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Pre Labour-Rupture of Membranes at Term and Prevention of Early Onset Neonatal Group B Streptococcal Infection

Classification:	Guideline		
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Guideline to be followed by (target staff): All staff working in maternity			
To be read in conjunction with the following documents: **None**			
Are there any eCARE implications? No			
CQC Fundamental standards: Regulation 9 – person centred care Regulation 10 – dignity and respect Regulation 11 – Need for consent Regulation 12 – Safe care and treatment Regulation 13 – Safeguarding service users from abuse and improper treatment Regulation 19 – Fit and proper			

Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

To enable staff to care for women with pre labour rupture of membranes at term and prevention of early onset neonatal group B Streptococcal infection, in line with national guidance.

Executive Summary

Preterm prelabour 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

The Group B Beta-haemolytic Streptococcus infection (Streptococcus agalactiae) (GBS) is recognised as the most frequent cause of early-onset (less than 7 days of age) neonatal streptococcal disease (EOGBS) infection in newborn infants. The GBS carriage rate varies among racial groups, with the highest rates in people of black African ancestry and the lowest in people of South Asian ancestry.
GBS is present in the bowel flora of 20–40% of adults (this is called 'colonisation'). Pregnant women who are colonized are called 'carriers'. The UK incidence of EOGBS is 1:10 babies will die, (0.5%:1000 births) with a mortality rate of 6% in term infants (NSC 2009)

Objectives: This guideline is to provide clinicians with evidence based practice for diagnosis, assessment, care and timing of birth for women presenting with pre labour rupture of membranes (PROM) at term, balancing the risks of inducing labour against the risk of maternal and/or fetal infection. It will assist clinicians in identifying pregnant women with known risk factors for GBS infection and outline nationally recognised management and treatment.
Importantly, it also addresses care in a subsequent pregnancy.

1.0 Roles and Responsibilities

Midwives –
- Identify women with PROM at term and assess risk factors for GBS.
- Provide evidence based advice to women and their families
- Administer treatment prescribed.

Midwives, nurses, nursery nurses – complete neonatal observations for babies at risk

Medical Staff –
- Confirm and support midwives in the diagnosis of pre labour rupture of membranes where it is uncertain
- To prescribe intrapartum antibiotic prophylaxis (IAP) to those ladies at risk of chorioamnionitis
- To identify risk factors and prescribe IAP to reduce the incidence of EOGBS.

2.0 Implementation and dissemination of document

This guideline will be disseminated at staff and unit meetings highlighting the change in practice. This document will be available on the Trust Intranet.

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3.0 Processes and procedures

3.1 Definition

Pre labour rupture of membranes (PROM) is defined as rupture of the membranes in the absence of uterine activity at a gestation of 37 completed weeks or more. The main risk of prolonging pregnancy is maternal and/or fetal infection. The risk of serious neonatal infection in PROM is 1% compared to 0.5% with intact membranes (NICE 2017).

This must be balanced against the risks of inducing labour especially if the cervix is unfavourable, 60% of women will go into labour spontaneously.

Comparing expectant management with early induction there appears to be no significant difference with respect to mode of delivery or likelihood of neonatal infection. Women at low risk of chorioamnionitis i.e in the absence of maternal fever and uterine tenderness, can be safely offered the choice of expectant management (up to 24 hours post membrane rupture) or early induction. Induction of labour is appropriate after 24hrs with ruptured membranes at term.

The exception of this is if Group B Haemolytic Streptococcus (GBS) has been found incidentally in the vagina or urine at any time during the current pregnancy or history of GBS infection in a previous baby.

Intrapartum antibiotic prophylaxis (IAP) is 80% effective at preventing early onset Group B Streptococcus (EOGBS) but will not prevent all infections and deaths and not late-onset disease. There have been no randomised studies addressing whether routine screening has had any impact on all-cause mortality. A positive antenatal screen will result in the recommendation of IAP to reduce some risks for the mother and baby. These include anaphylaxis, increased medicalisation of labour and the neonatal period, and possibly, infection with antibiotic-resistant organisms when broad-spectrum antibiotics, such as amoxicillin, are used for prophylaxis.

Antenatal treatment of women who have a positive GBS swab has not been shown to reduce the risk of neonatal infection.

3.2 Primary Management for all women

- If there is definite history of PROM there is no reason to carry out a speculum examination.
- If there is an uncertain history of PROM then the woman should be offered a speculum examination to determine whether membranes have ruptured.
- Digital examination in the absence of contractions should be avoided.
- If a woman with risk factor for EOGBS, (see below) is admitted with PROM after 37 weeks gestation then a Consultant Obstetrician must be involved in the decision for induction of labour (IOL).
- IAP is not required for a history of previous maternal GBS carriage, or GBS found incidentally in the vagina or urine in this pregnancy who is having a planned Caesarean section and has intact membranes.

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Risk factors for EOGBS:

1. Previous infant with invasive GBS disease
2. Preterm labour
3. GBS carriage (colonisation) identified in a previous pregnancy
4. GBS bacteruria in a current pregnancy (MSU)
5. GBS identified in a current pregnancy (LVS)

3.3 Management for women with pre-labour ROM, no history of GBS:

- Until induction of labour is started or if expectant management > 24hours is chosen by the woman, lower vaginal swab and maternal C-reactive protein (CRP) should **NOT** be offered.

- To detect any developing infection, women should record their temperature every 4 hours during waking hours and to report immediately any change in colour/smell of vaginal loss.

- Bathing/showering is not associated with an increase in infection.

- It is likely that sexual intercourse may be associated with increase in infection.

- Fetal heart rate and fetal movements should be assessed at the initial contact and then every 24 hours following rupture of membranes while not in labour

- Women should be advised to report immediately any reduction in fetal movements.

- If >24 hours spontaneous rupture of membranes (SROM) and labour has not started women should be advised to stay in hospital for **at least** 12 hours following birth to observe the baby for signs of infection

- If evidence of infection in woman then a full course of intravenous broad spectrum antibiotics should be prescribed.

The benefits and risks of expectant management (up to 24 hours post-membrane rupture) or augmentation of labour should be discussed with the woman so that informed consent can be obtained and documented.
Women should be advised-
-risk of serious neonatal infection is 1% after rupture of membranes rather than 0.5% with intact membranes
-60% of women with prelabour rupture of membranes will labour spontaneously within first 24 hours

Women should be offered induction of labour 24 hours after rupture of membranes.

Expectant management should not exceed 96 hours. If in doubt, discuss with Obstetric Registrar or Consultant.

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3.3.1 If the woman wishes, she may be allowed to go home after the diagnosis of PROM is made. This can be permitted as long as:

1. The present pregnancy and past obstetric history is uncomplicated
2. The liquor is clear
3. It is a singleton pregnancy, in cephalic presentation, with an engaged head
4. There is no evidence of infection, and no history of GBS carriage in current pregnancy or previous baby affected by GBS
5. The fetal heart rate is normal
6. There is no clinical evidence of chorioamnionitis i.e normal temperature and uterine tenderness
7. Re-admission is arranged for IOL

Before going home women should:

- Be given verbal and written instructions about re-admission for IOL (see Appendix 1)
- Give GBS leaflet and leaflet in Appendix 1
- Provide woman with a contact telephone number

Advised to return if:

- They become unwell or feel feverish
- Vaginal loss becomes green or smells offensive
- Contractions occur
- Fetal movements become less frequent

3.4 Management of women with PROM and history of GBS: found incidentally in the vagina or urine at any time during current pregnancy or previous baby affected by GBS:

- If there is a confirmed history of PROM there is no reason to carry out a speculum examination.
- If there is an uncertain history of PROM then the woman should be offered a speculum examination to determine whether membranes have ruptured.
    - Digital examination in the absence of contractions should be avoided.
- Antibiotic prophylaxis is not required for a woman with a history of previous maternal GBS carriage or GBS found incidentally in the vagina or urine in this pregnancy who is having a planned caesarean section and has intact membranes.

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- Obstetric Consultant to be involved in the decision for IOL
- Offer IOL at earliest possible
- Give intrapartum antibiotic prophylaxis (IAP) as recommended below.
- Baby to receive antibiotics if mother who should have had intrapartum antibiotics did notreceived first dose of antibiotics less than 2 hours before the birth.
- If multiple births and one baby diagnosed with GBS to treat all others for GBS.

3.4.1 Method of stimulating uterine activity

- Current evidence suggest that the mode of birth is unaffected by the method used to induce labour and pre-labour rupture of membranes
- Women who have had at least one term vaginal birth can be stimulated with intravenous oxytocin using the standard regime. See **Induction of Labour Guideline.**
- Women who have not had a previous term vaginal birth should have a vaginal examination to assess the Bishop score. It the cervix is unfavourable (Bishop score <5) consideration should be given to the administration of a 3mg vaginal prostaglandin pessary. Discuss this possibility with the on call Registrar or Consultant before performing the vaginal examination.

3.5 Treatment:

3.5.1 Give Intrapartum antibiotic prophylaxis (IAP) specifically for GBS to the following women:

- GBS infection in a previous baby but not previous maternal GBS carriage
- GBS found incidentally in the urine or vagina at any time during the current pregnancy.

3.5.2 Give Intrapartum antibiotics if:

- Chorioamnionitis diagnosed or suspected clinically.
- Incidental finding of GBS in a vaginal swab or urine specimen during current pregnancy (if positive result obtained in early pregnancy risk is probably lower)

3.5.3 If two or more risk factors from the following list, give intrapartum antibiotic (IAP) prophylaxis after discussion and informed consent from the woman:

- PROM (>18 hours)
- Preterm (<37/40) rupture of membranes
- Fever in labour (>38°C)

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3.5.4 Treatment Regimes:

Antibiotic therapy may be associated with a risk of anaphylaxis – 1:10,000. Fatal anaphylaxis is estimated as 1:10,000.

- All women in whom it is recommended to give antibiotics and consent has been given should be offered antibiotics immediately at the onset of labour.
- Specific IAP for GBS is Benzylpenicillin 3G IV initial dose followed by Benzylpenicillin 1.5G IV at 4hrly intervals until birth.
- For women allergic to penicillin – Clindamycin 900mg IV every 8 hours until birth.
- Broad spectrum antibiotics should replace GBS specific antibiotic prophylaxis when clinically indicated, ensuring the regime includes adequate GBS cover.

3.6 Monitoring of the neonate following birth:

- Women with PROM should inform the Healthcare Professional immediately if they have any concerns regarding their baby's wellbeing in the first 5 days following birth, particularly in the first 12 hours when risk of infection is greatest.
- Blood tests and CSF, and/or surface culture tests should not be performed in babies that are asymptomatic.
- Asymptomatic term babies born to women with PROM (more than 18 hours before labour) should be closely monitored for the first 12 hours following birth, at 1 hour, 2 hours and then 2 hourly for 10 hours.

Observations should include:

- General wellbeing
- Chest movements and nasal flare
- Skin colour including perfusion by testing capillary refill
- Feeding
- Muscle tone
- Temperature
- Heart and respiratory rate

Any baby with symptoms of possible sepsis or born to women who have evidence of chorioamniontis are to be referred immediately to the Paediatric Team.

3.7 Treatment for Neonates:

Most infants who develop early onset GBS present with illness soon after birth and 90% have presented clinically by 12 hours of age, before culture results become available (NICE 2017).

3.7.1 Consider giving antibiotics to the following babies:

- Babies born to mothers who should have received IAP but did not.

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- Babies born to mothers who received the first dose of antibiotics less than 2 hours prior to birth

3.7.2 Give antibiotics to the following babies:

- Any baby who presents at any gestation with symptoms of sepsis e.g. tachypnoea, grunting, poor feeding, poor tone, fever.

- In multiple births if one baby is diagnosed with GBS disease treat all others.

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4.0 Statement of evidence/references

References:

Intrapartum Care for healthy women and babies NICE (CG190) 2017

Group B Streptococcal Disease, Early-onset (RCOG Green-top Guideline No. 36), 2017

UK National Screening Committee Policy on GBS Screening in Pregnancy (posted on internet March 2009)

Group B Strep Support website (Nov 2009)

Brocklehurst P, Kenyon S (2008) Evaluation of Antenatal Screening for Group B Streptococcus (GBS) against NSC Handbook Criteria

5.0 Governance

5.1 Record of changes to document

Version number: 4		**Date:** 04/2015		
Section Number	**Amendment**	**Deletion**	**Addition**	**Reason**
Full document review				**Updated with most recent evidence**
Version number: 3		**Date:** 04/2015		
Section Number	**Amendment**	**Deletion**	**Addition**	**Reason**
	No changes required- review date extended and put into new format.			

5.2 Consultation History

Stakeholders Name/Board	**Area of Expertise**	**Date Sent**	**Date Received**	**Comments**	**Endorsed Yes/No**
Dr Indranil Misra	Paediatric consultant	14/05/2020	11/06/2020	incorporated	Yes

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5.3 Audit and monitoring

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
Proportion of pregnant women with the indications for IAP who actually receive antibiotics (100%)	eCare	Mr Omar Mulki	Annual	Division of Women's and Children
Proportion of pregnant women who are pyrexial in labour who are offered appropriate antibiotics, i.e those for prevention of EOGBS (100%)	eCare	Mr Omar Mulki	Annual	Division of Women's and Children
Proportion of pregnant women who are colonised in a previous pregnancy who are offered testing and/or IAP (100%)	eCare	Mr Omar Mulki	Annual	Division of Women's and Children

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5.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women's and Children's Health	Department	Maternity
Person completing the EqIA	Dr Swati Velankar	Contact No.	
Others involved:		Date of assessment:	07/2020
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	*All staff working in maternity*

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	NO	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

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What consultation method(s) have you carried out?			
Circulation for comments via email and Microsoft Teams. Discussion at meetings			
How are the changes/amendments to the policies/services communicated?			
Discussion at guidelines meeting and CIG. Circulation via email.			
What future actions need to be taken to overcome any barriers or discrimination?			
What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA			

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Appendix 1: Information and Advice for Women returning Home with Ruptured Membranes who are not in Labour

Information and Advice for Women
Returning Home with Ruptured Membranes who are Not in Labour

It has been confirmed that your waters have broken and at this time we are satisfied that both you and your baby are well. Labour will start within 18 hours of the waters breaking for 60% of pregnant women. When this happens, contact your midwife or the Labour Ward as arranged.

After your waters have broken the risk of serious infection for your baby is 1% rather than 0.5% for women with intact waters (Nice:2001).

Please telephone the labour ward on 01908 243478 if: -

- **If you feel hot and feverish or unwell, or you have a temperature**
- **Any changes in the colour of your waters from a clear or pink colour.**
- **If your waters or your sanitary pads begin to smell offensive.**
- **Any decrease or changes in your baby's movements.**
- **You have any concerns**

If you have not gone into labour after **24 hours, then induction** of labour is appropriate therefore if none of these changes occur and your labour does not start, it is recommended that you contact and return to ward 9 for induction of labour at:

Time [ ]

Date [ ] for further assessment.

If you have signs of infection you will need a course of antibiotics.

If there are no signs of infection and you do not birth your baby within 18 hours of your waters breaking then you will be asked to stay in hospital for at least 12 hours following the birth so that staff are able to observe your baby for any signs of infection.

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Appendix 2: Pre-labour Rupture of Membranes – Neonatal Observations

Time	General wellbeing	Chest movement/nasal flare	Skin colour (capillary refill)	Feeding	Muscle tone	Temperature	Heart rate	Respiratory rate	Signature and time of observations
Birth									
1 hour									
2 hours									
4 hours									
6 hours									
8 hours									
10 hours									
12 hours									

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Appendix 3: Flowchart of the Guideline