Shannon Brooke, MD
James Whitworth, PhD
Eglin Air Force Base Family Medicine Residency, Eglin AFB, Fla

Nancy Calabretta, MS, MEd
Cooper University Hospital, Camden, NJ

How best to manage the patient in term labor whose group B strep status is unknown?

Evidence-based answer

Monitor the patient and treat her with intrapartum chemoprophylaxis based on identified risk factors, unless a rapid, highly sensitive (≥85%) polymerase chain reaction (PCR) test is immediately available to evaluate for group B *Streptococcus* (GBS) (strength of recommendation: **B**, inconsistent or limited quality evidence).

FAST TRACK

The CDC recommends screening for GBS by culture at 35 to 37 weeks for most women

Evidence summary

GBS infection is a leading cause of neonatal bacteremia, pneumonia, and meningitis.[1] Approximately 10% to 30% of pregnant women are colonized with GBS in the vagina or rectum.[2,3] Giving intrapartum antibiotics to women at high risk for GBS colonization (**TABLE 1**) has significantly reduced the incidence of neonatal sepsis, from approximately 2 cases to 0.5 cases per 1000 live births.[1,3]

Universal screening is the way to go

A multistate retrospective cohort study (N=5144) concluded that universal screening by culture for GBS at 35 to 37 weeks' gestation is more effective than treating patients based on risk-factor criteria (relative risk [RR]=0.46; 95% confidence interval [CI], 0.36-0.60).[4] The Centers for Disease Control and Prevention's (CDC) 2002 revised guidelines recommend universal screening by culture at 35 to 37 weeks, with 2 exceptions: women who had GBS bacteriuria during the current pregnancy and women who have given birth to an infant with invasive GBS disease.[5] The GBS status of 5% to 10% of term patients remains unknown at onset of labor because of inadequate prenatal care or out-of-date GBS culture results (>5 weeks).[6,7]

PCR is the most accurate rapid test for GBS

A 2006 systematic review of 29 prospective studies found the PCR test to be the most accurate rapid assessment for GBS status at onset of labor.[8] The test was 96% sensitive (95% CI, 0.88-0.99) and 98% specific (95% CI, 0.96-0.99) compared with optical immunoassay, DNA hybridization, enzyme immunoassay, latex agglutination, and Islam starch medium tests (**TABLE 2**).[8] Culture, usually on selective media, was the gold standard.

The rapid PCR test takes about 40 minutes, making it useful to determine the need for antibiotic prophylaxis in laboring, full-term, GBS-status-unknown women. If a rapid PCR test isn't available, a woman with unknown GBS status and 1 or more of the CDC risk factor criteria should receive intrapartum antibiotics.[5]

Chlorhexidine has no effect

Vaginal disinfection with chlorhexidine during delivery has been used to prevent GBS transmission, but no highly controlled trials have demonstrated a benefit or consequence of this approach. A systematic review of 5 randomized and quasi-randomized, variable-quality trials comparing vaginal disinfection with chlorhexidine with placebo found no statistically significant reduction in early-onset neonatal GBS sepsis (RR=2.32; 95% CI, 0.34-15.63), pneumonia (RR=0.35; 95% CI, 0.01-8.60), or meningitis (RR=0.35; 95% CI, 0.01-8.60).[9]

Recommendations

The American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the CDC recommend screening all pregnant women at 35 to 37 weeks' gestation and administering prophylaxis to all GBS carriers.[5,10] They also advocate intrapartum antibiotic prophylaxis for pregnant women whose GBS status is unknown and who have a risk factor for GBS listed in **TABLE 1**.[5,10] Rapid tests to detect GBS when status is unknown should replace the risk-based approach only if the test has a sensitivity of at least 85%.[5] ■

TABLE 1

Risk factors for GBS

Temperature >100.4°F
Rupture of membranes >18 hours
Preterm labor <37 weeks
GBS bacteriuria anytime during pregnancy
Previous infant with early-onset GBS infection

GBS, group B *Streptococcus*.

Source: 2002 CDC guidelines[5] in consensus with the American Academy of Pediatrics and the American College of Obstetrics and Gynecology.

TABLE 2

How accurate are intrapartum tests for GBS?

TEST	LR+	LR–	TYPICAL DURATION (MIN)
Rapid PCR	38.8	0.06	40-100
Optical immunoassay	16.01	0.35	30
DNA hybridization	NA	NA	60-1440
Enzyme immunoassay	9.37	0.78	5-10
Latex agglutination	83.18	0.43	70-85
Islam starch medium	28.33	0.57	120-1400

GBS, group B *Streptococcus*; LR+, positive likelihood ratio; LR–, negative likelihood ratio; PCR, polymerase chain reaction.
Tests with an LR >10 effectively rule in disease; tests with an LR <0.1 effectively rule out disease.
Source: Honest H et al.[8]

Acknowledgements

The opinions and assertions contained herein are the private views of the authors and should not be construed as official or as reflecting the views of the US Air Force Medical Service or the US Air Force at large.

References

1. Centers for Disease Control and Prevention. Prevention of perinatal group B streptococcal disease: a public health perspective. *MMWR Recomm Rep.* 1996;45:1-24.
2. Regan JA, Klebanoff MA, Nugent RP. The epidemiology of group B streptococcal colonization in pregnancy. Vaginal Infections and Prematurity Study Group. *Obstet Gynecol.* 1991;77:604-610.
3. Zangwill KM, Schuchat A, Wenger JD. Group B streptococcal disease in the United States, 1990: report from a multi-state active surveillance system. *MMWR CDC Surveill Summ.* 1992;41:25-32.
4. Schrag SJ, Zell ER, Lynfield R, et al. A population-based comparison of strategies to prevent early-onset group B streptococcal disease in neonates. *N Engl J Med.* 2002;347:233-239.
5. Schrag S, Gorwitz R, Fultz-Butts K, et al. Prevention of perinatal group B streptococcal disease. Revised guidelines from CDC. *MMWR Recomm Rep.* 2002;51:1-22.
6. Nemunaitis-Keller J, Gill P. Limitations of the obstetric group B *Streptococcus* protocol. *J Reprod Med.* 2003;48:107-111.
7. Clemens CJ, Gable EK. The development of a group B *Streptococcus* prevention policy at a community hospital. *J Perinatol.* 2002;22:523-525.
8. Honest H, Sharma S, Khan KS. Rapid tests for group B *Streptococcus* colonization in laboring women: a systematic review. *Pediatrics.* 2006;117:1055-1066.
9. Stade B, Shah V, Ohlsson A. Vaginal chlorhexidine during labour to prevent early-onset neonatal group B streptococcal infection. *Cochrane Database Syst Rev.* 2004;(3):CD003520.
10. American College of Obstetricians and Gynecologists. ACOG Committee Opinion: No. 279, December 2002. Prevention of early-onset group B streptococcal disease in newborns. *Obstet Gynecol.* 2002;100:1405-1412.