GBS (GROUP B STREP) IN PREGNANCY

FLAME LECTURE: 97

BURNS / ROSENBAUM / STELLER 10.15.26

LEARNING OBJECTIVES

- Upon completion of this lecture, participants should be able to:
  - Describe the maternal and neonatal risks associated with Group B Streptococcus (GBS) colonization and infection.
  - Identify appropriate screening strategies for GBS during pregnancy.
  - Determine indications for intrapartum antibiotic prophylaxis, including special clinical circumstances.
  - Select appropriate antibiotic regimens for GBS prophylaxis based on maternal allergy history and antimicrobial susceptibility.

EPIDEMIOLOGY

- Maternal Colonization:
  - 10-30% of women are colonized in the vagina/rectum
  - Approximately 50% of women who are colonized will transmit the bacteria to their newborns via vertical transmission
  - In the absence of intrapartum antibiotic prophylaxis,1-2% of those newborns will develop neonatal GBS early-onset disease (0-6 days of age)
  - Mortality rate of neonatal early-onset GBS disease is 1-3% in term infants and 20-30% in preterm infants
- Maternal Infection Risks:
  - Asymptomatic bacteriuria
  - Cystitis
  - Pyelonephritis
  - Intra-amniotic infection
  - Endometritis
  - Bacteremia

EARLY-ONSET NEONATAL INFECTION

- 0 to 6 days of life
- Most commonly manifests as generalized sepsis, pneumonia, or meningitis
- Since maternal screening and antibiotic prophylaxis implemented, incidence decreased from 1.8 --> 0.24 per 1000 live births (from 1990-2016)
- Risk factors:
  - Preterm delivery (<37 weeks of gestation)
  - Premature rupture of membranes at any gestation
  - Rupture of membranes for ≥18 hours
  - Chorioamnionitis
  - GBS bacteriuria during current pregnancy
  - Temperature ≥38°C (100.4°F) during labor
  - Prior delivery of an infant with GBS disease

GBS BACTERIURIA

- GBS bacteriuria may be found incidentally during the antepartum period or in patients with a symptomatic UTI

Finding	Antepartum Treatment	Intrapartum Prophylaxis
Asymptomatic GBS bacteriuria ≥100,000 CFU/mL	Yes	Yes
Asymptomatic GBS bacteriuria below 100,000 CFU/mL	No	Yes
Symptomatic GBS urinary tract infection	Yes	Yes

UNIVERSAL SCREENING

- Universal GBS screening via vaginal-rectal culture at 36 0/7-37 6/7 weeks of gestation (ACOG Committee Opinion 797) unless already had GBS bacteriuria this pregnancy
  - Negative culture results are valid for 5 weeks
  - Rapid intrapartum NAAT may be considered when GBS status is unknown AT TERM
    - Rectovaginal cultures are still preferred for routine screening
    - But NAAT has faster turn around (~2-3 hours)
    - Paez-Castellanos et. al. 2026 – Meta-analysis of 52 trials and 25K patients – qPCR Sensitivity: 90%, Specificity 96%, PPV 86%, NPV 97%
      - Negative NAAT does not exclude GBS colonization; intrapartum risk factors supersede negative NAAT results

UNIVERSAL SCREENING

- Collection
  - Lower vaginal–rectal swab (through anal sphincter); no speculum; self-collection acceptable.
- Processing
  - Selective broth enrichment (18–24 hours), followed by culture.
- Turnaround
  - Approximately 48–72 hours for conventional culture; varies by laboratory.

MANAGEMENT: PROPHYLAXIS

Who should receive prophylaxis:

- History of previous infant with GBS sepsis/infection irrespective of testing this pregnancy
- GBS bacteriuria during this pregnancy
- GBS positive during routine screening or intrapartum NAAT
- GBS Unknown status in labor <37 weeks irrespective of history
- GBS Unknown status at term this pregnancy + history of GBS colonization in a previous pregnancy (can be offered and determined via patient-centered decision making)
- GBS Unknown status at term and ROM ≥ 18 hours
- GBS Unknown status at term and maternal fever ≥ 100.4 F (38 C)

Who does not need prophylaxis:

- GBS negative screen this pregnancy within last 5 weeks
- C-section delivery before ROM
- GBS unknown in labor, at term, with ROM < 18 hours, and no fever

MANAGEMENT: PROPHYLAXIS

- Recommended to receive > 4hrs prior to delivery (but necessary obstetric interventions should not be delayed if the 4 hours are not completed)
  - *Penicillin G 5* million units IV (initial dose) + 2.5-3 million units IV q4 hrs until delivery
- For those who report an allergy to penicillin:
  - Penicillin allergy testing should be considered (b/c often they are historical mild reports of reactions)
  - Low-risk for Anaphylaxis(i.e., rash): **Cefazolin 2g IV loading dose then 1g IV q8 hrs til delivery** (only 10% cross-reactivity between penicillins and cephalosporins)
  - High-risk for Anaphylaxis: determine sensitivities to both clindamycin AND erythromycin
    - Sensitive to BOTH: use **Clindamycin (900 mg IV q 8hrs)**
    - Resistant to EITHER: use **Vancomycin (20 mg/kg IV every 8 hours [max 2g/dose])**
      - Erythromycin no longer used due to high resistance, but when culture resistant to erythromycin, clindamycin is also likely not effective
    - If sensitivity testing not performed: **Vancomycin (20 mg/kg IV every 8 hours [max 2g/dose])**

MANAGEMENT: PRETERM LABOR / PPROM

- If patients present with threatened preterm labor (<37w), and are GBS unknown, they should be swabbed for GBS before starting prophylaxis for GBS, however, antibiotics should not be held to await results
  - If they do not progress in labor, this can be discontinued
- If patients present with PPROM (<37w), and are GBS unknown, they should be swabbed for GBS before starting latency antibiotics, however, antibiotics should not be held to await results
  - The ampicillin and amoxicillin portion of latency abx will cover GBS
  - If there is an allergy to PCN, management will be similar to previous
    - If low risk for anaphylaxis, Cefazolin + Azithromycin x 48 hours
    - If high-risk, Clindamycin + Azithromycin
    - If high-risk + GBS clindamycin-resistant, Vancomycin + Azithro

MANAGEMENT: LABOR
DURATION OF GBS PROPHYLAXIS

0-2 h	2-4 h	≥ 4 h
Limited exposure	Partial benefit	Optimal exposure
Risk: 1.6%	Risk: 0.9%	Risk: 0.4%

- Observed neonatal clinical sepsis risks are observational associations, not absolute GBS transmission risks (ACOG CO 797)
- The ≥4-hour definition of adequate prophylaxis applies to penicillin, ampicillin, and cefazolin in neonatal risk assessment.
  - Clindamycin and vancomycin are not considered fully adequate for neonatal risk stratification, regardless of duration, because efficacy data are more limited.

REFERENCES & RESOURCES

- ACOG Committee Opinion No. 797: *Prevention of Early-Onset Group B Streptococcal Disease in Newborns*. February 2020
- Páez-Castellanos E, Burgos-Cárdenas AJ, Gaitán-Duarte H, Rubio-Romero JA, Vargas-Rodriguez DD, Sanabria-Mora F. Rapid tests for detecting group B streptococcus colonization in pregnant women: A systematic review and meta-analysis of diagnostic accuracy. Int J Gynaecol Obstet. 2026 Sep;174(3):1254-1266. doi: 10.1002/ijgo.70977. Epub 2026 Mar 26. PMID: 41883345; PMCID: PMC13505267.
- UpToDate – Early-onset neonatal group B streptococcal disease: Prevention
- UpToDate - Group B streptococcal infection in pregnant women
- UpToDate – Group B streptococcal infection in neonates and young infants