OBSTETRICS AND GYNAECOLOGY
CLINICAL PRACTICE GUIDELINE

Group B streptococcal disease

Scope (Staff):	WNHS obstetrics and midwifery staff
Scope (Area):	Maternity clinical areas

This document should be read in conjunction with the Disclaimer.

Contents

Background information

Group B streptococcus (GBS) is a common bacterium, which may be found asymptomatically in the gastrointestinal tract, vagina and urethra. Approximately 20-24% of Australian women will be colonised with GBS. The GBS may be passed from mother to baby during labour and result in neonatal early onset GBS (EOGBS) infection in the first week.[2] In the absence of antibiotic prophylaxis 50% of colonised women will transmit the bacteria to their newborns, of which 1-2% of newborns can develop early onset sepsis[3], neonatal pneumonia and meningitis.

The use of intrapartum prophylaxis with antibiotics given to women at risk of transmission of GBS to their newborns has been shown to reduce the incidence of early onset sepsis by 86-89%. A risk factor approach (antibiotics given for preterm labour, ROM >18h or intrapartum fever) is used in the UK and both risk and screening based approaches are recognised in Australia. A screening based approach prevents more transmission events than a risk factor based approach.[4] Screening and intrapartum antibiotics do not prevent late onset GBS infection (from 1 week to 3 months of age).

Urinary tract infections caused by GBS complicate 2%-4% of pregnancies. It is recommended that women with GBS UTI in pregnancy be treated with intrapartum antibiotics because the neonate is at increased risk for EOGBS infection.

Clinical risk factors for neonatal EOGBS

These include:

- A previous neonate with early or late onset GBS disease[1]
- A positive maternal culture for GBS in current pregnancy[1]
- GBS bacteriuria during the current pregnancy[1]
- Clinical diagnosis of chorioamnionitis[1]
- Other twin with current EOGBS[1]
- An unknown culture result, or no screening in pregnancy and any of the following are present –
    - the onset of premature labour < 37 weeks gestation[1]
    - rupture membranes for ≥ 18 hours[1]
    - an intrapartum fever of ≥ 38° C.[1] Significant intrapartum fever requires consideration of broader spectrum therapy – refer to Infections in Obstetrics: Intra-amniotic Chorioamnionitis and Postpartum Infection: Diagnosis and Management. Amoxicillin provides GBS coverage in this regimen.

Antenatal screening

1. **Discuss prevention**: Explain the treatment offered during labour to women colonised with GBS, previously had a child with GBS infection and/or have risk factors for transmission during labour.[2]
2. **Offer testing** and give information about the test.[2]
    - Among women with penicillin allergy, clindamycin sensitivity testing should be requested at the time of screening culture.
    - Discuss and refer women to the GBS section (in chapter 'Between 33 and 40 weeks') in the KEMH Pregnancy Birth and your Baby book (PDF, 7.5MB)

Offer GBS screening to women via a combined low vaginal- rectal swab at:

- **35-37 weeks gestation**
- or 3-5 weeks prior to anticipated birth in high risk pregnancy such as poorly controlled diabetes, multiple pregnancy[1]

Notes:

- Women who have had a previous baby with GBS infection require prophylactic antibiotics in labour and are not required to test[2]
- Culture results are less predictive of status at term if performed at earlier gestations
- Collecting swabs: Can be patient self- collected or clinician collected

3. **Document and follow-up[2]:**
    - Inform the woman of the results and document in the antenatal record.
    - Inform women with positive GBS result or a previous baby with GBS infection of the importance of relaying this information to staff during labour.

Collecting swabs for GBS screening

See Vaginal Procedures guideline: 'Swabs: Low Vaginal, High Vaginal, Endocervical and Rectal'

Method of swab collection

1. Women are encouraged to collect their own GBS swabs following appropriate instruction.[2]

2. For the single-swab method, the lower one third of the vagina is swabbed circumferentially with a cotton swab that is then inserted through the anal sphincter, 2cm into the rectum, and rotated 360 degrees.[5] A two swab technique can be used.
3. Pathology request forms should specify:
    - The sample is for GBS screening (to facilitate specialised culture conditions for GBS).[1]
    - If the patient is known to be allergic to penicillin indicate this on the pathology form and request antibiotic sensitivities.[1]
        - Clindamycin susceptibilities should be requested where there is a known history of Type 1 (immediate onset reactions occur within 1 hour of administration of the medication) penicillin allergy or if it is unclear from the history whether it is a type 1 or type 2 (7-10 days after treatment starts) allergy.

Intrapartum and birth

1. Optimal intrapartum antibiotics is defined as receipt of β lactam (penicillin, amoxicillin or cefazolin) antibiotics for ≥ 4 hours prior to birth.[1] There is less data for the efficacy of Clindamycin or Vancomycin prophylaxis.
2. GBS culture results are not available for 24 – 48 hours; cultures are not useful in the initial management of labour with an unknown current status.
3. Rapid intrapartum NAAT (PCR) for GBS can be used to determine GBS colonisation of women at birth. However this test is currently not available at KEMH.

Maternal antibiotics

Provide intrapartum GBS antibiotic prophylaxis for women with:

- A positive GBS culture from LVS or LVS/rectal swab
    - Includes GBS positive with ruptured membranes before caesarean
- A previous child with GBS infection (early or late onset), regardless of any present pregnancy cultures[1]
- Symptomatic or asymptomatic GBS bacteriuria of any count in current pregnancy
- An unknown culture or no screening in pregnancy and risk factors are present[1]

Intrapartum antibiotic prophylaxis is NOT required for women with:

- Caesarean birth performed **before** the onset of labour on a woman with intact amniotic membranes, regardless of GBS colonisation status[1] or gestational age. Caesarean section prophylaxis is still required.

Intrapartum antibiotic regimen:

- Benzyl penicillin 3 g intravenously for the first dose, then 1.8g intravenously, 4-hourly until birth

For a woman with immediate nonsevere or delayed nonsevere hypersensitivity to penicillins, use:

- Cefazolin 2 g intravenously 8-hourly until birth

For a woman with **immediate severe or delayed severe hypersensitivity to penicillins**, if the GBS isolate is susceptible to clindamycin, use:

- Clindamycin 600 mg intravenously, 8-hourly until birth

Clindamycin resistance rates are increasing and currently run at 40% at KEMH (see antibiogram). **If the GBS isolate is resistant to clindamycin or the results of susceptibility testing are not available, or the woman is allergic to both penicillins and clindamycin, use:**

- Vancomycin intravenously, 20mg/kg (up to a maximum of 2g), 12-hourly until birth. Refer to KEMH Adult Medication Monograph: Vancomycin for detailed dosing.
- Consult with the clinical microbiologist on call if vancomycin is unsuitable.

Special notes

- **These recommendations are for GBS colonisation only and do not apply to women with overt sepsis.**
- **To achieve maximum preventative effect, the first dose of antibiotics should be administered at least four hours prior to birth.**

When to commence antibiotics

- **Spontaneous onset of labour**: Because of the association of heavy colonisation with early onset neonatal disease, IV antibiotic prophylaxis for GBS should be provided at the onset of labour or rupture of the membranes. Women who require GBS antibiotic prophylaxis should be advised to come to the hospital earlier rather than later when labour commences and immediately when their membranes rupture.
- **Induction of labour (IOL) -** Women undergoing IOL should commence prophylactic IV antibiotics at ARM / establishment of labour or ROM. Antibiotics do not need to be commenced at insertion of Foley's catheter or prostaglandins.

Management in specific situations

GBS positive women with pre-labour rupture of membranes at term

See KEMH Obstetrics & Gynaecology Clinical Guideline: Rupture of Membranes-Spontaneous (Previable, Preterm and Term): 'Term: Prelabour rupture of membranes at Term'. Known carriers of GBS with pre-labour rupture of membranes at term should commence antibiotics immediately and induction commenced without delay[1].

Women presenting with preterm rupture of membranes (PROM) with unknown GBS status

Obtain vaginal - rectal GBS swab for culture. Commence prophylaxis antibiotics (oral erythromycin) as per the preterm prelabour rupture of membranes (PPROM) guideline, see Clinical Guideline Obstetrics & Gynaecology: Rupture of Membranes-Spontaneous (Previable, Preterm and Term): 'PPROM Medical and Midwifery Management'. GBS prophylaxis should be commenced in labour if the risk factors of premature birth <37 weeks or ROM >18hours are present. Antibiotic therapy should be adjusted to broader cover in the case of significant intrapartum fever/ suspected intra-amniotic infection. See KEMH O&G Infections in Obstetrics (Intra-amniotic chorioamnionitis and postpartum infection): Diagnosis and Management guideline.

Women in Family Birth Centre and Community Midwifery Program

The midwife will:

- confirm the woman has no penicillin allergy
- obtain the order for antibiotics from the medical practitioner
- insert an IV cannula and commence antibiotics as per recommendations for prophylaxis and medical practitioners orders

High risk women declining intrapartum antibiotic prophylaxis

The woman should be advised regarding the significantly higher risk of the baby developing EOGBS than if she receives prophylactic antibiotics. These neonates should be closely monitored for 12 hours after birth.[1]

Management of a newborn at risk of GBS sepsis

See CAHS Neonatology guidelines:

- Sepsis Calculator - Assessment of Early-Onset Sepsis in Infants > 35 Weeks
- Sepsis: Neonatal: Septic Screening Procedures- Neonates

References

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3. American College of Obstetricians and Gynecologists. Prevention of group B streptococcal early-onset disease in newborns: ACOG committee opinion. **Obstet Gynecol**. 2020;135(2):e51-72.
4. Hasperhoven GF, Al-Nasiry S, Bekker V, Villamor E, Kramer BWW. Universal screening versus risk-based protocols for antibiotic prophylaxis during early-onset group B streptococcal disease: A systematic review and meta-analysis. **BJOG**. 2020;127:680-91.
5. Apgar BS, Greenberg G, Yen G. Prevention of Group B Streptococcal Disease in the Newborn. **American Family Physician**. 2005;71(5):903-10.

Bibliography

Antibiotic Expert Group. Antibiotic guidelines V16. 2019. Last accessed 9 Dec 2020.

Related KEMH / WNHS policies, procedures and guidelines

KEMH Clinical Guidelines:

Antimicrobial Stewardship: Sepsis and Septic Shock: Antibiotics for Adult Patients at KEMH

Obstetrics & Gynaecology:

- Infections in Obstetrics: Intra-amniotic Chorioamnionitis and Postpartum Infection
- Infections: Antibiotic Prophylaxis for Caesarean Section
- Preterm Labour
- Rupture of Membranes- Spontaneous (Previable, Preterm and Term)
- Vaginal Procedures: Swabs: Low Vaginal, High Vaginal, Endocervical and Rectal

Pharmacy: Medication Monographs (Adults): Benzylpenicillin; Cefazolin (Cephazolin); Clindamycin; Vancomycin- IV

Neonatology (CAHS)

- Sepsis Calculator - Assessment of Early-Onset Sepsis in Infants > 35 Weeks
- Sepsis: Neonatal: Septic Screening Procedures- Neonates

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