Maine Medical PARTNERS Women's Health

A department of Maine Medical Center

Prevention of Early Onset GBS Disease

Introduction:

The universal testing and treatment strategy for the identification and management of maternal GBS carriers has resulted in the decline of early onset neonatal GBS by 80%.[1] Central to the approach is the identification of carriers, between 15% and 40% of all pregnant women, and treatment of these mothers during labor prior to delivery.

In 2018, guideline stewardship was transferred from the CDC to ACOG and the American Academy of Pediatrics. These guidelines should be accessed to direct GBS screening, prophylaxis, and management decisions.[2,3]

Recommendations

Screening:

Screening is indicated for all pregnant women for GBS at 36 0/7 – 37 6/7 weeks except those with GBS bacteriuria during the current pregnancy OR history of a previous GBS-infected newborn.

A. Single swab from lower vagina and through anal sphincter (before digital exam, before lubricants)
B. Selective media
    a. Follow the ACOG Committee Opinion and the American Society of Microbiology protocols for transport and laboratory processing procedures
        i. Nucleic acid amplification testing (NAAT) does not allow for susceptibility testing, and rapid testing failure rate is 7 – 10%.[4] Intrapartum NAAT testing alone does not adequately replace routine prenatal screening. NAAT testing may be considered in low risk, unknown GBS scenarios at term – refer to ACOG.[2]
C. Culture even if planned cesarean birth (risk of unanticipated labor or ROM)
D. Consider reculture if term with negative culture ≥ 5 weeks prior
E. Penicillin allergy – order clindamycin susceptibility testing if high risk of anaphylaxis: angioedema, respiratory distress, urticarial.

Treatment indications presenting in labor or with PROM:

Treat:

A. **Positive GBS rectovaginal swab culture obtained at 36 0/7 weeks or more during current pregnancy with exception of pre-labor cesarean with intact membranes**
    a. Note: prior pregnancy GBS culture positive is NOT an indication for treatment **if known** culture negative at ≥36 weeks in current pregnancy
B. **Prior infant with early onset invasive GBS**
C. **GBS in urine during current pregnancy**
D. **If GBS unknown – treat when:**
    a. **≥37 with positive culture prior pregnancy**
    b. **<37 weeks (preterm labor)**
    c. **Membrane rupture >18 hours**
    d. **Intrapartum fever ≥100.4°F (≥ 38.0°C)**

Treatment:

A. Penicillin G: IV, 5 million units IV load, then 3 million units every 4 hours OR
B. Ampicillin: 2 grams IV then 1 gram every 4 hours

Allergy to Penicillin:

A. Alternative antibiotics
    a. Low risk: Cefazolin 2 grams IV, then 1 gram every 8 hours
    b. High risk
        i. Susceptible to clindamycin: Clindamycin, 900 mg IV every 8 hours
        ii. Non-susceptible: Vancomycin: 20 mg/kg every 8 hours.
            1. Maximum single dose 2 g. Minimum infusion time is 1 hour, or 500 mg/30 min for dose > 1g.
    c. Unknown risk for anaphylaxis options:
        i. Penicillin allergy skin testing or cephalosporin or clindamycin if susceptible or vancomycin if not susceptible to clindamycin

B. **Option** for low risk allergies OR allergies of unknown severity:
    a. Penicillin allergy skin testing
        i. If absence of type I hypersensitivity reaction – permits use of preferred beta-lactams for GBS prophylaxis AND in future medical care

Pediatric Implications

A. Neonatal risk assessment options for treatment include categorical and multivariate approaches.
    a. Penicillin G, ampicillin or cefazolin administered ≥ 4 hours prior to delivery considered “adequate” treatment [3]

Miscellaneous

A. Do not delay obstetric interventions, when necessary, to achieve 4 hours antibiotic exposure prior to birth

B. Preterm labor <37 0/7 weeks
    a. obtain GBS culture, start antibiotic prophylaxis
    b. If negative – GBS treatment not required
    c. If positive or not available – treat while in labor
    d. If negative and reaches 36 0/7 – 37 0/7 weeks, OR ≥ 5 weeks post culture when labor recurs– reculture

C. PPROM
    a. Obtain culture and start antibiotics for latency that include ampicillin
    b. If labor – continue antibiotics until birth
        i. At or beyond 34 0/7 weeks, delivery recommended
    c. If no labor – continue IV latency antibiotics for 48 hours
        i. If culture negative – can discontinue GBS prophylaxis, repeat culture after 5-week window if not delivered
        ii. If culture positive or not available - GBS antibiotic prophylaxis at onset of labor
        iii. PPROM and penicillin allergic – conversion to oral antibiotic after 48 hours IV may include first-generation cephalosporin for low risk allergies. Consult ACOG ref. for high risk allergies.[2]

References:

1. Nanduri SA, Petit S, Smelser C, Apostol M, Alden NB, Harrison LH, et al. Epidemiology of invasive early-onset and late-onset group B streptococcal disease in the United States, 2006 to 2015: multistate laboratory and population-based surveillance [preprint]. JAMA Pediatr 2019; DOI: 10.1001/jamapediatrics.2018.4826.

2. Prevention of Group B Streptococcal Early-Onset Disease in Newborns: ACOG Committee Opinion, Number 782. Obstet Gynecol. 2019;134(1):e19-e40.

3. Puopolo KM., Linfield R, Cummings JJ, AAP, Committee on Fetus and Newborn, AAP committee on Infectious Diseases Management of Infants at Risk for Group B Streptococcal Disease. Pediatrics. 2019;144(2):e20191881

4. El Helali N, Habibi F, Azria E, Giovangrandi Y, Autret F, Durand-Zaleski I, et al. Point-of-care intrapartum group B streptococcus molecular screening: effectiveness and costs. Obstet Gynecol 2019;133:276–81.