekly scan until delivery	

Appendix C: Summary Table for management planning for those in established labour, or where pre- term delivery planned within 24 hours (i.e. meconium, or concerns for infection)

Gestation at PPROM	**Admit**	**Antibiotics**	**Steroids** **Dexamethasone 12mg 12-24hr apart**	**Scans**	**MgSO4**	**MDT review**
<22 weeks	RSCH		N/A	N/A	N/A	N/A
22-24+6	RSCH	Recommended after discussion with neonatal team where actively managing	Recommended after discussion with neonatal team where actively managing May consider second dose	For EFW if possible Presentation	Recommend ed after discussion with neonatal team where actively managing	See BAPM pathway To establish plans for intrapartum monitoring and resuscitation
24+6 – 33+6	RSCH	Recommended	Recommended	For EFW / presentation	Recommend ed	
34 – 36+6	PRH / RSCH	Recommended	Recommended upto 34+6	EFW / Presentation	N/A	