Group B Streptococcus (GBS)

Background

GBS is short for Group B Streptococcus, a kind of bacteria that lives in the human body with a 5 week life cycle. It is not a sexually transmitted disease. GBS can be classified as early (first week after birth) or late onset (between 1 week to 3 months of age). This information is only applicable to early onset GBS disease (EOGBSD). GBS is not normally harmful to adults. Approximately 10% - 35% of pregnant women will carry GBS in their birth canal at term. Though GBS does not harm most adults, it can rarely cause significant health issues for newborns if the bacteria enters their body. The standard medical care in Canada is to treat women who carry GBS in their birth canal with intravenous antibiotics when they are in labour in order to lower the chances of the baby getting an infection from GBS. Choosing to use or not to use antibiotics in labour is a decision that requires more information. Please read the following and discuss the information with your midwife until you feel adequately informed on this topic.

EOGBSD Statistics

The majority of infants exposed to GBS are unaffected but rarely some will develop a GBS infection. Without antibiotics during labour, 40%-50% of infants born to women with GBS will carry GBS on their skin but will not develop any illness. Of these infants, 1-2% will develop a GBS infection. Infants with GBS disease can become quite sick with: bacteria in the blood (bacteremia), meningitis, and/or pneumonia. Of the infants who have GBS disease 5-9% will die (most deaths are in preterm infants). Infants who recover from meningitis may have mild to severe long-term neurologic effects. The overall incidence of EOGBSD in babies born to mothers without treatment in the first week of life is 2/1000. The incidence of EOGBSD in babies born to mothers with treatment is 0.36/1000 live births.

"If we take an initial group of 50 000 women and assume 20% are colonized with GBS…

- 10 000 women will be GBS positive
- Without treatment:
    - 4000-5000 babies will be colonized with GBS (no infection, no issues)
    - 40-100 will develop EOGBSD
    - 1-2 term infants (babies older than 37 weeks gestation) will die due to EOGBSD from the initial group of 50 000 pregnant women
        - OR 1 in 25 000 to 1 in 50 000"

(Association of Ontario Midwives GBS app: Based on Clinical Practice Guideline: Group B Streptococcus: Prevention and management in labour)

Infants and EOGBSD

Infants who develop EOGBSD most often show signs and symptoms of the infection in the first 24 hours of life. These babies may have an elevated heart rate, trouble breathing, trouble feeding, and/or difficulties maintaining their temperature.

There are risk factors that make it more likely for your baby to get GBS disease:

- You are GBS positive in labour (this is the most important risk factor for GBS disease)

- You have GBS in your urine at any point in your pregnancy (this may indicate a heavier colonization of GBS in the mother)
- Preterm birth (less than 37 weeks gestation)
- Your baby has a low birthweight (<2500g; we often do not know this until after your baby is born)
- Your water is broken for 18 hours or more before you have your baby
- You get a fever in labour (>38 C) (this risk factor is actually a sign of infection in which case your labour would no longer be a low-risk scenario)
  NOTE: 30%-50% of cases of GBS infection occur in infants born to mothers without risk factors for GBS.

Maternal Screening for GBS

The standard practice in Canada is to test every pregnant woman for the presence of GBS in the vagina/rectum at 35-37 weeks. Your midwife will offer you this test at one of your prenatal visits, the swab is easily self-collected. The test is approximately 85%-93% accurate for 5 weeks, some women will have false negatives and a few will have false positives. Some women will choose not to do the swab, in which case GBS status will be unknown. Based on the test results a plan can be made.

GBS Prevention

Penicillin G is the antibiotic of choice for treating GBS in labour. It is given through an intravenous line (this can be done at home births) and is administered every 4 hours until delivery. Best results for eliminating GBS from the vagina are seen after the second dose of penicillin. If you are allergic to penicillin but are not anaphylactic cefazolin can be used. There are alternative antibiotics if you are anaphylactic to penicillin however, most paediatricians do not consider these alternative treatments as adequate prevention. If a pregnant person has had a baby with EOGBSD or has a urinary tract infection with GBS in the pregnancy, the recommendations are to treat with penicillin in labour regardless of a negative GBS swab.

Risks of Antibiotics

Antibiotics carry their own risks and the benefit of giving them should be weighed against these risks. Complications are rare but can include: anaphylactic reactions (estimated incidence 4-40/100,000), growing numbers of antibiotic resistant organisms, and the more common risk of developing a yeast infection (breast candidiasis and/or infant oral thrush). Research has been controversial in suggesting that childhood allergies and asthma may be linked to the use of antibiotics in labour.

Options for Treatment

There are several ways to handle GBS:

1.) Choose not to screen and not to treat regardless of risk factors. Watch the baby for signs of infection.

2.) Choose not to screen for GBS and only treat if risk factors present: preterm labour, broken waters >18 hours, having a fever in labour. 29% of women receive antibiotics with this approach and GBS disease is reduced by 39-53%. 1087 pregnant people would need to be treated with antibiotics in labour to prevent 1 case of EOGBSD. This is the approach recommend by the Royal College of Obstetricians and Gynaecologists in the United Kingdom.

3.) Screen for GBS and <u>if positive</u> treat according to the Canadian standard of care: antibiotics in labour and if your water breaks before labour or if you are in preterm labour. 31% of women receive antibiotics with this approach and GBS disease is reduced by 65%-86%. 1029 pregnant people would need to be treated with antibiotics in labour to prevent one case of EOGBSD. This is the approach recommended by the Society of Obstetricians and Gynaecologists of Canada.

4.) Screen for GBS and if positive treat if additional risk factors present in labour: preterm labour, broken waters before labour, having a fever in labour. 3.4%-6% of women receive antibiotics with this approach and GBS disease is reduced by 51%-75%. 6 pregnant people would need to be treated with antibiotics in labour to prevent one case EOGBSD. Less research has been focused on this approach.

Each of the above options is available to you. Whatever your choice, you should always be vigilant to watch your baby for signs of infection (even if you screen for GBS and your result is negative). With options 2 and 3 the number of women who are treated with antibiotics is similar.

Additional Info

There may be some natural treatments that can reduce the bacterial load and thereby reducing the chance of the baby developing GBS, however none of these methods have been studied effectively enough to determine how well they actually work. Feel free to discuss these individual treatments with your midwife.

Informed Consent

Each mother must weigh for herself the likelihood of GBS infection in her newborn, taking into account her individual risk factors. The decision is yours and you must decide what is right for you and your family. You need to be adequately informed of the risks that come with antibiotic use AND the risks associated with not following the recommended treatment. Please read and discuss this topic until you feel adequately informed to make a decision.

References

Association of Ontario Midwives (AOM). (2010). Group B streptococcus: prevention and management in labour. Retrieved from http://www.aom.on.ca/files/Health_Care_Professionals/Clinical_Practice_Guidelines?CPG_GBS_May_2012FINAL.pdf.

Canadian Pediatric Society (CPS). (2017). Management of term infants at increased risk for early onset bacterial sepsis. Retrieved from https://www.cps.ca/en/documents/position/management-infant-sepsis

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