Rupture of Membranes in Pregnancy

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Contents

1. Purpose of guideline

This guideline establishes the expected management of women with rupture of membranes (ROM) to ensure the wellbeing and safety of both the woman and her unborn baby within Auckland District Health Board (ADHB).

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2. Guideline management principles

All women are to be seen by their Lead Maternity Carer (LMC) and referred to Women's Health as required.

The LMC is responsible for the initial assessment of the woman to confirm ROM, and the development of an individualised management plan that is clinically appropriate for each woman with confirmed ROM.

It should be ensured that the woman and her partner/whānau are fully aware of the clinical situation and verbal consent is obtained for the proposed management. There should be clear documentation of the counselling provided. The ADHB patient information leaflet “Pre-labour Rupture of Membranes” should be provided to the woman as a basis for discussion.

If the selection criteria are met, the woman should be given the options of induction of labour or expectant management (at home or in hospital). The team on call for Women’s Assessment Unit (WAU) may be consulted at any time in WAU, and at that point the LMC, the team, and the woman are to agree together on a management plan which is to be documented in the woman’s clinical record.

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3. Diagnosis of rupture of membranes (ROM)

On admission, the diagnosis of ROM must be established or excluded by:

a. Clinical examination

A sterile speculum examination should be offered to all women who present with obvious or suspected ROM. If obvious clear liquor is seen externally and the CTG is normal then a speculum examination may not be required. Consideration should be given as to whether the woman is in active labour or not before deciding on the need for any vaginal examination.

The woman should have been lying flat for at least 30 minutes prior to the speculum examination. The vulva is cleansed with sterile saline in the standard manner. It is not acceptable to omit cleansing. Antiseptic should not be used as it may interfere with bacteriological assessment and will render any subsequent vaginal discharge difficult to interpret. The speculum should not touch the cervix, although the cervical dilatation and the presence or absence of a prolapsed umbilical cord should be noted.

Until a definitive course of action is decided upon, a digital examination should not be performed, unless there is reason to exclude cord prolapse or malpresentation, or if delivery is considered imminent. If the diagnosis of ROM is in doubt, a repeat speculum examination after another period of lying down may be helpful.

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b. Ancillary tests

The use of nitrazine swabs (which indicate pH) does not provide more accurate diagnosis in isolation compared with visualising liquor passing through the cervix. Consideration may be given to using the newer immunoassay swabs (e.g. Amnisure and Amnioquick) if these are available. Care should be taken to read the enclosed instructions. There is some evidence that these tests, when used in conjunction with standard methods, can improve the accuracy of diagnosis.

An ultrasound examination may useful to assess fetal size, presentation and normality, and to assess liquor volume.

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4. Pre-labour ROM at term (term PROM)

This common obstetric complication is associated with hazards to both the baby and mother. Term PROM occurs in up to 10% of pregnancies. More than half of women with term PROM go into labour spontaneously within 24 hours, and about 70% within 48 hours.

The initial assessment is to be performed by the LMC either at the woman's home, the clinic, or in WAU (see Diagnosis). The following should be completed to ensure safety of a woman and her baby whilst experiencing Term PROM:

- Take history of ROM and general maternal and fetal wellbeing
- Record maternal temperature and pulse
- Abdominal palpation to confirm cephalic presentation and engaged presenting part
- CTG may be performed to assess fetal wellbeing and uterine activity (if no access to a CTG machine, intermittent auscultation and palpation for contractions is acceptable)
- DO NOT perform digital vaginal examination unless in established labour or immediately prior to commencing induction of labour (IOL)
- Sterile speculum examination to be performed with maternal consent. May not be necessary if obvious ROM. If any concern regarding occult cord prolapse then speculum examination must be done
- Vaginal and/or endocervix swabs are not routinely indicated
- Antepartum risk factors for GBS to be assessed (see algorithm)
- Ensure eligibility for expectant management (see next section)
- If woman meets the selection criteria for expectant management, provide information that allows an informed choice of expectant or active management, and ensure the woman and partner/whānau understand the risks and benefits of both options
- Give the woman the ADHB patient information leaflet "Pre-labour Rupture of Membranes; Information for women at term (37 or more weeks gestation)" and use this to guide discussion
- After diagnosis and discussion with the woman and her partner/family/whānau, a clear management plan should be documented

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a. Active management and antepartum risk factors for Group B Streptococcus (GBS) disease

For those women who have antepartum risk factors for GBS (see below), or who do not meet criteria for expectant management (see below), or who choose immediate induction of labour, please follow the guideline on Induction of Labour. Research indicates that although there is no contraindication to the use of prostaglandins for ripening of the cervix in women with Term PROM, there is less risk of chorioamnionitis and endometritis in women induced with IV oxytocin vs. vaginal PG.

Antepartum risk factors for GBS

- Previous baby with GBS infection
- + GBS low vaginal/perianal swab at 35-37 weeks
- + GBS urine culture anytime in current pregnancy

Note: GBS found on vaginal swab earlier in pregnancy is not necessarily an antepartum risk factor for GBS

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b. Expectant management at home

Women with Term PROM who meet the following criteria are eligible for expectant management at home:

- No antepartum risk factor for GBS (see above)
- Cephalic presentation and engaged
- Clear liquor
- Normal fetal movements
- Afebrile
- Not tachycardic (HR < 100 bpm)
- Has NOT had a digital vaginal examination
- Has home telephone
- Lives less than 40 minutes away
- Able to get transport to and from hospital easily

The Clinical Charge Midwife, L&BS (phone 24913), should be notified of the approximate timing of admission for IOL, which should be planned for 18 – 24 hours after ROM.

The ADHB patient information leaflet “Pre-labour Rupture of Membranes” should be given to the woman as it provides information on what to monitor and when to call the unit.

At home, 4 hourly monitoring of the following is required, and any concerns to be reported to the LMC:

- maternal temperature and pulse
- liquor
- fetal wellbeing

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c. Expectant management at hospital

Expectant management as an inpatient may be appropriate for those women who decline active management, but either choose to stay in hospital, or do not meet criteria for going home. In such cases there should be consultation with the team on call for WAU. The Clinical Charge Midwife, L&BS (phone 24913), should be notified of the approximate timing of IOL, which should be planned for 18 – 24hrs after ROM.

If the woman remains an inpatient she is to be transferred to an appropriate ward via the Duty Manager. The following observations should continue at 4 hourly intervals, and if any concerns to notify the team on call:

- maternal temperature and pulse
- observation of liquor
- Uterine activity
- FH auscultation

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d. Recommended intra-partum management to prevent early onset neonatal Group B Streptococcus (GBS) disease

- Intra-partum chemoprophylaxis must be given if there are any ante-partum or intra-partum risk factors for early onset neonatal GBS disease
  - Ante-partum risk factors – see above
  - Intra-partum risk factors – prolonged rupture of membranes of 18-24 hours or more
- Refer to GBS neonatal disease prevention guideline for advice re intra-partum antibiotics

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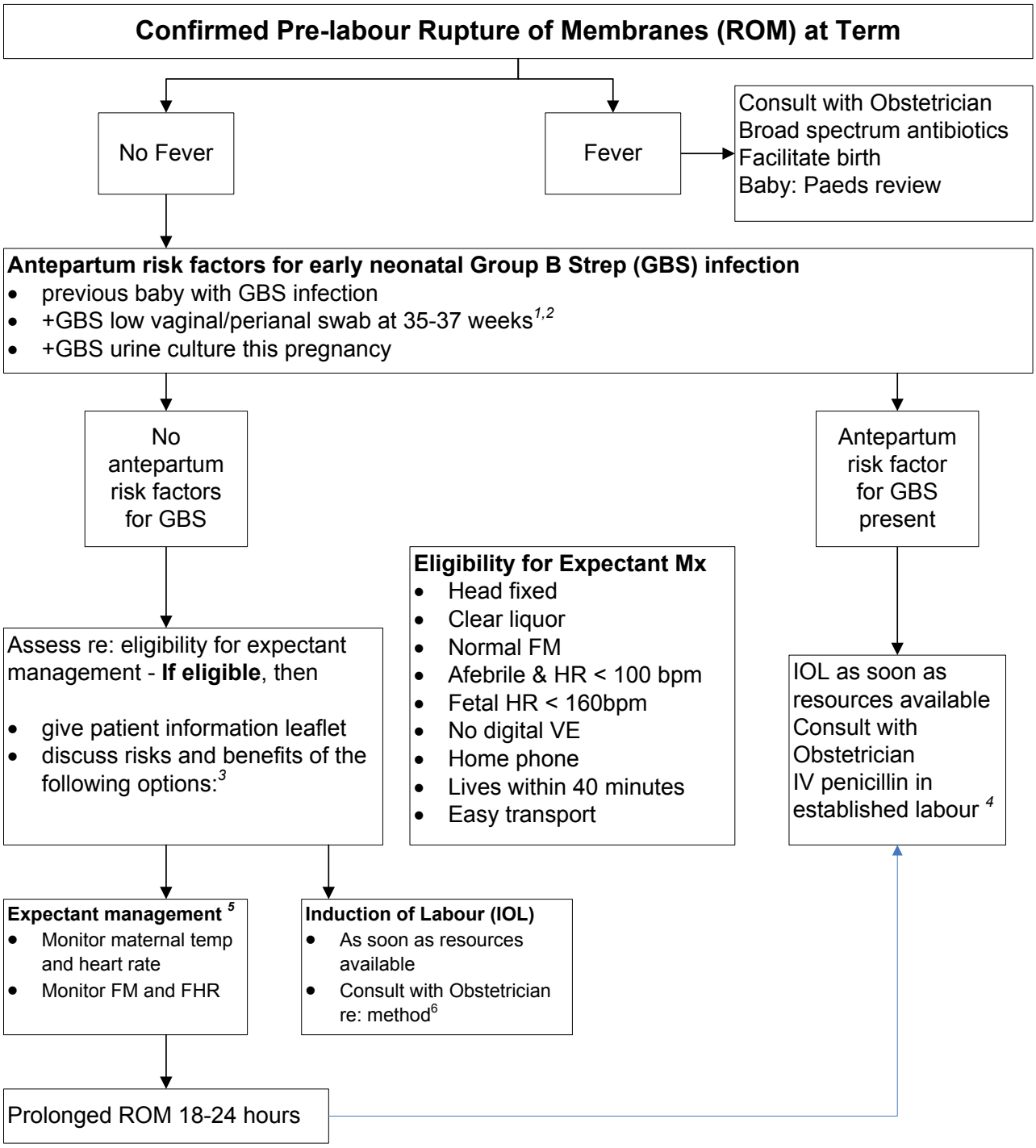
e. Algorithm



[1] It is not NW policy to routinely screen for GBS in pregnancy
[2] GBS+ swab prior to 35 weeks is NOT predictive of current colonisation
[3] Evidence supports improved outcomes with early planned birth
[4] Penicillin should be started at least 4 hours prior to birth for neonatal protection
[5] All women managed expectantly should have their baby observed for 12 hours (temp and resps and information sheet)
[6] Evidence supports less risk of infection with IV Oxytocin rather than vaginal PG

5. Preterm pre-labour ROM (PPROM)

This common obstetric complication is associated with hazards to both the baby and the mother. PPROM complicates up to 2-4% of pregnancies and is the cause of 30-40% of all spontaneous preterm births.

The risks of PPROM are:

- Neonatal prematurity and associated complications (death, respiratory distress syndrome, chronic lung disease, intraventricular haemorrhage, necrotising enterocolitis and retinopathy)
- Neonatal infection, particularly if the interval between PROM and delivery is prolonged
- Neonatal lung hypoplasia if PPROM occurs < 24 weeks, > 90% will suffer this complication if there is anhydramnios after PPROM before 18-20 weeks
- Maternal infection
- Caesarean section

The majority of women with PPROM go into labour spontaneously. There is an inverse relationship between gestational age at the time of ROM and onset of spontaneous labour. In women with PPROM near term, more than half laboured within 5 hours, and 95% within 28 hours. In women with PPROM < 26 weeks, more than half laboured within one week, and 22% remained undelivered four weeks later.

In general, the greatest risks to the fetus prior to 34 weeks gestation are the complications of prematurity. After 34 weeks the greatest risk to the fetus is infection.

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a. Initial management

An accurate diagnosis of rupture of the membranes is crucial to management. This can be difficult in PPROM at very early gestations (e.g. 24 weeks) as there is a lower liquor volume and women may not realise they are leaking liquor.

Digital examination should be avoided (unless there is a suspicion of cord presentation or prolapse) as it increases the risk of infection and does not provide more information than a speculum examination.

Low vaginal/rectal swabs should be taken in a single sweep with specific request for GBS culture. The presence of gram positive cocci on the initial Gram stain should not lead to a presumptive diagnosis of GBS – cultures must be awaited.

Swabs for Chlamydia trachomatis and Neisseria gonorrhoea should be considered in high-risk groups – see MOH guidelines July 2008.

It should be noted however, that lower genital tract swabs are overall, poor predictors of intrauterine infection in women with PPROM.

The presence of contractions is noted and signs of infection are sought. These include fever, maternal or fetal tachycardia, offensive or purulent discharge, vaginal bleeding (even if light) and uterine tenderness. If these signs are presented a consultant review is required and broad spectrum antibiotics may be indicated as well as consideration of expediting delivery.

An ultrasound examination is useful to assess fetal size, presentation and normality, as well as the liquor volume. Cardiotocography should be performed for at least 30 minutes to assess fetal well being and uterine activity when the fetus is viable. For fetuses under 28 weeks in this context the interpretation of the CTG can be difficult and advice should be sought from a Senior Obstetrician/MFM Specialist.

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b. Routine inpatient management

Initial management involves hospitalisation. The following tests should be individually tailored and repeated according to clinical indication. CTG; LVS; FBC; CRP and USS.

Antibiotics

Prospective randomised controlled trials of women with PPROM taking prophylactic antibiotics vs. placebo, have found a significant prolongation of pregnancy and a significant reduction in the incidence of chorioamnionitis, perinatal morbidity, neonatal sepsis, necrotising enterocolitis and respiratory distress syndrome in women taking antibiotics. Currently no one specific antibiotic regime appears to be superior to another, however regimes including amoxicillin-clavulanic acid appear to be inferior. We recommend Erythromycin 250mg orally four times per day for ten days.

Since preterm labour is a risk factor for early onset neonatal GBS disease, women should be given GBS chemoprophylaxis in labour as per protocol.

Tocolysis

There is no evidence to support the use of prophylactic tocolytics to improve neonatal outcome prior to the onset of contractions. However, if PPROM occurs before 34 weeks, consideration can be given to use of tocolysis to allow the administration of corticosteroids, providing there are no signs of sepsis (fever, maternal and/or fetal tachycardia, uterine tenderness and irritability, leucocytosis), antepartum haemorrhage or other contraindication to steroid use. This decision should be made in consultation with the L&BS or MFM consultant on call.

Amniocentesis

This may be useful when intra-amniotic infection is suspected. In this instance diagnosis is based upon an amniotic fluid glucose<1 mmol/L, a positive gram stain, or a positive amniotic fluid culture. In the future amniotic fluid cytokine levels may aid the diagnosis of infection.

Fetal surveillance as an inpatient

We recommend daily observation of fetal movement, daily CTG, weekly ultrasound scan for liquor volume, and fortnightly ultrasound scan for fetal growth.

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c. Outpatient management

Selection criteria

Women with PPROM who meet the following criteria may be considered eligible for expectant management at home:

- Cephalic presentation and engaged
- Clear liquor
- Normal fetal movements
- Afebrile
- Not tachycardic (HR < 100 bpm)
- Has NOT had a digital vaginal examination
- Likely to attend all follow-up, and report concerns promptly
- Has home telephone
- Lives less than 40 minutes away
- Able to get transport to and from hospital easily

Usual outpatient management is three times weekly assessment in Day Assessment Unit with review by the woman's team (NOT the WAU team on call). At each visit, the DAU midwife records fetal movement, maternal temperature and heart rate, and performs a CTG. The woman's team will then review the woman and adjust the plan as necessary. The woman's team is responsible to ensure that ultrasound scans for liquor volume are arranged weekly, and for fetal growth fortnightly.

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d. Delivery

Timing

In women who have PPROM prior to 34 weeks, in the absence of fetal or maternal compromise, traditional management has been to deliver at about 34 weeks. The rationale is that at this gestation, neonatal outcomes are very good and the risk of infection from remaining in utero may be greater than the risk of neonatal complications of prematurity. Alternatively, once they reach 34+0 they may be

eligible to enrol in the PPROMPT study. For more information contact the study coordinator.

Women with PPROM between 34+0 to 36+6 weeks may be eligible for the PPROMPT study. Women who participate will be randomized to induction of labour within 24 hours, or to expectant management. The primary hypothesis is that early planned delivery will be associated with less neonatal and maternal morbidity compared with expectant management. For more information contact the study coordinator.

In women with antepartum risk factors for GBS (see above), early planned delivery may be considered. GBS prophylaxis should be given in labour for all women in preterm labour, although consideration may be given to omitting this if there is a negative GBS LVS/rectal swab in the last 5 weeks. There is no evidence to guide practice regarding GBS prophylaxis prior to labour.

In women with evidence of sepsis, early planned delivery should be considered. Broad spectrum antibiotics should be started immediately.

Mode

In the absence of fetal or maternal compromise or other obstetric factors necessitating a caesarean, vaginal delivery is usually indicated.

Where there is evidence of fetal infection, unless delivery is imminent, caesarean section may be indicated, though at very early gestations with little liquor this may end up being a difficult classical caesarean section. Decision about mode of delivery should be individualized. In some cases at very early gestation (typically <26 weeks) the decision may be taken by the obstetrician and family not to perform a difficult caesarean section and allow ‘nature to take its course’.

Cervix suture

If a cervical suture is present, there is an increased risk of sepsis. The suture should be removed as soon as possible. The consultant on call for DU should be consulted and ongoing care should be individualised.

Referral to Support Services

At borderline viability women should be offered counselling from a neonatologist.

Women should be referred to support services as required – e.g. social worker.

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6. Definitions

- Pre-labour ROM at term (Term PROM) = Rupture of the amniotic membranes prior to the onset of labour (at least one hour) at or beyond 37 weeks gestation.
- Pre-term pre-labour ROM (PPROM) = Rupture of the amniotic membranes prior to the onset of labour and before 37 weeks gestation.

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7. Supporting evidence

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8. Associated ADHB documents

Access Holders in Women's Health
Group B Streptococcal Neonatal Disease Prevention
Induction of Labour – RBP
Induction of Labour – Roles and Responsibilities
Informed Consent
Magnesium Sulphate for Pre-eclampsia and for Neuroprotection in Pre-Term Births <30 weeks
Patient information leaflet "Pre-labour Rupture of Membranes"
Patient information leaflet "Induction of Labour"
Referral – Maternal Fetal Medicine

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9. Disclaimer

No guideline can cover all variations required for specific circumstances. It is the responsibility of the health care practitioners using this ADHB guideline to adapt it for safe use within their own institution, recognise the need for specialist help, and call for it without delay, when an individual patient falls outside of the boundaries of this guideline.

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10. Corrections and amendments

The next scheduled review of this document is as per the document classification table (page 1). However, if the reader notices any errors or believes that the document should be reviewed ***before*** the scheduled date, they should contact the owner or the Clinical Policy Advisor without delay.

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