Practice Resource: Antibiotic use for GBS prophylaxis and with preterm prelabour rupture of membranes

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This resource, in keeping with principles of antimicrobial stewardship, should serve as a guide to the selection and use of antibiotics for GBS prophylaxis and with preterm rupture of membranes.

Universal screening and intrapartum prophylaxis help reduce the incidence of neonatal GBS disease. In those babies that are infected, there is a mortality rate of 20-30% among preterm infants and 2-3% among term infants[1]. Heavy colonization with GBS bacterium has been associated with intrauterine infection, preterm labour, and preterm pre-labour rupture of membranes (PPROM). Antibiotic use with PPROM can help prevent or treat infection, which has the potential to both reduce fetal morbidity and mortality, and potentially prolong the pregnancy by delaying the progression to preterm birth[2].

Current Recommendation:

The information outlined below is summarized from SOGC Clinical Practice Guideline No.233 – Antibiotic Therapy in Preterm Premature Rupture of the Membranes (Reaffirmed September 2017), and No.298 – The Prevention of Early-Onset Neonatal Group B Streptococcal Disease (Reaffirmed August 2018). The SOGC guidelines reflect the available evidence and professional opinion at the time of publication and are subject to change. Amendments made to the SOGC guidelines at a local level should be well documented to illustrate the basis for clinical decision-making in the course of care.

Screening	ALL patients should be screened for GBS at 35-37 weeks gestation. Request susceptibility testing on anyone who is allergic to penicillin. Anyone presenting with TPTL or PPROM should be screened for UTIs, STIs, & GBS (treat appropriately). A negative GBS screen is considered valid for 5 weeks and should be repeated beyond this timeframe.
Antibiotics: GBS Prophylaxis	Penicillin G 5 million units IV, the 2.5 million units every 4 hours IF allergy to penicillin: - Low risk of anaphylaxis: Cefazolin 2g IV, then 1g every 8 hours - Risk of anaphylaxis: Clindamycin 900mg IV every 8 hours (**if sensitivity confirmed, rates of resistance are as high as 40% in Nova Scotia; also increases the risk of c. difficile**), OR Vancomycin 1g IV every 12 hours
Antibiotics: Latency in PPROM	Choose one of the two following regimens: (1) Erythromycin 250mg PO every 6 hours for 10 days (preferred in some centers) (2) Ampicillin 2g IV every 6 hours AND Erythromycin 250mg IV every 6 hours for 48 hours, followed by Amoxicillin 250mg PO every 8 hours AND Erythromycin 333mg PO every 8 hours for 5 days IF allergy to penicillin, erythromycin should be used alone.
Antibiotics: Fever/signs of infection	Broad spectrum IV antibiotic targeting chorioamnionitis, and including coverage for GBS (regardless of gestational age or GBS status).

Gestation	Membranes	Latency in PPROM	GBS Prophylaxis	Other considerations
Preterm	Intact (Preterm Labour)	N/A	Provide antibiotic prophylaxis for a minimum of 48 hours, or until delivery, unless a NEGATIVE screen is documented (by Vaginal-rectal culture) within 5 weeks of presentation. Stop the antibiotics at any point it is determined the patient is not in true labour, or the GBS culture obtained on admission is confirmed to be negative. *Alternatively, antibiotic prophylaxis for GBS could be initiated once labour has been confirmed.	Signs of infection. Await spontaneous labour, unless delivery is otherwise indicated.
	Ruptured (PPROM)	≤32wks: Yes >32wks: provide antibiotics if fetal lung maturity has not previously been confirmed and/or delivery is not planned	Provide antibiotic prophylaxis for a minimum of 48 hours, or until delivery, unless a NEGATIVE screen is documented (by Vaginal-rectal culture) within 5 weeks of presentation. Stop the antibiotics at any point the GBS culture is confirmed to be negative. *See Footnote*	Signs of infection. Risk of infection with increasing latency must be weighed against risk of prematurity in considering IOL.
Term	Intact (Onset of Labour)	N/A	Provide Antibiotic prophylaxis to ANY woman: - with a + GBS screen at 35-37 weeks (within the 5 weeks prior to labour/ROM) - with a + GBS bacteriuria at any time in the current pregnancy - with a previous infant with a GBS infection Continue antibiotic prophylaxis until delivery.	Signs of infection.
	Ruptured (PROM)	N/A	Provide Antibiotic prophylaxis to ANY woman: - with a + GBS screen at 35-37 weeks (within the 5 weeks prior to labour/ROM) - with a + GBS bacteriuria at any time in the current pregnancy - with a previous infant with a GBS infection Continue antibiotic prophylaxis until delivery. IF GBS status is unknown and ROM > 18 hours provide GBS prophylaxis.	GBS+: IOL is indicated Signs of infection. GBS unknown or negative: with ROM at term, oxytocin induction should be considered before expectant management. Signs of infection

* Recent publications (Mader & Craig, 2018) note variations in recommendations from national bodies with regards to GBS prophylaxis before labour in the presence of PPROM. Challenges arise with the level of evidence for various recommendations and emerging antibiotic resistance. Specific guidance may vary among providers due to the ambiguity of evidence. The plan of care should be well documented to reflect clinical decision-making in consideration of current guidelines and good antimicrobial stewardship.

References & Resources:

[1] Money, D. & Allen, V. M. (2018). No.298-The prevention of early-onset neonatal group B streptococcal disease. *Journal of Obstetrics & Gynecology Canada 40*(8), e665-e674.

[2] Yudin, M. H., van Schalkwyk, J. & VanEyk, N. (2017). No.233-Antibiotic therapy in preterm premature rupture of the membranes. *Journal of Obstetrics & Gynecology Canada 39*(9), e207-e212.

[3] Centers for Disease Control and Prevention (2010). Prevention of perinatal group B streptococcal disease. *MMWR, 59*, 1-32.

[4] Mader, J. & Craig, C. (2018). Management of group B streptococcus-positive women with preterm premature rupture of membranes: Still a therapeutic dilemma. *Journal of Obstetrics and Gynecology Canada, 40*(12), 1627-1631.

[5] Smith, A., Allen, V. M., Walsh, J., Jangaard, K., & O'Connell, C. M. (2015). Is preterm premature rupture of membranes latency influenced by single versus multiple agent antibiotic prophylaxis in group B streptococcus positive women delivering preterm? *Journal of Obstetrics and Gynecology Canada, 37*(9), 777-783.

[6] The IWK Antimicrobial Stewardship Spectrum App can be downloaded for up to date information and guidance regarding antibiotic selection.