Group B Streptococcus (GBS)

Contents

1. Overview

Purpose

Provides guidance to practitioners regarding prevention of early and late onset neonatal Group B Streptococcus infection

Scope

Maternity and neonatal practitioners

2. Background

Group B Streptococcus (GBS) is a common pathogen present in 10-35% of all women and can be passed to the fetus via vertical transmission. It is the leading cause of early onset neonatal sepsis in New Zealand. The National Consensus Guideline for the prevention of Early Onset Group B Streptococcus infection recommends a “risk based” prevention approach.

3. Antenatal Screening

- Routine screening is **not** currently recommended.
- Some women may elect to be screened e.g. women who have had a positive screen for GBS in a previous pregnancy
- Women may choose to be screened opportunistically if they are being screened for other vaginal infections
- Self-collect is an acceptable method of screening and involves a low vaginal, peri-anal swab. The request form must clearly state “GBS screen” and “use selective broth process”

⚠ Optimal gestation for screening is 35-37 weeks

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4. GBS positive screen in pregnancy

4.1 Positive GBS screen in current pregnancy via swab

Women who have a positive vaginal/peri-anal swab are carriers, and treatment is NOT required antenatally as GBS can be eliminated via the large bowel. However, a re-screen at 35-37 weeks is recommended, to aid decision making in labour.

4.2 Positive GBS bacteriuria in current pregnancy

Women who have a positive urine test for GBS at any stage of pregnancy need to be treated with antibiotics at the time of diagnosis, as there is an increased risk of preterm labour and pyelonephritis. There is no need to take, or repeat, a vaginal swab as GBS bacteriuria is a sufficient risk factor.

5. Indications for Intrapartum Prophylactic Antibiotics

Women who present with the following conditions **MUST** be offered GBS antibiotic prophylaxis (*unless they are undergoing a pre-labour caesarean section at term with intact membranes*). If a woman with one of the risk factors below has ruptured membranes, early induction is generally recommended.

The optimal time for antibiotic administration is more than **four** hours before birth. However as there is some effect at least one hour before birth, antibiotics should be given even if birth is expected to occur within the four hours. If uncertain, discuss with the obstetrician on-call or clinical charge midwife.

5.1 Previous baby infected with GBS

A previous baby infected with GBS is a sufficient risk factor to offer intravenous antibiotic prophylaxis.

5.2 Positive GBS screen in current pregnancy

Women who have a positive screen for GBS after 35 weeks should be offered intrapartum antibiotic prophylaxis. If they have had a positive vaginal/peri-anal swab result in early pregnancy, but a negative screen after 35 weeks, proceed with standard care unless other risk factors arise. However, if the swab result is more than five weeks old or no swab was repeated after a positive screen in early pregnancy, prophylaxis should be recommended due to the transient nature of GBS.

Any women with a GBS bacteriuria during pregnancy, regardless of whether it was treated appropriately, should be offered antibiotics in labour, as this is an independent risk factor.

5.3 Preterm labour less than 37 weeks and imminent birth

Pre-term babies are at increased risk of neonatal sepsis, and therefore women who present with signs of premature labour should be offered antibiotic prophylaxis. If labour does not establish and the membranes remain intact, antibiotics should be discontinued.

5.4 Premature rupture of membranes before 37 weeks

If labour does not establish and there is prolonged, premature rupture of membranes, refer to the Pre-term Labour and PPROM Guideline and consult the obstetrician on-call.

5.5 Rupture of membranes greater than 18 hours at term, without GBS risk factors

A comprehensive assessment of all women who have pre-labour ruptured membranes at term is recommended to ensure both maternal and fetal wellbeing. This would include as a minimum assessment of maternal temperature, pulse, fetal heart and colour of liquor, and assessment of GBS risk factors.

Women in spontaneous labour, but do not birth within 18 hours of ruptured membranes now have a risk factor for GBS, and therefore should be offered antibiotic prophylaxis.

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Women with ruptured membranes greater than 18 hours who are not in spontaneous labour, should be offered an induction of labour as soon as practical, and ideally before 24 hours. Prophylactic antibiotics should be commenced once labour is established.

5.6 Maternal pyrexia in labour 38˚C or above

Maternal temperature 38°C or above is a separate risk factor which requires special consideration for broad-spectrum antibiotics due to the increased likelihood of chorioamnionitis. Women with a fever of 38°C (or greater) require immediate treatment and consideration for birth. Membranes do not need to have ruptured to suspect chorioamnionitis.

Clinical suspicion of chorioamnionitis may include the following (including pyrexia):

- Abdominal tenderness
- Maternal tachycardia
- Tachypnoea
- Reduced urinary output
- Altered mental status
- Fetal tachycardia
- Hypotension
- Hypoperfusion
- Offensive liquor/vaginal discharge

Where there are signs of infection, a comprehensive head-to-toe assessment should be carried out, including rechecking vital signs and the taking of specimens (prior to antibiotic administration whenever possible) for full blood count, C-reactive protein, urea and creatinine, liver function tests, clotting screen, blood gas and blood cultures (two samples as per WDHB policy). Consider other laboratory investigations depending on the woman's symptoms such as midstream/catheter specimen urine and vaginal/perineal swabs.

Women who have symptoms as above should be reviewed by an obstetrician, ideally within 30 minutes.

6. Prophylactic Antibiotic Protocol

This prescription protocol MUST be followed, unless agreed by an Obstetric Specialist.

1	Benzylpenicillin initial 1.2g loading dose IV STAT and then 600mg IV every 4 hours until birth
2	For mild penicillin allergy (low risk of anaphylaxis) give Cefazolin 2g IV STAT and then 1g IV every 8 hours until birth
3	For severe penicillin allergy (high risk of anaphylaxis) give Vancomycin – Loading dose is titrated according to body weight (<60kg = 1.5g, 60-100kg = 2g, >100kg = 2.5g) followed by 1g every 12 hours until birth (see Vancomycin (Adults) Protocol) Vancomycin must be diluted to give a concentration not more than 5mg/mL. One 500mg vial should be reconstituted with 10 ml of water for injection, then further diluted with at least 100ml of sodium chloride 0.9%. This should be administered using a volumetric pump.

⚠ Women with suspicion of maternal sepsis or chorioamnionitis will require a broader spectrum of antibiotics instead of the prophylaxis regime:

Cefuroxime 1.5g IV every 8 hours + Metronidazole 500mg IV every 12 hours + Gentamicin 5-7mg/kg (ideal body weight) STAT and refer to the Aminoglycoside Dosing and Monitoring Guideline.

Review the above antibiotic regimen at 48 hours once culture results are available. Gentamicin may be given for a maximum of 48 hours, after which time treatment should be discussed with an Infectious Diseases physician.

⚠ Although this dosage of Benzylpenicillin is in line with recommendations in the 2014 New Zealand Consensus Guideline, it should be noted that it is significantly lower than international guidelines

⚠ Risk of sensitivity or allergy – Refer to the Antibiotic Guidelines (Adults) for further guidance

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7. Neonatal Management

All newborn babies should be observed as outlined in the Ministry of Health and Te Whatu Ora - Waitematā Guidelines for observation of mother and baby in the immediate postnatal period. GBS is a significant cause of neonatal morbidity and mortality. Babies of mothers with risk factors require close monitoring in the first 24 – 48 hours following birth (*see flowchart*).

Signs of sepsis may be non-specific and include: respiratory distress; apnoea; temperature instability; tachycardia; lethargy; poor feeding; and poor muscle tone. If there are any concerns regarding neonatal condition refer for a paediatric assessment, indicating GBS risk. If a baby is showing signs of sepsis immediate evaluation is required (FBC and blood cultures) and empiric antibiotic therapy for at least 36 hours should be started. When feasible a lumber puncture should be performed, especially when blood cultures are positive.

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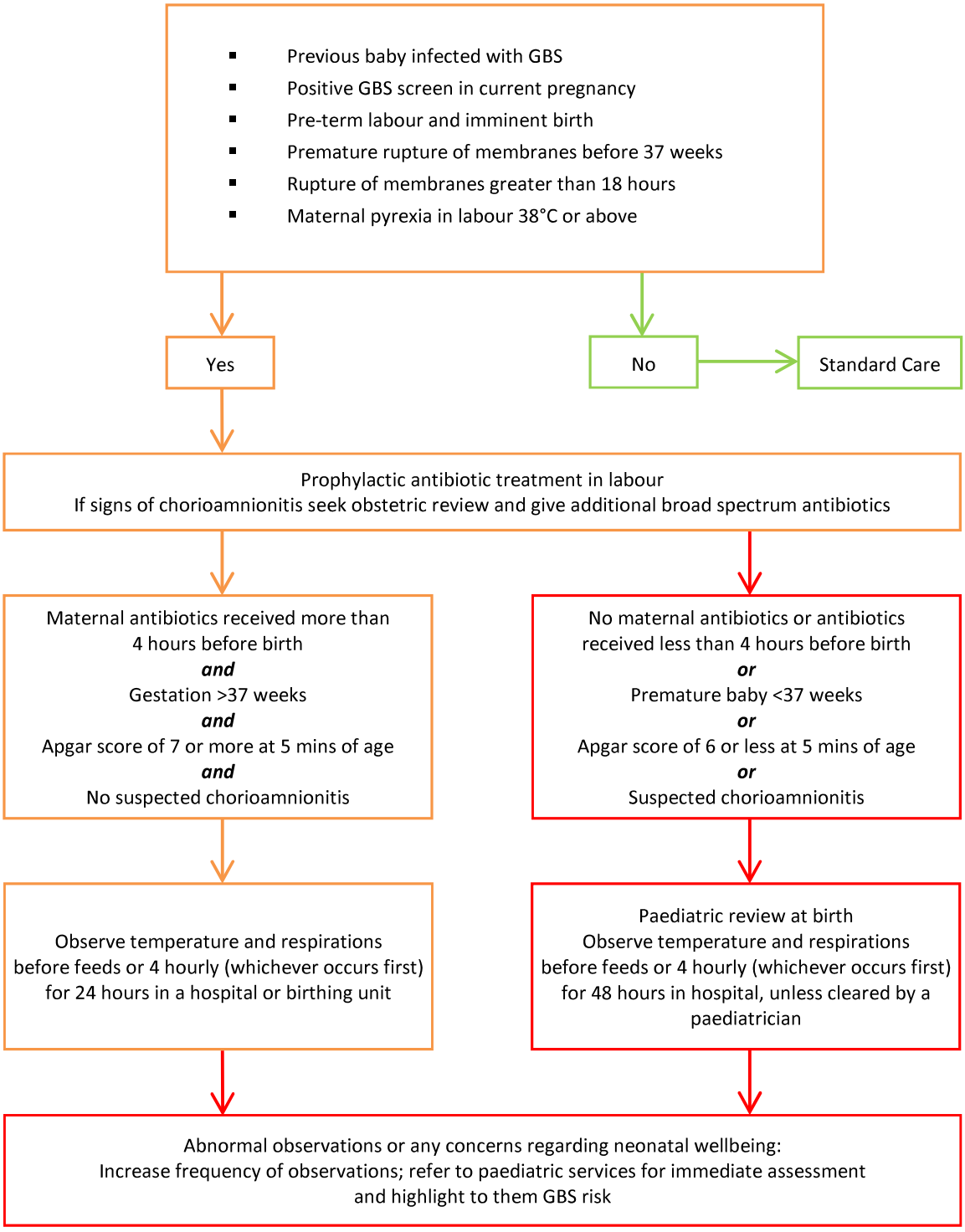
8. Group B Streptococcus Management Flowchart



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9. Information for Parents

Parents of babies at risk of GBS infection should receive the GBS information leaflet prior to discharge so that they are aware of the signs and symptoms of early and late onset GBS disease and are able to seek assistance urgently if concerns arise.

10. References

1	Darlow, B., Campbell, N., Austin, N., Chin, A., Grigg, C., Skidmore, C., . . . Werno, A. (2015). *The prevention of early-onset neonatal group B streptococcus infection: New Zealand Consensus Guidelines 2014.* New Zealand Medical Journal, 128(1425), 69-76. Retrieved from https://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2015/vol-128-no-1425-20-november-2015/6727
2	Wise, M., Campbell, N., & Darlow, B. (2015). *Prevention of neonatal early onset GBS sepsis: A clear protocol is better than none—or several.* New Zealand Medical Journal, 128(1425), 8-11.
3	Palasanthiran, P., Staff, M., Jones, C., & Giles, M. (Eds.). (2014). *Management of Perinatal Infections* (3rd ed.). Retrieved from https://www.asid.net.au/documents/item/368
4	Waitemata District Health Board. (2017, November). *Maternity suspected sepsis guidelines [DRAFT].*
5	Waitemata District Health Board. (2014, January). *Observation in the immediate postnatal period.*
6	Waitemata District Health Board. (2017, October). *Aminoglycoside intravenous dosing and monitoring (Adults).*
7	Waitemata District Health Board. (2017, July). *Vancomycin (Adults).*
8	Waitemata District Health Board. (2016, December). *Antibiotic Guidelines (Adults) 2015-2016* (3rd ed.).