

Testing and Treatment for Group Beta Strep

Overview ~ Group B streptococcus (GBS) is a specific type of bacteria. It is present in the alimentary tract of approximately one third of adults at any given time with some variation based on age and race. GBS is transient and often comes and goes. As a general rule, it does not make healthy adults or healthy children sick. However, it can cause serious or even fatal illness in newborns. In newborns, GBS is the most common cause of septicemia (a generalized blood infection) and meningitis (infection of the fluid and lining surrounding the brain). It can also cause neonatal pneumonia. Premature, sick and low birth weight babies are especially at risk. In pregnant women, GBS can cause urinary tract infections and uterine infections (which can lead to premature rupture of membranes or preterm labor).

How does an unborn baby get exposed to GBS? The generally accepted theory of the route of infection is that the GBS bacteria, which usually reside in the lower third of the vagina, can migrate up the birth canal to the uterus and cause the amniotic fluid to become colonized with the GBS bacteria (vertical transmission). When this happens, the mother will usually develop a fever. When the amniotic membrane or 'sac' is intact, the baby is usually protected from exposure. If the water doesn't break until the baby is about to be born (or less than 18 hours before birth) and the mother herself remains healthy, the baby is not generally considered to be at risk. However, some babies develop a GBS infection with their amniotic sac intact and some babies develop a GBS infection even when their mothers tested negative for GBS. Just because a uterus or a baby is colonized with GBS it does not mean that the mother or baby will become ill.

How does GBS disease affect newborns? Only 1%-2% of babies who are colonized with GBS develop signs and symptoms of GBS disease. Three-fourths of the cases of GBS disease among newborns occur in the first 72 hours after birth (early-onset disease). Most of these cases are apparent within a few hours after birth. Sepsis, pneumonia, and meningitis are the most common problems. Premature babies are three times more susceptible to GBS infection than full-term babies. GBS disease may also develop in infants 1 week to several months after birth (late-onset disease). Meningitis is more common with late-onset GBS disease. Only about half of late-onset GBS disease among newborns comes from a mother who is colonized with GBS; the source of infection for others with late-onset GBS disease is unknown.

Can pregnant women be checked for GBS? Maternal GBS colonization can be detected during pregnancy by a vaginal/rectal swab, which is then cultured over approximately 3 days. Since GBS is a transient infection the result of the swab/culture is considered to be accurate for 5 weeks. Therefore, the CDC and ACOG recommend universal screening of all pregnant women by vaginal/rectal swabs at 35-37 weeks gestation in order to know the woman's GBS status at the

time of birth. If a woman has not given birth within 5 weeks of her test she should be tested again. A positive culture means that the mother is colonized with GBS, but not that she or her baby will definitely become ill. They further recommend the use of IV antibiotics in labor to prevent transmission of GBS from mother to baby at birth. Universal screening in conjunction with IV antibiotics in labor is estimated to be about 87% effective at reducing GBS in newborns.

The level of GBS colonization makes a difference, as heavy colonization is associated with the most frequent and most serious neonatal illness. If the mother is only lightly colonized, the risk of serious neonatal infection is reduced. It can be helpful to know if the colonization is specifically in the vagina (as compared to the rectum only). In order to reduce exposure to antibiotics and the physical limitations associated with IV fluids given during labor, some women choose to have a vaginal culture which will tell us if the vaginal colonization is light, moderate or heavy.

GBS can also be detected in a urine culture. Since GBS colonization of the urinary tract is closely associated with high colonization rates and high rates of infection in newborns women whose urine tests positive for GBS at any time in pregnancy are treated at the time of discovery and are usually not retested in the third trimester - they are presumed positive and also treated in labor.

Another approach, which is no longer formally recommended by the CDC, is "risk-based management." Under these protocols, prenatal testing is not automatically done. Instead, laboring women are given prophylactic antibiotic treatment if they have a history of GBS disease or develop certain risk factors during labor, such as prolonged rupture of membranes (more than 18 hours) or a fever over 100.4 (f). This method is estimated to be about 69% effective at reducing GBS in newborns.

For several decades, the CDC considered both universal screening and risk-based protocols to be appropriate methods of responding to the potential risk of GBS disease. At issue were the economic cost and the risk of antibiotic resistance created by prophylactic treatment of such a large number of women and babies in labor (approximately 1.2 million pregnant women) with antibiotics. Currently the number needed to treat (NNT) to prevent one case is 500. In June 2003, the CDC changed its policy and now recommends universal screening and prophylactic antibiotic treatment for GBS positive women.

Something to consider: If you chose not to test for GBS and we transfer to the hospital during labor, the hospital providers will want to treat mom based on risk factors and the pediatricians will want to place the baby under GBS observation protocols. The pediatricians may also observe a baby if the mom is positive and has not had at least two doses of IV antibiotics before the baby is born. Depending on the pediatricians and the circumstances of the labor and birth and the baby's

condition this “observation” may range from frequent temperature checks to blood draws and a spinal tap in the NICU.

What are the stats? GBS illness is the most common cause of life-threatening infections in newborns. Out of approximately 4 million births in the US each year, 1.2 Million women are GBS positive (most receive IV antibiotics in labor as a result) 8,000 babies get a GBS infection and about 300 die from the disease. One out of 200 babies born to GBS positive moms who do not receive IV antibiotics in labor will develop a mild, moderate, severe, or even life-threatening infection. These stats include preterm births, which is a significant risk factor for infection. Interestingly, studies show that at least 25% of the babies who develop a GBS infection are born to GBS negative mothers.

The statistical chance of a healthy, full-term baby having a fatal infection is approximately one out of 16,000 births. However, babies that survive a serious infection with GBS, particularly those who develop meningitis, may have long-term problems. This includes hearing or vision loss, learning disabilities and even permanent neurological damage such as mental or physical disabilities. This can occur whether or not IV antibiotics were given. The exact rate of neurological damage for healthy full-term babies is hard to quantify.

What about antibiotic use? Both the CDC and ACOG recommend administering intravenous antibiotics to GBS+ women in labor. A pregnant woman should receive at least two doses of IV antibiotics during the labor, at least 4 or more hours before the birth, in order for her unborn baby to receive the maximum prophylactic effects of the drugs. Treating women in labor or giving babies IV antibiotics after the birth reduces but does not eradicate the illness. About 13% of babies who get sick with a GBS infection each year received prophylactic antibiotics.

A small number of laboring women have a severe allergic reaction to the penicillin-based antibiotics, with about 1 out of 10,000 women (approximately 120 each year) experiencing anaphylactic shock, circulatory collapse and (rarely), cardiac arrest. If the mother is known to be allergic to penicillin, the CDC and ACOG recommend other antibiotics effective against GBS.

Additionally, women who are given antibiotics in labor are more prone to vaginal yeast infections and yeast infections of the breast (thrush) than women who have not had antibiotics. Antibiotics also kill healthy bacteria that babies are supposed to be colonized with. However, penicillin is a relatively narrow spectrum and kills fewer good bacteria than other antibiotics.

Are there “natural” or alternative preventatives or treatments for GBS? Yes! However, none of these methods have been tested with any scientific rigor. Certainly, if you are healthier then your

intestinal tract will be healthier and the chance of GBS colonization should be lower. So general recommendations (which by the way, your midwife wants you to follow anyway) include; getting enough sleep, eating a whole-food, varied diet with lots of fresh fruit and veggies and naturally fermented foods that is also very low in processed foods especially flour and sugars. General hygiene rules also apply (wiping from front to back etc). Eating vitamin C rich foods that include bioflavonoids may help to strengthen your amniotic sac reducing the risk of GBS transmission.

In Norway and other countries, an accepted treatment for GBS positive moms is to douche with 20:1 water to surgical rinse (hibiclens which is also called chlorhexidine gluconate and can be purchased at a drugstore) mixture in labor. This cannot prevent all cases of transmission since in some cases the GBS will have colonized the uterus before labor. The hibiclens is not considered systemic treatment and is not absorbed well and maternal blood concentrations are very low. The hibiclens rinse in labor is estimated to be about 50% effective at reducing GBS in newborns and there are 50% fewer postpartum infections in mothers who've used the rinse. The good news is that this treatment reduces infections of all types but the bad news is that like antibiotics it also kills the good bacteria that babies are meant to be colonized with.

There are also oral and vaginal therapies that have anecdotally helped to convert a positive GBS test to a negative test over time. If you test positive we can retest over time to see if your status changes. Because these therapies may alter your GBS test and GBS is transient, if you choose to do any of these therapies you must continue to do them until your baby is born. So make sure that you pick a protocol that is manageable for you.

Prenatal Oral Therapies (most effective when you use several)

- Probiotics with each meal – pick one with high potency (20B or more) and a multiple strain (8 or more)
- Echinacea Tincture 2-4x daily (do not use Echinacea for more than 2 weeks)
- Astragalus Root Tincture 2x daily (can be used long term) <http://herblore.com/services/ordering.htm>
- Vitamin C with bioflavonoids 100 to 200 mg, 4-5x daily or better still eat 2 grapefruit per day. Other good sources of Vitamin C: red peppers, oranges, kiwi and strawberries.
- Garlic supplement with each meal - this brand includes many immune enhancing supplements <http://www.wakunaga.com/html/products/kyolic/kyolic103.htm>
- Bee Propolis (do not use if allergic to bee stings!) a few drops two times a day http://www.vitaminshoppe.com/store/en/browse/sku_detail.jsp?id=RJ-1032

Prenatal Vaginal Therapies

- Garlic Vaginal Suppository: 1 clove of garlic vaginally nightly (you can wrap the garlic in cheesecloth to help with insertion and removal).
- Tea Tree or Lavender Oil Vaginal Suppository: You can purchase Tea Tree oil suppositories at health food store or online <http://www.vitacost.com/Thursday-Plantation-Tea-Tree-Oil>
- Probiotic Vaginal Suppository: Look for a kit with a 14-day supply of L. acidophilus capsules for oral use and vaginal use. Insert one capsule into the vagina each night before bedtime with a vaginal applicator. This allows the capsule to dissolve while sleeping. Take an oral capsule in the morning about 10 to 30 minutes before breakfast.

As always, you are encouraged to do your own research. Here are some good places to start.

The Centers for Disease Control <http://www.cdc.gov/groupBstrep/>

The Cochrane Library www.thecochranelibrary.com

The American Academy of Pediatrics <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;99/3/489>

The American College of Obstetricians and Gynecologists http://www.acog.org/publications/patient_education/bp105.cfm

The American College of Nurse Midwives www.midwife.org/

Probiotic studies <http://www.npicenter.com/anm/templates/newsATemp.aspx?articleid=16371&zoneid=24>

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=6565612&dopt=Abstract

Study on hibiclens in labor <http://www.ncbi.nlm.nih.gov/pubmed/10461843>

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