Management of PPROM
(Premature Prelabour Rupture of the Membranes) Guidelines

The guidance uses the term “woman” (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male or non-binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women’s health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and midwifery services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender identify does not align with the sex that they were assigned at birth.

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Brief Summary of Document:	To provide safe care and management of women, birthing people and their babies who experience prelabour rupture of membranes between 22+0-36+6 weeks gestation through correct identification and management.
Scope	For healthcare professionals within the health board to manage the care of pregnant women or birthing people who experience preterm pre labour rupture of membranes. The vast majority of midwifery service users are women and we already have language in place to reflect this, however as a healthboard we recognise that not all people who give birth will identify as being female and therefore aim to use gender inclusive language wherever possible. 'The term "woman/women" in the context of this document is used as a biologically based term and is not intended to exclude trans and non-binary people who do not identify as women.

To be read in conjunction with:	RCOG Green-top Guideline No.73: Care of Women Presenting with Suspected Preterm Prelabour Rupture of Membranes from 24+0 Weeks of Gestation . Available at https://obgyn.onlinelibrary.wiley.com/doi/pdf/10.1111/1471-0528.15803 NICE Guidelines : Neonatal infection (early onset): antibiotics for prevention and treatment. Available at https://www.nice.org.uk/guidance/cg149/chapter/1-Guidance#intrapartum-antibiotics-2 662 - Magnesium Sulphate for Neonatal Neuro-protection Guideline 648 - Threatened Preterm Labour Including Fetal Fibronectin and Tocolytic Clinical Practice Guideline 839 - Antenatal Electronic Fetal Monitoring Guideline
Patient Information:	Corticosteroids in pregnancy to reduce complications from being born prematurely When your waters break prematurely

Owning group	Obstetric Guideline, Audit and Research Group

Reviews and updates		
Version no:	Summary of Amendments:	Date Approved:
1	Guideline update	14/09/2017
2	Updated	23/04/2019

3	Updated	15/10/2021

Glossary of terms

Term	Definition
CLC	Consultant-led care
C&S	Culture and sensitivity
CRP	C reactive protein blood test
FBC	Full blood count
FMU	Fetal medicine unit
G&S	Group and Save blood test
HVS	High vaginal swab
IUT	Inter-uterine transfer
LVS	Low vaginal swab
MSU	Midstream urine
TVS	Trans-vaginal scan
USS	Ultrasound scan

Keywords	PRROM, Preterm labour, Liqour, chorionamnionitis, rupture of the membranes.

Contents

1. Introduction

Pre-term pre-labour rupture of membranes (PPROM) complicates up to 3% of pregnancies and is associated with 30–40% of preterm births.

PPROM can result in significant neonatal morbidity and mortality, primarily from prematurity, sepsis, cord prolapse and pulmonary hypoplasia. In addition, there are risks associated with chorioamnionitis and placental abruption.

2. Definition

Preterm pre-labour rupture of membranes is defined as rupture of membranes below 37 week's gestation and before the onset of regular uterine contractions.

3. Objectives

This guideline comprises recommendations relating to the diagnosis, assessment, care and timing of birth of women presenting with suspected PPROM from 22+0 to 36+6 weeks of gestation. It enables healthcare providers to follow care pathways dependent on the woman's gestation.

4. Risk Factors

- Smoking: heavy cigarette smoking increases the risk of P-PROM. The increased risk is greatest at gestational ages lower than 28 weeks
- Previous preterm delivery.
- Vaginal bleeding (at any time during the pregnancy).
- There is an association between lower genital tract infection and P-PROM.
- Around a third of women with P-PROM have positive amniotic fluid cultures

5. Complications

- The three main causes of neonatal mortality associated with P-PROM are prematurity, sepsis and pulmonary hypoplasia.
- Umbilical cord prolapse
- Placental abruption
- Oligohydramnios
- Retained Placenta
- Primary and Secondary postpartum haemorrhage

6. Diagnosis

The diagnosis of spontaneous rupture of the membranes is made by:

- Full maternal history assessment
- a sterile speculum examination demonstrating liquor
- If, on speculum examination, no amniotic fluid is observed, clinicians should consider the use of an Amnisure test.
- A vaginal examination should be avoided unless presenting with uterine activity and unable to assess cervical dilatation by speculum.

7. Investigations

Observations to monitor for chorioamnionitis including:

- Temperature, respiration rate, oxygen saturation levels, blood pressure and maternal pulse recorded on MEOWS chart
- Palpation of abdomen to determine presence of uterine activity and abdominal tenderness
- Urinalysis and send MSU (C&S)
- High Vaginal swab (taken at time of speculum examination) should be sent for culture and sensitivity.
- Blood: FBC (x1 purple vial) CRP (x1 gold vial) and consider G&S

If chorioamnionitis is suspected, then commence sepsis six bundle and protocols (A *combination* of clinical assessment, maternal blood tests (C-reactive protein and white cell count) and fetal heart rate should be used to diagnose chorioamnionitis in women with PPROM; these parameters should not be used in isolation).

8. Management

Antibiotic prophylaxis:

Erythromycin 250mg QDS should be commenced and taken for 10 days or until the woman is in established labour (whichever is sooner)

PPROM and extreme prematurity

Neonatologists should be informed once the diagnosis of PPROM has been made and if delivery is anticipated to ensure that the neonatal unit has the appropriate staff and facilities to care for the neonate should delivery occur.

Neonatologists should be asked to attend to assess the modifiable risk factors as outlined in British Association of Perinatal Medicine for a management plan for suitability for transfer. They should discuss with the mother and family the risks and consequences of extreme prematurity and appropriate resuscitation in conjunction with gestation and clinical presentation, taking into consideration the family's wishes.

In utero transfer to a maternity facility co-located with a NICU should be considered at the earliest opportunity when active management is planned. All such transfers should be discussed with the receiving team, and parents should be made aware that the prognosis (and therefore management) may be revised based on the clinical condition of the fetus or mother following the in-utero transfer to a centre with greater experience of managing extremely preterm birth.

Communication and agreed plans should be documented in full (including in the maternity handheld record) and, when relevant, clearly communicated with the receiving centre. The agreed plan of management should be revised regularly if pregnancy continues. Parents should also be helped to appreciate that the baby may be born in unexpectedly poor, or unexpectedly good condition, and the implications of this for what care might be appropriate.

For pregnancies from 22+0 to 22+6 weeks of gestation decisions should not be based on gestational age alone. Within a multiple pregnancy, the risk may differ between fetuses and so each should be considered as an individual. This means that appropriate management may not be the same for each baby, even with the same gestational age.
If birth occurs prior to 22+0 weeks of gestation active obstetric and neonatal management is not appropriate.

Corticosteroid Administration:

- The decision to administer corticosteroids at gestations less than 24+0 weeks should be made at a senior level taking all clinical aspects into consideration (RCOG 2019).
- For women between 23^{+0} and 23^{+6} weeks of pregnancy who are in suspected preterm labour or established preterm labour or have PPROM discuss with the woman (and her family members or carers as appropriate) the use of maternal corticosteroids in the context of her individual circumstances. (NICE 2016).
- Women who have PPROM between 24+0 and 33+6-weeks' gestation should be offered corticosteroids
- Corticosteroids can be considered up to 35^{+6} weeks' gestation.

< 32 weeks' gestation singleton pregnancy
< 34 weeks' gestation in multiple pregnancy
if Estimated Fetal weight is < 1.6kg
(Regardless of uterine activity)

- IUT to a tertiary unit with neonatal facilities suitable for gestation. Discussion with parents regarding suitability of NICU facilities and specialist care.
- Steroids: betamethasone 12mg IM x 2 doses in total with an interval of 12-24 hours interval dependant on the clinical picture.
- Consider MgS04 regime dependant on gestation (see guideline 662: Magnesium Sulphate for Neonatal Neuroprotection).

≥ 32 weeks' gestation singleton pregnancy
≥34 weeks' gestation multiple pregnancy weeks gestation
or estimated fetal weight ≥ 1.6kg

- Admit for monitoring symptoms and uterine activity for a period of 48-72 hours.
- 4 hourly observations recorded on MEOWS chart - consider sepsis bundle if out of normal parameters
- Monitor for fetal well-being and signs of fetal tachycardia
- Monitor for uterine activity and tenderness
- Daily observation of liquor (colour, amount and offensiveness)
- Consider steroid administration in consultation with the woman
- USS to determine presentation, growth and liquor volume, (consider cervical length)

Following 48-72 hours of inpatient monitoring

The decision to offer outpatient care to women with PPROM, following a period of in-patient care, should be made on an individual basis. Factors including past obstetric history, support at home and distance from the hospital should be taken into account in discussion with the woman about her preferences.

Outpatient monitoring:

- Consultant led care
- Attend DAU for weekly bloods: Full Blood Count and C Reactive Protein and Low Vaginal Swab (clinicians taking samples are responsible for chasing results in a timely fashion).
- Fortnightly liquor volume and arterial Doppler USS with follow up review. Growth scans at the discretion of the Obstetric Consultant.

Women to:

- To be informed of normal parameters of temperature and pulse rates and to self-monitor temperature and pulse rates 4 hourly in waking hours.
- Self-monitor liquor (amount and colour)
- monitor fetal movements in regular pattern
- to attend GGH triage if feels unwell, has altered pattern of fetal movements, offensive or green coloured liquor

9. Delivery

Women with a history of PPROM should be offered IV benzyl penicillin once in established labour until delivery regardless of gestation (NICE 2012).

In the absence of other complications Women with PPROM from 36/40 may deliver at Bronglais Hospital from 37 weeks gestation should be made on an individual basis following discussion with the Consultant Obstetrician. Women with complications or PPROM prior to 36 weeks or who go into preterm labour should deliver at Glangwili Hospital.

Women whose pregnancy is complicated by PPROM and who have no contraindications to continuing the pregnancy should be offered expectant management until 37+0 weeks; timing of birth should be discussed with each woman on an individual basis with careful consideration of patient preference and ongoing clinical assessment.

Timing of Birth for women with evidence of colonisation of Group B Streptococcus (GBS) in the current pregnancy or in previous pregnancies.

For those women with evidence of colonisation of Group B Streptococcus (GBS) in the current pregnancy or in previous pregnancies**,** the perinatal risks associated with preterm delivery at less than 34 +0 weeks of gestation are likely to outweigh the risk of perinatal infection. For those at more than 34 +0 weeks of gestation it may be beneficial to expedite delivery if a woman is a known GBS carrier. The benefits and risks associated with induction at this gestation should be discussed with the woman in detail by a consultant obstetrician and timing of birth made on an individual basis.

10. References

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Royal College of Obstetricians and Gynaecologists Guideline For Use Of Antenatal Corticosteroids

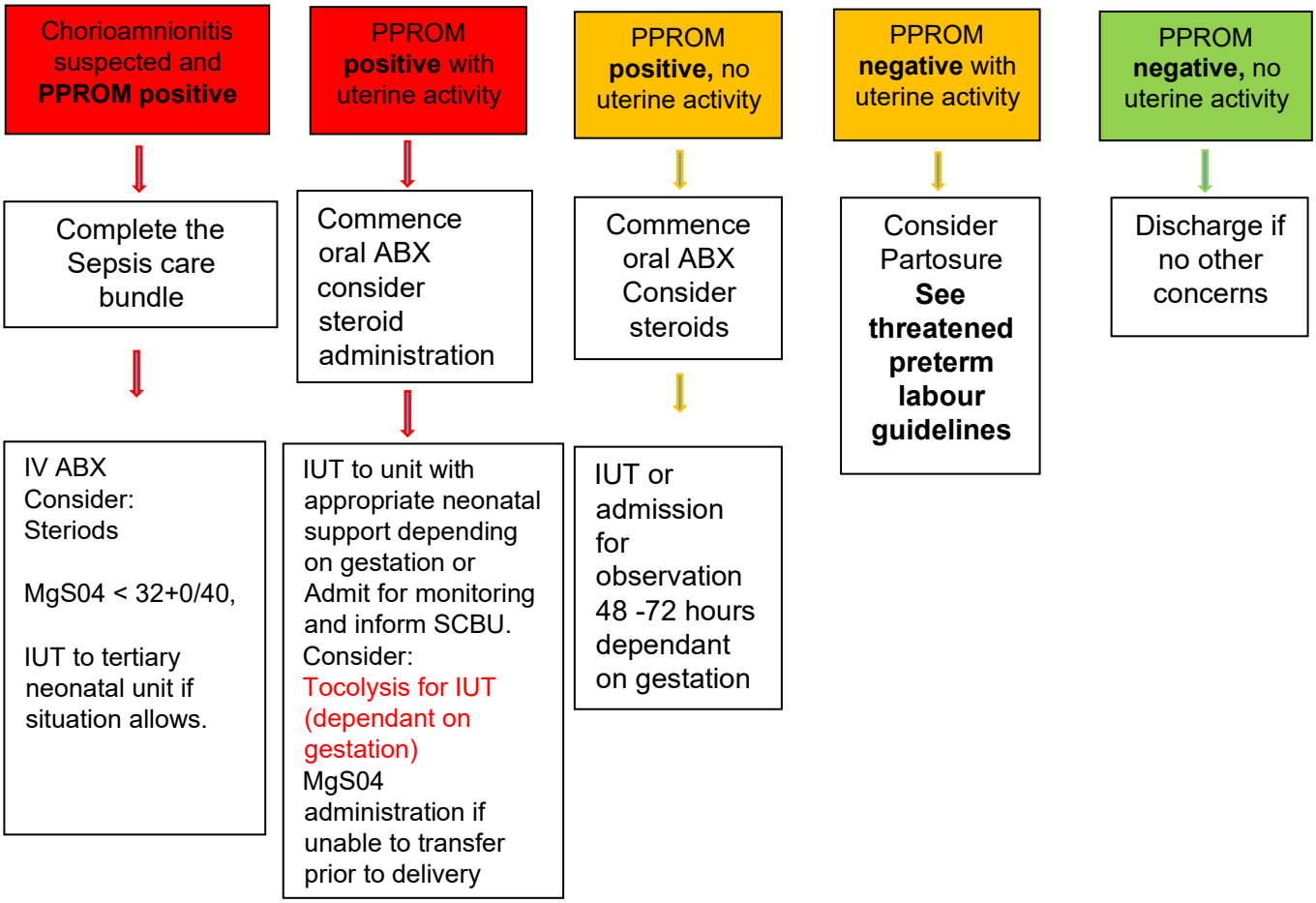
Royal College of Obstetrics and Gynaecology: Prevention of Early-onset Neonatal Group B Streptococcal Disease (2017) https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/1471-0528.14821
Green-top Guideline No. 36

https://speciality.medicaldialogues.in/rcog-guideline-for-use-of-antenatal-corticosteroids

11. Flow chart for Suspected Pre-term Pre-Labour Rupture of Membranes > 23 +0 < 32/40 (< 34 weeks' multiple pregnancy)

Assess for abruption/ immediate fetal or maternal compromise

Full Antenatal assessment which includes, Observations (recorded on Meows) abdominal palpation, FH auscultation / CTG (if appropriate) speculum or by Amnisure (if no obvious SROM).
Bloods: FBC, CRP, (consider G&S if likely to deliver). HVS to be taken, MSU to be sent.



For all women diagnosed with **Positive PPROM** regardless of gestation

Oral ABX = erythromycin 250mg QDS for 10 days (if not allergic to penicillin).
maternal observations every four hours /monitor for signs and symptoms of infection.

Consider intrapartum antibiotic prophylaxis using intravenous benzylpenicillin to prevent early-onset neonatal infection for women in preterm labour if there is suspected or confirmed intrapartum rupture of membranes > 18 hours. If the woman is allergic to penicillin, offer clindamycin unless individual group B streptococcus sensitivity results or local microbiological surveillance data indicate a different antibiotic (NICE 2012)