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Standard Operational Procedure for

MANAGEMENT OF PRETERM PRELABOUR RUPTURE OF MEMBRANES (PPROM)

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SUMMARY OF MANAGEMENT OF WOMEN WITH PPROM

Diagnosis
Sterile speculum +/-Actim PROM
Digital examination ONLY if labour suspected

Initial observations and investigations
Maternal HR, Temp, BP, RR
Vaginal swab high or low
FBC, CRP, G&S
EFM (>26/40)
USS for presentation +/- EFW

Actions
Admission
Erythromycin PO 250mgs QDS for 10 days if<37/40
Steroids if <36/40
Rarely tocolysis (discuss with consultant)
Discuss with Paediatric Team/SCBU
Check GBS status (all previous swabs and baby results) and inform SCBU

Ward management
Maternal observations 4 hourly, liquor checks
Daily EFM (>26/40)
USS every 4 weeks
Chase outstanding results (vaginal swabs)
Daily medical review
Continue erythromycin for 10 days or until delivery (whichever shorter)

IOL after 34 weeks (consultant decision)

If ascending infection signs
Senior medical review
Transfer to LW and discuss with SCBU
Change broad spectrum AB as per sepsis protocol
Consider urgent delivery

If spontaneous labour
Senior medical review
Check presentation with USS
Transfer to LW and discuss with SCBU
Continuous EFM
Intrapartum Antibiotics Prophylaxis (IAP) for ALL

For outpatient management
See guidance

PPROM and antibiotics in labour
All women with PPROM should have IAP in confirmed labour or at IOL irrespective of GBS status.

1. Purpose/Background:

Preterm prelabour rupture of membranes (PPROM) is defined as membrane rupture prior to 37 weeks gestation without signs of labour. This guideline refers to PPROM before 37 weeks of gestation.

PPROM occurs in approximately 3% of pregnancies and is responsible for a third of all preterm births. Management is aimed at offering the neonate the best chances of survival with the least possibility of morbidity. The main complications are ascending intrauterine infection (chorioamnionitis), preterm labour, the delivery of a compromised neonate and long-term disability. There are other less quantifiable effects on the women and her family – being in hospital and delivering a baby before she feels 'ready', and possibly being anxious about spending many weeks visiting the SCBU.

The aetiology of preterm rupture of membranes is multifactorial and poorly understood.

Ascending infection is thought to be a major cause of PPROM as well as a consequence, so evidence of maternal and fetal infection should always be sought.

The objective of management is to prolong the pregnancy as long as it is safe to do so, in order to give the fetus time to mature.

Clinical experience suggests that within 48 hours of PPROM 1/3 of women will spontaneously labour and deliver and 1/3 will deliver before 34 weeks. 30-40% of preterm births are preceded by rupture of the membranes and management should take this into account.

The SOP is being updated to make it consistent with the national GBS guideline major update.

2 Definitions

PPROM: Preterm Prelabour Rupture of Membranes

EFM: Electronic Fetal Monitoring

FBC: Full Blood Count

CRP: C – Reactive Protein

MSU: Mid-stream urine

CTG: Cardiotocogram

SCBU: Special care baby unit

SpD: Specialty Doctor

MDAU: Maternity Day Assessment Unit

USS: Ultrasound scan

WCC: White Cell Count

GBS: Group-B Streptococcus

SROM: Spontaneous Rupture of Membranes

IP: Intrapartum

IAP: Intrapartum Antibiotic Prophylaxis

The purpose of this guideline is to provide guidance relating to the diagnosis, investigation and management of women with (P.P.R.O.M.) with an aim to reduce maternal and neonatal morbidity and mortality.

2. SCOPE

This document is for use by all obstetricians and midwives and it applies to all women cared for by St Mary's Hospital Maternity Services.

3. Responsibilities

All medical and midwifery staff have a responsibility to:

- Access, read, understand and apply this guideline.
- Review the guideline in line with trust and national recommendations.
- Ensure that all relevant staff can access the guideline.

4. Procedure:

4.1 Diagnosis:

Clinical history has an accuracy of 90% for the diagnosis of PPROM and should not be ignored.

Sterile speculum examination: this is always indicated to confirm SROM. Repeated digital examination increases the risk of ascending infection, reduces the time to delivery and should be avoided if possible. However, if there is uterine activity, digital examination is indicated to diagnose labour.

Positive Actim PROM in a vaginal sample indicates presence of amniotic fluid test where speculum is inconclusive.

Ultrasound should be performed by the on call registrar to confirm fetal presentation if this is not clear from speculum or abdominal examination. In extreme prematurity

ultrasound estimation of fetal weight is recommended as this helps discussions about survival and early management if delivery occurs.

4.2 Investigations and initial management following confirmation of PPROM

- **EFM routinely** after 26 weeks gestation.
- **FBC, Group and antibody screen.** The Group and antibody screen should be sent given the high incidence of subsequent labour and preterm caesarean delivery. The FBC should be taken before steroids are given.
- **CRP** should be sent as a baseline for subsequent comparison if chorioamnionitis is suspected.
- **Maternal observations;- including urinalysis.** A mid stream urine sample (MSU) should be sent unless dipstick is clear.
- **A high or low vaginal swab** should be taken and the culture result confirmed as soon as possible.
- **Ultrasound** should be performed by the on-call registrar to confirm fetal presentation. An estimated fetal weight is useful information for the neonatologists especially if <28/40 and should be performed by sonographer when feasible. At extreme prematurity (22-26 weeks of gestation), the ultrasound may also give some prognostic information about the likelihood of pulmonary hypoplasia. All patients at gestation of <24 weeks should be discussed with the consultant.
- **Corticosteroids.** Betamethasone 12mg intramuscular (IM), 2 doses 24 hours apart (A 12 hour interval between doses may be used if the clinical situation deems it necessary) should be administered between 24 and 35+6 weeks and Consider steroid up to 38^{+6} if the Caesarean section was planned. Steroids should be considered from 23 weeks of gestation if active management of baby has been agreed with neonatal team, consultant on call, and the patient. In exceptional cases a rescue dose may be considered following discussion with the consultant.
- **Tocolysis.** In general, tocolysis in women with PPROM is rarely indicated, other than to allow for safe in-utero transfer or to complete steroid therapy. It should only be considered after full discussion with the obstetric consultant. Maintenance tocolysis should not be used. . This is only considered in the absence of clinically apparent infection and fetal compromise. There are

increased concerns about sepsis and the possible detrimental effect for both fetus and mother of delaying delivery. If tocolysis is considered for extreme prematurity (23-25 weeks) or in-utero transfer, it should be discussed with the on call consultant.

- **Antibiotics.**

  ORAL ERYTHROMYCIN 250MG QDS FOR 10 DAYS, **OR UNTIL DELIVERY** (whichever shorter) for all women <37 weeks of gestation.

  Oral Penicillin should be considered where Erythromycin contra–indicated

  The routine use of antibiotics for women with PPROM is supported by the conclusions of the Cochrane systematic review (2003, updated in 2010), which showed that the administration of antibiotics after PPROM is associated with a significant delay in delivery and a reduction in maternal and neonatal morbidity. There is, however, no statistically significant reduction in perinatal mortality. From the available evidence, erythromycin appears to be the best choice (used in the largest trial – ORACLE); Co-amoxiclav should be avoided as it may be associated with increased risk of neonatal necrotising enterocolitis.

- **SCBU.** The neonatal department should be kept up to date with the progress of the mother on the ward especially if there are worrying signs and symptoms that may necessitate delivery.

  If Twin pregnancy <34wks or singleton <32 weeks consider transfer off island

  In cases of extreme prematurity, the parents should be offered counselling by a member of the neonatal team and the UHS patient information leaflet on management at the extremes of prematurity should be given.

- **Visits to SCBU.** Mothers and their partners benefit from a visit to SCBU and this should be arranged whilst they are on the ward.

- **Planned delivery.** As the gestation advances, the relative risk of continuing the pregnancy increases relative to the risk of premature birth. Elective delivery should therefore be considered after 34+0 and usually before 36+0 weeks.

  In patients with PPROM close to term (34-36 weeks) and in the absence of overt signs of infection or fetal compromise, a policy of expectant

management with appropriate surveillance of maternal and fetal well-being should be followed and IOL planned at 36 weeks.

4.3 Daily management on the ward

In general, admission to the antenatal ward is recommended. There is a high chance of spontaneous labour within the first few days following PPROM and it is generally considered safer for the mother to be close to facilities for neonatal resuscitation.

The duration of inpatient stay is a consultant's decision and should be individualised.

Whilst on the ward the following are recommended on a daily basis:

- **Maternal observations.** 4-6 hourly temperature, pulse, BP, RR (charted on MEOWS) and liquor colour check. After the first 72 hours and if all indices are reassuring then it may be appropriate to postpone maternal observations overnight to help mothers rest.
- **EFM.** Daily if >26 weeks gestation or daily auscultation if <26 weeks. EFM before 26 weeks should only be performed following careful discussion (usually by a consultant obstetrician and neonatologist) with the parents about the implications of delivery at this early gestation. The pink extreme viability proforma should be completed. Twice daily CTGs may be required if there are specific concerns about the fetus.
- **Ultrasound.** Every 4 weeks to confirm presentation, assess growth and liquor volume.
- **Antibiotics.** If signs of maternal systemic sepsis, change to broad spectrum antibiotic as per **Management of Sepsis in Maternity** SOP.
- **Daily senior medical review.** SpD or above.
- **Maternal information.** Alert and remind the mother to look for
    - symptoms and signs of ascending infection ('flu' like symptoms, uterine activity, change in character of vaginal loss and vaginal bleeding),
    - reduced fetal movements
    - cord prolapse.

4.4 Outpatient Management

Currently there is no clear evidence supporting management of PPROM either at home or on the ward.

- The mother should be on the alert and be able to respond to any signs or symptoms that suggest ascending infection or reduced fetal movements.

- The mother should check her temperature twice daily and inform the MDAU if Temp > 37.5.
- The mother should be reviewed at weekly consultant appointments to :
    - Update care plan
    - Repeat high vaginal swab.
    - Repeat full blood count and CRP
    - Monitor fetal and maternal wellbeing

4.5 Management if ascending infection is suspected

- Urgent medical review (SpD or above with appropriate senior discussion) is indicated if any of the following occur:
    - The woman feels unwell
    - Maternal pyrexia (37.5)
    - Maternal tachycardia persistently >100
    - RR >20
    - Foul smelling or meconium stained liquor
    - Uterine tenderness or contractions
    - Concerns about EFM
    - Alteration in fetal activity
- Use the **maternity sepsis screening and action tool** to facilitate identification and management of ascending infection.
- **Medical review** should include consideration of the relative risks and benefits of early delivery versus that of continuing the pregnancy. It is often helpful to discuss with the neonatal department, which should be involved at an early stage in the process of timing of delivery.
- **WCC.** This may help guide the diagnosis and trends may be more useful than absolute values. It should also be remembered that the WCC is significantly elevated in labour and by administration of corticosteroids.
- **CRP.** When there is diagnostic difficulty of infection then the trends may be more useful than absolute values.
- Local experience suggests that the most useful indicators of significant infection are *clinical signs, symptoms and EFM*.

4.6 Delivery

Consider delivery from 34wks gestation. After this time the risk of serious respiratory problems to the neonate is less than the risk of infection to the mother and baby. Decision regarding mode of delivery **must** be made by the woman's consultant.

PPROM and antibiotics in labour

GBS is often associated with PPROM and subsequent fetal and neonatal morbidity and mortality especially at very preterm gestations. The standard erythromycin prophylaxis will cover the GBS.

All women with PPROM should have IAP in confirmed labour or at IOL irrespective of GBS status.

Other important factors

Women with PPROM may have to stay in the antenatal ward for some time, causing disruption to their personal and family lives. This may be exacerbated if the pregnancy was unplanned, the women is young, has poor social support or has other young children. Visits to the SCBU coffee mornings, parent craft sessions, flexible visiting arrangements, weekend/home leave and the offer of a single room may help to make the stay less stressful.

5. Related Documents:

- Management of sepsis in maternity
- Guideline on prevention of early onset neonatal group b streptococcal disease
- Guideline for the management of preterm labour (including extremes of prematurity
- Guideline for antenatal corticosteroid therapy.
- Guideline for use of nifedipine in Premature labour

Auditable standards

What aspects of compliance with the document will be monitored	What will be reviewed to evidence this	How often	Sample size	Who will co-ordinate this	Who will they report to
-Have appropriate Antibiotic been given -Have steroids been given	Maternal notes	Yearly	10 sets	Audit midwife	LW Forum/ Audit Meeting

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9 DISCLAIMER

It is the responsibility of staff to check the Trust intranet to ensure that the most recent version/issue of this document is being referenced.

DOCUMENT HISTORY					
Date of Issue	**Version No.**	**Next Review Date**	**Date Approved**	**Director Responsible for Change**	**Nature of Change**
Feb 2011	1	Feb 2014	Feb 2011	Executive Director of Nursing and Workforce	Maternity CSG
April 2014	2	29th April 2017	29th April 2014	Executive Director of Nursing and Workforce	Reviewed no changes
July 2018	3	July 2021			Additions and reference changes
Jan 2019	1 SOP	Jan 2022	28thJan 2019	MCSG	Review in line with current national guidance