

Info-parents

Prevention of group B Streptococcus Infection in Newborns

(updated april 2018)

Group B streptococcus (GBS) is a bacteria among others found in the gastro-intestinal system. This colonisation is usually benign, can be transitory and changing. It is estimated to be part of the normal vaginal flora of 10-10% of women. For them, GBS does not count as an infection. It does not cause any symptoms and does not require treatment. It is known that the presence of GBS in a urine test shows a strong maternal colonisation.

Risks related to GBS

In colonized mothers (10-30%), 50% of babies will be colonized. Out of these, 2 % will develop an infection in the first seven days of life. Late onset infections are rare. Thankfully, the large majority of newborns entering in contact with the bacteria at birth will not develop an infection.

Infections caused by GBS can be sudden and cause irreversible damage. They can manifest in various ways: pneumonia (12-19%), meningitis (11-14%), or as a generalized infection (71-74%). The mortality rate due to early onset neonatal GBS infection is between 5 and 9%. These days, we estimate the rate of GBS infection in Canada to be between **1 infected baby per 2000 to 3000 births**, or 0.36 to 0.5/1000.

GBS Prevention

In the last few years, numerous studies have been conducted in order to develop prevention strategies to protect newborns from GBS infection.

Three different approaches to lower the risk of neonatal GBS infection:

1- Universal screening

This approach is recommended by the Society of Obstetricians and Gynaecologists of Canada (SOGC), following more recent studies.

The screening is offered to all women between 35 and 37 weeks of pregnancy. It is done through a vaginal and anal swab. The sample is easy to obtain, does not require the use of a speculum, and can be done by the woman with a cotton swab (Q-Tip*). If the bacteria are present at this moment of pregnancy, there is a good chance it will still be active at the moment of birth. If more than 5 weeks go by between the testing and the birth, then it needs to be re-done.

We offer an intravenous antibiotic during active labour or after the membranes have ruptured to women carrying the bacteria. The goal of this treatment is to decrease the maternal colonisation and the risk of neonatal infection. Women who had a previous infected baby and those for whom the bacteria was present in their urine sample should also receive the antibiotic treatment at the moment of labour, no matter the result of the swab test, because of the increased risk of transmission and infection of the baby.

This method can lower by about 65-85% (1/7000) the risk of infection in newborns. With this approach, about 31% of women will receive antibiotics during labour.

2- Alternative option: screening according to risk factors

An approach based on risk factors represents an acceptable alternative since we know a certain number of conditions that augment the risk of infection in the baby.

With this approach, we estimate a decrease in the risk of newborn infection of 39% to 53% (1/3200) and about 29% of women receive antibiotics in labour. There is no prenatal screening; we are instead looking for risk factors and we give antibiotics to women even if they have only one.

There risk factors are:

- Having had a previous baby infected by GBS
- Presence of GBS bacteria in the urine during the current pregnancy
- Prenatal delivery (before 37 weeks)
- Prolonged rupture of the membranes (more than 18 hours)
- Fever in the mother during labour ($\geq 38^{\circ}\text{C}$)

Even though it does not appear in North-American recommendations anymore, this approach is recommended in Europe, where the GBS bacterium is not as present. In Canada, this approach is recommended in the absence of screening.

3- Alternative: Combined approach

This approach combines the universal screening and the risk factors. In this approach, prenatal screening is offered to all women between 35 and 37 weeks of gestation, and the antibiotic is also administered if there is a risk factor. With this approach, there is a theoretical reduction of 51-57% of newborn GBS infection, and of 3-6% women who receive antibiotics in labour.

It is important to mention that this approach is not mentioned in any official recommendation, but has been studied for the last few years by the OAM (Ontario Association of Midwives)

Preventive treatment

The administration of intravenous antibiotics every 4 to 8 hours once active labour has started or when the waters have broken is the recommended treatment. Since the administration of a dose only takes a few minutes, it is not necessary to remain connected to an I.V. between doses. There is only a small intravenous device remaining in place in the meantime. A delay of 4 hours between an antibiotic dose and birth is best for a maximum efficiency.

If the mother has not received the appropriate antibiotic therapy, the Canadian Society of Paediatrics recommends closer monitoring of the newborn in the presence of risk factors (including maternal colonization). Your midwife will explain to you the signs to watch for if this situation occurs.

Risks related to the antibiotic treatment

Some people can develop an allergic reaction to the antibiotics (itching, vomiting, coughing) or, more rarely, breathing difficulties and/or anaphylactic shock.

The use of antibiotics can disrupt the normal bacterial flora in the body and cause diarrhea and/or yeast infections in the mother (vaginitis) and in the baby (oral thrush). Moreover, massive antibiotic use augments the risks of developing antibiotic-resistant bacteria. For now, there are only rare occurrences of Penicillin-resistant GBS (Penicillin being the first choice of antibiotic), but almost 20% of GBS are resistant to Clindamycin (second choice of antibiotic).

Discuss these recommendations with your midwives and do not hesitate to ask questions.

References

- Prévention de l'infection néonatale à streptocoques du groupe B d'apparition précoce, directive clinique n°298, Société des Obstétriciens et gynécologues du Canada, octobre 2013
- Group B streptococcus Prevention and management in labor, Clinical Practice Guideline no 11, Association of Ontario Midwives, January 2010
- La prise en charge des nouveau-nés à terme à risque de sepsis bactérien d'apparition précoce, Document de principes, Comité d'études du fœtus et du nouveau-né de la Société Canadienne de Pédiatrie, janvier 2017