

ACCM

California College of Midwives

2005

Principles of Mother-Friendly Childbirth

Client Information ~ Testing for Group B 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. As a general rule, it does *not* make healthy adults or healthy children sick. However it **can causes serious, even fatal illness in newborns**, the elderly, and adults with immune suppressed conditions or chronic diseases. Premature, sick and low birth weight babies are especially at risk.

What research is being done to prevent GBS disease? Unfortunately, some babies still get GBS disease in spite of testing and antibiotic treatment. Vaccines to prevent GBS disease are being developed. In the future, women who are vaccinated may make antibodies that cross the placenta and protect the baby during birth and early infancy.

How does an unborn baby get exposed to GBS? Infection can only be acquired if the mother is **GBS-positive and only after her water breaks**. As long as the amniotic membrane or 'sac' is intact, the baby is protected from exposure. If the water doesn't break until the baby is about to be born (less than 12 hours before delivery) and the mother herself remains healthy, the baby is not generally considered to be at risk. However, if **the water breaks long before labor starts or a very long time before delivery**, the baby becomes vulnerable. Over the course of 18 to 24 hours 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 contaminated with the GBS bacteria. When this happens, the mother will usually develop a fever.

How does GBS affect babies? GBS illness is the most common cause of life-threatening infections in newborns. Out of approximately 4 million births in the US each year, **8,000 babies get a GBS infection and about 300 die from the disease**. One out of 200 babies exposed to GBS for longer than 18 to 24 hours will develop a mild, moderate, severe, or even life-threatening infection. Administering intravenous antibiotics to GBS+ 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. The routine use of IV antibiotics on approximately 30% of all laboring women (about 1.2 million annually) has resulted in an increase in **antibiotic-resistant e.coli infections** occurring in premature babies. 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.

General background Information

Does everyone who has GBS get sick? Most people who carry GBS in their bodies do not become ill. These people are considered to be "colonized." Adults can be colonized in the bowel, genital tract, urinary tract, throat, or respiratory tract. From 15 to 40% of pregnant women are colonized with GBS in the vagina or rectum. If the mother is GBS colonized her fetus may become colonized with GBS on the skin; this is the result of exposure during labor or birth.

What problems does GBS infection cause? 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. In pregnant women, GBS can cause urinary tract infections, uterine infections (amnionitis, endometritis), and stillbirth. Among men and non-pregnant women, the most common diseases caused by GBS are blood infections, skin or soft tissue infections, and pneumonia. Approximately 20% of these patients die from its complications (such fatalities are usually associated with other pre-existing diseases or a compromised immune system).

How does GBS disease affect newborns? Approximately 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 week of life ("early-onset disease"). Most of these cases are apparent 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.**

The perinatal risk associated with normal birth at term ~ The statistical chance of a healthy, full-term baby having a fatal infection are approximately **one out of 16,000 births**. This makes the statistical likelihood of perinatal death from a GBS illness about the same as the risk of maternal mortality associated with vaginal birth (one out of **16,666**). To put these numbers in perspective, the mortality rate for women of childbearing age from automobile accidents is **one out of 5,000**. 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.

How is GBS disease diagnosed and treated? GBS disease is diagnosed when the bacterium is grown from usually sterile body fluids, such as blood or spinal fluid. Cultures take a few days to complete. GBS infections in both newborns and adults are usually treated with IV antibiotics (e.g., penicillin or ampicillin) given slowly through a vein, along with IV fluids. A pregnant woman must receive at least two doses of IV antibiotics during the labor, at least 6 or more hours before the birth, in order for her unborn baby to receive the prophylactic effects of the drugs.

Can pregnant women be checked for GBS? GBS colonization can be detected during pregnancy or just before delivery by a vaginal and rectal swab for special culture or rapid screening. Rapid screening tests are not as good at detecting the bacteria but can be completed in 30 minutes to a few hours. They are only used during labor and only culture the vagina. Cultures collected before 25 weeks' gestation do not predict whether a mother will be colonized with GBS at delivery. Authorities suggest that cultures be done at 35-37 weeks' gestation, by swabbing both the vagina and rectum.

A positive culture means that the mother is colonized with GBS, but not that she or her baby will definitely become ill. Out of every 200 babies exposed, only one develops a GBS infection. Colonized women should not be given oral antibiotics before labor because antibiotic treatment at this time does not prevent GBS disease in newborns. Antibiotics must be given to GBS women during labor in order to be effective at preventing GBS disease in their new babies (approximately 87% success rate). The **level of colonization** also makes a difference, as heavy colonization is associated with the most frequent and most serious neonatal illness. If the mother is only lightly colonized, it reduces the risk of serious neonatal infection. 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 insist that GBS

cultures be collected only from the vagina. If the vaginal culture is positive for GBS, they ask that the level of colonization also be reported. While the CDC does not recommend these adaptations, some families believe that knowing specifically if the GBS bacteria are in the vagina and if so, identifying the level of colonization, helps to determine the course of action most appropriate for their situation.

Reducing GBS disease in newborns ~ Universal Screening or Risk-based protocols: Only two methods are recognized by the CDC. However, only one of them - **universal screening** – is currently recommended by the CDC. Universal screening requires that all pregnant women be tested for GBS at 35-37 weeks by obtaining vaginal-rectal cultures. All pregnant women who **test positive for GBS** are routinely given **2 doses of IV antibiotics during labor**. Most (but *not* all) GBS disease in newborns can be prevented if the mother receives the full course of prophylactic treatment at least 6 hours before birth (87% protective).

The other method (no longer recommended by the CDC) is **risk-based management**. Under these protocols, prenatal testing is not automatically done. Instead, laboring women are only prophylactically treated with antibiotics if they have **a history of GBS disease or develop certain risk factors during labor, such as prolonged rupture of membranes or a fever over 100.4 (f)**. This method is calculated to be 69% preventative, which means that 31% of babies who developed GBS disease were cared for under risk-based protocols or 18 percentage points higher than universal screening.

For several decades, the CDC considered both screening and risk-based protocols to be appropriate methods of responding to the potential risk of GBS disease. At issues were the economic cost and the risk of antibiotic resistance created by prophylactically treating such a large number of women in labor (approximately 1.2 million) 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 antibiotics treatment**. The only exception is for pregnant women who decline to be tested for GBS, in which case ‘risk-based’ protocols are still recommended.

The decision to take antibiotics during labor should balance risks and benefits. Penicillin is effective at preventing GBS disease in the majority of newborns and is generally safe. If the mother is known to be allergic to penicillin, other antibiotics effective against GBS will be used instead.

Who should be offered antibiotics when the membranes rupture or at the time of labor?

- (1) Any pregnant woman who **previously had a baby** with GBS disease, has a **history of urinary tract infections** caused by GBS, is in **pre-term labor** or has a **pre-term rupture of membranes**
- (2) All pregnant women who **culture positive** for GBS colonization

Colonized women at highest risk are those with any of the following conditions:

- 1. Premature or ‘pre-term’ labor and/or premature rupture of membranes -- before 37 weeks**
- 2. Prolonged rupture of membranes -- 18-24 hours or more before delivery**
- 3. Fever over 100.4 during labor or other signs of infection such as increased maternal pulse and increased fetal heart rate** (note: about 10% of women who have an epidural will develop a fever of 100.4 or greater in labor that is *not associated* with infection)

If a **GBS culture was not done** or the results are not available, physicians and midwives will recommend that antibiotics be given to women with **any of the risk conditions listed above**.

Women who are colonized with GBS but **do not have** any of the above risk factors or develop any of these complications have a **relatively low risk of delivering an infant with GBS disease**.

A colonized woman with none of the conditions above (no premature labor, intact membranes /no prolonged rupture of membranes, no fever in labor, etc) has the following statistical risks:

- 1 in 200 chance of delivering a baby with GBS disease if no antibiotics are given**
- 1 in 10 chance of experiencing a mild allergic reaction to penicillin (such as hives)**
- 1 in 10,000 chance of developing a severe allergic reaction (anaphylaxis) to penicillin.**

A severe allergic reaction or **anaphylactic shock** can be life-threatening to both mother and baby. It **always requires immediate emergency treatment**, which can include an emergency C-section. Anaphylactic shock can result in permanent neurological damage to mother and/or baby.

Who is at highest risk for GBS disease? Pregnant women with the following conditions:

- 1. Previous baby with GBS disease**
- 2. Urinary tract infections during pregnancy due to GBS bacteria**
- 3. GBS+ late in pregnancy, especially if heavily colonized in vagina**
- 4. Pre-Term Labor or premature rupture of membranes << 37 weeks (PTL w/ or w/o PPRM)**
- 5. Prolonged Rupture Of Membranes -- >> 24 or more hours before delivery (PROM)**
- 6. Fever during labor, other s/s of maternal or fetal infection**

The goal is to prevent early-onset GBS infection in newborns and, when possible, to reduce unnecessary exposure of mothers and babies to antibiotics, as a part of a general societal effort to reduce antibiotic-resistance from developing.

For more information, visit www.cdc.gov
Centers for Disease Control and Prevention, MS C-09
1600 Clifton Rd NE; Atlanta, GA 30333

Informed Consent *OR* Decline for Antepartal GBS Testing

I/we understand that there is no "perfect" answer for the issue of Group B strep – no perfect screening program, no perfect protocol which can specifically identify and prevent all GBS disease without also treating healthy women and babies; no drug that is 100% effective in treating a baby who develop a GBS infection after birth. The name of the game is risk reduction.

I/we understand there are two recognized methods to achieve that goal – universal screening and risk-based protocols. There are also adaptations of these CDC-approved methods, as well as a host of alternative methods not currently established as effective by the scientific literature. Every choice has its own risks & unintended consequences. I/we understand that it is our responsibility to decide which approach to use to manage the GBS risk in this pregnancy, including the choice to decline, after being fully informed, all diagnostic procedures, protocols or prophylactic treatments. However, **if symptoms of an infection develop during labor or after the birth, my midwife will be required to transfer my care (or my baby's) to an appropriate medical facility.**

I have satisfactorily had my questions answered and believe that I can make an informed decision regarding GBS testing. I understand the limitations of home-based midwifery care relative to the issue of GBS prophylaxis.

I _____, **would like / not like** to be tested for GBS at this time. Date _____

Client _____ Partner/Husband _____