PRE-LABOUR RUPTURE OF MEMBRANES AT TERM

DEFINITION

Pre-labour rupture of membranes (PROM) is rupture of the membranes prior to established labour in women at 37 completed weeks gestational age. The overall incidence rate is 8%\(^1\). Most women labour spontaneously, with approximately 70% by 24 hours, 90% by 48 hours and 2-5% will not labour by 72 hours\(^2\). Despite the rarity of major complications, PROM is associated with increased maternal and neonatal morbidity\(^3\).

DIAGNOSIS

THE DIAGNOSIS OF SPONTANEOUS RUPTURE OF MEMBRANES (SROM) IS BASED ON MATERNAL HISTORY. WOMEN WITH AN UNCERTAIN HISTORY OF PROM SHOULD BE OFFERED A SPECULUM EXAMINATION TO DETERMINE WHETHER THEIR MEMBRANES HAVE RUPTURED. (IT IS RECOMMENDED THAT WOMEN LIE FLAT ON THEIR SIDE FOR 30 MINUTES PRIOR TO THE EXAM.) DIGITAL VAGINAL EXAMINATION IS TO BE AVOIDED, AS IT IS STRONGLY ASSOCIATED WITH INCREASED RATES OF CHORIOAMNIONITIS.\(^4\)

Nitrazine testing (amnicator) may facilitate the diagnosis where there is uncertainty. Amnicator testing has sensitivity of 81.8%, specificity of 83.3%, positive predictive value of 52.6% and negative predictive value of 96.2%.\(^5\) False positive results are possible with urine, blood, semen, bacterial infection; for example, bacterial vaginosis or trichomonas. In the absence of observed liquor on speculum and a negative amnicator result, it is reasonable to assume the membranes are intact.

Please note: this section is under review and does not currently form part of the guideline – Maternity Operational Group 2019

MANAGEMENT

An assessment of all women with PROM at term, to check maternal and fetal wellbeing, is recommended before deciding on management. (This does not necessarily need to be performed in hospital). It is recommended that all women with signs of infection or chorioamnionitis are offered immediate intervention.
An obstetric consultation is recommended for women with PROM ‘before 24 hours’ (Section 88 referral guidelines\(^2\))

Vaginal examinations (VEs) have been shown to be the strongest predictor of clinical chorioamnionitis for women with PROM, with increasing rates from 3-4 VEs (OR 2.06\(^4\) to > 8 VEs OR 5.07) and are to be avoided. Regardless of the management option if examination is clinically indicated and will change management a sterile speculum examination is recommended. Digital examinations should be minimised.

- Women with **signs of infection in association with PROM at term** require careful assessment and the **immediate offer of intravenous (IV) Broad Spectrum Antibiotic Therapy in a secondary/tertiary facility (Appendix 1)**. If vaginal birth is appropriate it is recommended that they are offered an induction of labour as soon as possible.

- If **meconium stained liquor is present**, an assessment, CTG and an obstetric review in a secondary/tertiary unit is required and IOL should be expedited. In a primary unit, the women require a telephone consult with the obstetric team at secondary/tertiary unit and the recommendation of immediate transfer.

- Women with **Group B Streptococcus (GBS) risk factors require the offer of both induction of labour and intrapartum prophylactic IV antibiotics**. Refer to GBS guideline WCH GLM0032.

- **GBS risk factors:**\(^7,8,9\)
  - a previous GBS-infected baby
  - GBS bacteriuria of any count during the current pregnancy
  - intrapartum fever ≥ 38°C
  - membrane rupture ≥ 24 hours (unless recent negative ‘GBS swab’)
  - GBS colonisation in current pregnancy, unless negative GBS swab (at ≥37 weeks, combined vaginal-rectal, ‘selective broth’ laboratory process used)

- **Expectant management** is appropriate for women **who are well and have no risk factors.**\(^3,6,10,11\)

- Women **suitable for expectant management** who subsequently **go into spontaneous labour and give birth before 24 hours** has elapsed since ROM do **not require** prophylactic IV antibiotics.

- Women who **do not go into spontaneous labour within 24 hours of ROM** have developed a risk factor for early onset GBS infection and **require the offer of an induction of labour and prophylactic IV antibiotics** as soon as practicable. Commence antibiotics at the beginning of the induction process.

- Prophylactic antibiotics for neonatal GBS infection are not indicated for women who have had a negative GBS swab within the previous five weeks (Campbell et al 2004 & CDC 2010), although they may choose to have them.

- Women suitable for expectant management who spontaneously labour but **do not give birth by 24 hours after ROM** require the **offer of prophylactic IV antibiotics at 24 hours post ROM.** Prophylactic antibiotics for GBS are not indicated for women who have had a negative GBS swab within the previous five weeks.\(^7,8,9\)

- Induction of Labour – Dinoprostone can be used for cervical ripening. It is recommended to commence oxytocin at 12 hours however if the cervix remains unfavourable consider leaving the
Dinoprostone insitu for a further 12 hours. Dinoprostone should not be continued for longer than 24 hours. Refer to Induction of Labour guideline WCH GLM0035.

**INTRAPARTUM MANAGEMENT IN PRIMARY UNIT SETTING**

Women in spontaneous labour, who do not give birth before 24 hours after ROM, with no clinical evidence of infection to mother or baby require consultation with CWH medical staff. This is with a view to consider the offer of prophylactic antibiotics in the primary unit.

**MATERNAL FEVER AND SUSPECTED CHORIOAMNIONITIS**

If maternal fever is present, temperature, pulse and fetal heart rate auscultation should be monitored every 4 hours at least, or more frequently if indicated and IV antibiotic therapy commenced (see below).

Women with fever or signs of chorioamnionitis require immediate treatment, intervention and birth expedited.

Clinical signs of chorioamnionitis include maternal fever (≥ 38 °C) AND 2 OR MORE of the following:

- abdominal tenderness
- offensive vaginal discharge
- offensive liquor
- maternal tachycardia
- fetal tachycardia

Where there are clinical signs of infection, appropriate specimens including bloods for: CBC, CRP and cultures as well as MSU and HVS are required before commencing antibiotic treatment.

**ANTIBIOTIC REGIME IN CASES OF SUSPECTED CHORIOAMNIONITIS**

*(regardless of Group B Strep status)*

<table>
<thead>
<tr>
<th>Antibiotic therapy</th>
<th>Amoxicillin IV 2 g stat (in 100 mL 0.9% Sodium Chloride over 30 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>then Amoxicillin IV 1 g 4 hourly until birth (in 20 mL 0.9% Sodium Chloride via slow push)</td>
</tr>
<tr>
<td></td>
<td>AND Gentamicin 5 mg/kg OD IV infusion (if more than one dose required contact CWH pharmacist on Pager 5009 for advice on monitoring serum concentrations)</td>
</tr>
</tbody>
</table>
AND Metronidazole 500 mg IV 8 hourly in labour
(to consult with pharmacist if required postnataley)

If the woman is allergic to penicillin
(replace penicillin component with)

Clindamycin IV 900 mg 8 hourly
(this is a refrigerated drug)
REFERENCES

1. Dare MR, Middleton P, Crowther CA et al. Planned early birth versus expectant management (waiting) for prelabour rupture of membranes at term (37 weeks or more). Cochrane Database of Systematic Reviews 2006, Issue 1, Art. No.: CD005302. DOI: 10.1002/14651858.CD005302.pub2.


APPENDIX 1

Suspected Pre-Labour Rupture of Membranes (ROM) at Term

LMC assess woman - history of ROM (if uncertain consider speculum exam and amniocentesis test), temperature, pulse, blood pressure, uterine tenderness, signs of infection (no vaginal exam unless concern about cord prolapse)
LMC assess baby – Fetal heart rate, movements, size, presentation and level of engagement, liquor colour and odour

Confirmed Pre-Labour ROM at Term

No Fever
Clear liquor

Maternal Fever +/-
signs of chorioamnionitis

Consult obstetric team
Broad spectrum IV antibiotics
Facilitate birth
Notify NICU

Meconium

CTG
Consult obstetric team
IOL as soon as possible
Dinoprost SR 10 mg inserted for 12 hrs, then oxytocin infusion if labour has not commenced
If cervix unfavourable at 12 hrs consider leaving for a further 12 hrs
Do not continue longer than 24 hrs

Antenatal risk factors for early onset Group B Strept (GBS) infection
Previous baby with GBS infection
Positive GBS urine culture this pregnancy
Positive GBS swab this pregnancy (vaginal/rectal 35-37 weeks)
Over 24 hours post SROM at time of diagnosis

Assess eligibility for expectant management – Well woman and baby

Offer expectant management
Monitor maternal temp and wellbeing
Fetal movements and liquor colour
Anticipate spontaneous labour

Prolonged ROM over 24 hours

In labour – offer IV antibiotics unless birth imminent (under 1 hour)
After birth – If less than 2 doses of IVABs given, observe baby closely for 24 hours as per Neonatal Handbook

Ref.238575