**Group B Streptococcus (GBS) and Pregnancy**

**What is GBS?**
Group B Streptococcus is a bacteria that is one of the most frequent causes of infection in newborns. It is not a sexually transmitted infection. For adults, Group B Strep is a normal part of our body’s bacterial flora.

**GBS & Pregnancy**
Between 10 and 35 percent of women carry GBS in the lower genital tract. It can be transient, intermittent or have a long term presence within our bodies. In rare cases, GBS has been associated with miscarriage, premature rupture of membranes, premature birth and/or stillbirth. Very rarely, this bacteria can cause urinary tract infections, or an infection of the placenta or uterus leading to preterm rupture of membranes, preterm labour, stillbirth and/or postnatal wound infections. However, it is much more likely that GBS will not cause any problems during pregnancy. The main reason health professionals are concerned about this bacteria is because if babies pick up GBS as they pass through the birth canal, they can become very ill.

**How your baby can get GBS?**
GBS infection is rare (approximately 2 babies per 1000 babies in Canada) but very serious for newborn babies. It is possible for a baby to become infected before the waters break or labour starts. However, it is more likely that the bacteria may be transferred to the baby’s skin once your waters have ruptured, during labour and/or as your baby passes through the vagina. At birth, 50% of babies born to mothers who have GBS will become colonized (covered with the bacteria). Of those that become colonized, 98-99% will not have any problems. However, 1-2% will develop a serious infection called ‘GBS disease.’ The reason why this happens is not known, so it cannot be predicted. Babies who develop GBS infection or disease from the birth process are said to have ‘early onset’ GBS.

**Early onset GBS**
Of the very few babies who get sick, most do so within the first few hours of birth. Symptoms are
- Respiratory distress (breathing very quickly, or having difficulty breathing)
- Cyanosis (blue lips, face, hands and feet)
- Feeding difficulties/lethargy
- Temperature instability (fever or low temperature)
- Shock
- Sepsis

Babies with early onset GBS must be treated promptly with IV antibiotics. If treated early, many babies will recover. However, some babies (10 - 50%) will suffer permanent damage (such as blindness, deafness, mental retardation or learning disabilities) and/or will die (approx 9% of those affected). Remember this is rare, affecting approximately 2 babies per 1000 live births.

**Late onset GBS**
Very rarely babies may become sick with GBS infection between 7 days and 3 months of age following the birth. This is called ‘late onset’ GBS disease. In this case, infection is most likely picked up from handling or nasal sources. This can be prevented by practicing good hygiene and careful hand washing when caring for your baby.

**How do I know if I have GBS?**
Women can test themselves for GBS at the midwife’s clinic between 35 and 37 weeks of pregnancy. A cotton tipped swab is gently inserted about ½ inch into the vagina and drawn along the perineum and over the anus. This is then sent to the laboratory for analysis. This provides an indication as to whether a woman is likely to be either GBS+ or – at delivery.

**What are my Options?**
1. **Screen for GBS at 35 – 37 weeks pregnancy & treat in labour if GBS+**
   *This is the recommendation of the SOGC and the Canadian Pediatric Association*

   If the swab result shows you are GBS negative then no treatment is necessary unless you go on to develop signs of infection during labour. If the swab result returns showing you are GBS positive, then treatment with intravenous antibiotics in labour is recommended. IV antibiotics are highly effective at removing the GBS in your body, and protecting the baby from infection, thereby reducing the rate of early
onset GBS disease in newborns. Antibiotics (usually Penicillin G) are given intravenously as soon as active labour is established and continued every 4 - 8 hours until the baby is born. For treatment to be effective, you must receive at least one dose at least 30 minutes before your baby is born. You do not have to be hooked up to an IV pole for all of labour.

2. Screen for GBS at 35 – 37 weeks pregnancy & treat GBS+ women ONLY if risk factors present

Risk factors;
- Previous infant with Early Onset GBS disease
- GBS bacteriuria (urinary tract infection) this pregnancy (this indicates a more heavy colonization of GBS, increasing the risk of Early Onset GBS for the baby)
- Spontaneous onset of labour or rupture of membranes prior to 37 weeks (preterm labour)
- Rupture of membranes for 18 or more hours
- Fever of 38 C or more during labour (fevers in labour are usually treated with antibiotics regardless of GBS status)

3. NO SCREENING for GBS at 35 – 37 weeks pregnancy. Treat ONLY if risk factors present

Risk factors as outlined above

However;
- 25 – 30% of infants who develop early onset GBS disease are born to mothers without any maternal risk factors

Those who have the following risk factors are considered to be most at risk of having a baby with EO GBS disease and are advised to automatically proceed to treatment with antibiotics in labour

- Previous infant with EO GBS disease
- GBS bacteriuria this pregnancy (this indicates a more heavy colonization of GBS, increasing the risk of EO GBS for the newborn)

Probable Risk of Early Onset GBS Disease In the ABSENCE of Antibiotic Prophylaxis

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<tr>
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<th>Risk factors present</th>
<th>Risk factors absent</th>
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<tbody>
<tr>
<td>GBS positive (+)</td>
<td>1:25</td>
<td>1:200 - 700*</td>
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<tr>
<td>GBS negative (-)</td>
<td>1:1100</td>
<td>1:3200</td>
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*This varies with the literature

Giving antibiotics during labour to GBS + mothers (treatment option # 1 above) is approximately 80 – 86% effective in preventing Early Onset GBS infection in the newborn

Advantages to Treatment (ie; receiving antibiotics in labour)
- More likely prevention of GBS disease in the baby

Limitations to Treatment (ie: receiving antibiotics in labour)
- Any treatment to reduce the number of infected babies will mean giving antibiotics to large numbers of mothers and babies who don’t need them, and will miss some babies who really do need treatment
- Screening will not pick up all GBS positive carriers, some will be missed
• Treatment with antibiotics is approximately 80 – 86% effective in preventing Early Onset GBS infection in the newborn and will not always prevent infection or death. For example, this could happen if the infection was severe or present before labour started.
• Treatment does not prevent late onset GBS infection.
• The risk of severe allergic reaction to the antibiotics is approximately 1 in 10 000.
• The potential negative consequences of antibiotic use in labour on the newborn are unknown. The effect on a baby’s long term immunity and whether this affects allergy development is not known.
• Widespread antibiotic use does eventually contribute to the development of antibiotic resistant bacteria. This is a serious concern for our society as a whole.

References
• BCRCP (2003) Group B Streptococcus in the Perinatal Period Obstetrics Guideline 12
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