Prenatal Testing: Group B Strep

What is GBS?

Group B streptococcus (GBS) is a normal transient intestinal bacteria that is often present in the rectum, vagina, or urinary tract of adults. It usually causes no symptoms in young, healthy adults. It is of concern when a pregnant woman has it in her vagina because it can infect her baby, both during pregnancy and during birth. 75% of cases among newborns occur in the first week of life (early onset disease), and most of these cases are apparent a few hours after birth. GBS disease may also develop in infants one week to several months after birth (late onset disease). Meningitis is more common with late onset GBS disease. However, only about half of late onset GBS disease among newborns comes from a mother who is a GBS carrier; the source of infection for others with late onset GBS disease is unknown. Late onset disease is very rare. Once GBS has infected the baby, serious complications can arise within hours. GBS infection can cause pneumonia, meningitis, and death. Treatment will likely be a minimum of 10 days in the NICU on IV antibiotics. One of every 20-50 babies with GBS disease will die from infection. Babies that survive, particularly those who have meningitis, may have long term problems, such as hearing or vision loss or learning disabilities.

How common is GBS disease?

For moms who test positive for GBS, whose baby is born full-term and there are no known risk factors, there is a 1 in 200 chance her baby will develop GBS disease. For moms who test negative for GBS with no known risk factors, there is a 1 in 5,000 chance her baby will develop GBS disease.

The risk of early-onset GBS disease is highest when:

- The baby is premature (of babies who weigh more than 5 lb. 10 oz. fewer than 1 in 1,000, regardless of mother’s GBS status, will develop GBS disease)
- The mom develops a fever during labor
- Ruptured membranes for more than 18 hours before birth
- Previous baby with GBS disease
- Urinary tract infection caused by GBS during pregnancy

What are the symptoms of GBS disease? Common symptoms include:

- difficulty breathing or periods of not breathing
- lethargy or extreme drowsiness (baby is difficult to rouse or does not respond normally)
- seizures
- unstable temperature (too low or too high)
- cyanosis (blue or dusky hue to skin all over body, or around mouth and gums)
- difficulty nursing
What is the current testing and treatment for GBS?

The American College of Obstetricians and Gynecologists recommends that all women be tested for colonization (a simple test using a q-tip that you can do yourself with results usually available within 2 days) at 35-37 weeks of gestation. Women who test positive for GBS, who previously had a baby with GBS disease, or who had a urinary tract infection caused by GBS during pregnancy will be given IV antibiotics during labor. Women who have not been tested for GBS and who have risk factors are also given antibiotics to prevent GBS disease when birthing in a hospital. Antibiotics will quickly remove the bacteria from the vagina and rectum, and lower the risk of early-onset GBS disease in the newborn. There is currently no known prevention for late-onset disease (it is usually caused by bacteria in the environment, not by those bacteria carried by mom). However, IV antibiotics do not prevent all cases of GBS infection. The likelihood of neonatal infection with IV antibiotics is as follows:

- If a GBS-positive mother receives antibiotics: 1 in 4000
- If a GBS-positive mother does not receive antibiotics: 1 in 200
- About 1,700 out of 2.1 million babies per year get GBS disease at birth
- Another 1,500 get GBS disease in the weeks after birth

What are the benefits of being tested?

In the event that you transfer to the hospital prior to the birth, if can be helpful to know your GBS status. If you decline testing, you may receive prophylactic IV antibiotics and your baby may be kept for observation.

What are the risks of being tested?

There are no risks to the test itself. The test is fairly accurate if done within 5 weeks of birth. If positive, there is an 87% chance you will carry GBS at birth; if negative, there is a 96% chance you will not carry GBS at birth. However, if you test positive for GBS and need to transfer to a hospital for birth, you will be given antibiotics through an IV. Penicillin is the preferred antibiotic, which can cause a burning sensation in some women, and can cause an allergic reaction for 1 in 10 people. The use of any antibiotics can destroy “good” bacteria in your body and may lead to a vaginal yeast infection or thrush (a type of yeast infection). Use of antibiotics during labor also increases the risk of antibiotic-resistant infections in the newborn. Such widespread use of antibiotics may increase resistance to antibiotics in the general population, including more drug-resistant strains of GBS. There are significant risks associated with the antibiotic treatment, particularly antibiotic resistance in GBS and other bacteria, such as E. coli and MRSA. While the incidence of babies being infected by resistant organisms is low, each dose of antibiotics increases the overall chances of resistance developing. Antibiotics given to newborns also disrupt their normal colonization with their mother’s beneficial bacteria, thus increasing his risk of gastrointestinal distress and disease, allergies and asthma among other long-term health effects. It also allows other types of infectious bacteria to multiply, potentially creating the very risk for which you are being treated.

What alternatives do I have? What are their benefits and risks?

You can decline the test. If your baby is born full-term and is normal size, and you have no risk factors, the risk of GBS is less than 1 in 1,000.
1) There is some research to support the use of diluted Hibiclens (an anti-microbial solution widely available in drug stores) as a vaginal wash during labor to prevent transmission of GBS to newborns. One study showed that it worked as well as ampicillin to prevent the presence of GBS in the newborn. Also, it was less likely to lead to colonization with E. coli. However, Hibiclens has not been shown to reduce the rate of GBS disease in babies. Thus, it appears that while Hibiclens reduces the number of babies who get GBS bacteria, the same number of babies still get sick from GBS, indicating there are other factors involved in babies acquiring GBS disease. Some people experience a mild allergic reaction to Hibiclens, but severe reactions are extremely rare. Hibiclens has no known negative effects on the newborn. Please see additional handout Hibiclens Wash for Group B Strep for more information.

2) Empirical data supports the use of alternative treatments, such as oral garlic capsules, garlic cloves, echinacea tincture and capsules, supplemental vitamin C, grape seed extract, tea tree oil vaginal suppositories, and intravaginal use of garlic oil and cloves to promote healthy vaginal flora. For more information on how to use these remedies for prevention or treatment of GBS, see additional handout Natural Treatments to Reduce GBS Colonization.

3) Maintaining a healthy diet and immune system, high in fermented foods (such as kombucha, kefir, yogurt, miso, tempeh, and sauerkraut) and/or probiotic supplements, will help beneficial bacteria naturally out-compete the GBS. Heavy or systemic (non-transient) colonization is a greater risk for baby.

Other factors to consider

The incidence of GBS in newborns is based solely upon research done in hospitals, where personalized and non-interventional care is not the norm. As of yet, there are no published rates derived from out-of-hospital births attended by midwives. This is significant, because homebirths are associated with fewer vaginal interventions during labor, fewer maternal fevers, and less time between rupture of membranes and birth. The standard of care emphasizing antibiotics for all GBS-positive women does not address topics that are particularly pertinent to understanding why GBS infects certain babies and how therapies can be targeted more effectively. For example, it is not known if antibodies to GBS are produced in breastmilk, nor whether mothers produce antibodies to GBS that pass through the placenta, nor whether certain strains of GBS are more infectious than others. It is not known whether maternal colonization by GBS that occurs for the first time during pregnancy has an impact on newborn infection rates, as it does for certain other infections during pregnancy. Most significantly, no studies have ever been published that indicate whether the strain of GBS which infected most babies with sepsis was even the same strain that the mother carried, or was a strain picked up from the hospital environment. The risk of GBS infection is dramatically increased when routine obstetrical interventions, including vaginal exams, stripping membranes and artificial rupturing of membranes, are used during labor and birth. With ruptured membranes, vaginal exams increase the likelihood of newborn GBS infection up to four times.

In my practice, I reduce obstetrical interventions to a minimum in order to reduce the likelihood of neonatal GBS infection. Evidence supports a non-invasive style of practice as a way to reduce the incidence of GBS disease.

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