Group B streptococcus in newborn babies

What is group B streptococcus?
Group B streptococcus (GBS) is a relatively common normal bacteria in the bowel or vagina. It tends to be present intermittently for about 10 to 30% of women. Having GBS in your body is not considered to be an infection, it is called GBS carriage or colonisation. GBS can be passed on from a mother to her baby, by moving up the vagina and getting into the fluid around the baby after the waters break, or through contact as baby passes through the vagina at birth. Most babies are unaffected but a very small number become infected.

Early-onset GBS infection
If a baby develops GBS infection within seven days of birth, it is known as early-onset GBS infection (70% of babies who are affected have symptoms at birth, and 95% by 24 hours of age). The incidence of early-onset GBS infection in New Zealand is 0.5 per 1000 live births, or about 30 babies a year. Although it is rare, GBS infection is the most common cause of life-threatening infection in babies during the first week of life.

Signs of GBS infection include:
- being floppy or stiff and unresponsive
- poor feeding and/or vomiting
- difficulty breathing, or grunting
- high or low temperature
- fast or slow heart rates
- pale or blotchy skin
- irritability
- shrill/moaning cry or whimpering.

Late-onset GBS infection
Late-onset GBS infection develops seven or more days after a baby is born. These babies may be colonised at birth but probably become infected after birth. GBS infections after three months are extremely rare. (Antibiotics given in labour do not prevent late-onset infection.)

What complications can GBS infection cause?
GBS causes infection in the lungs (pneumonia), the blood (septicaemia), or the brain (meningitis) of babies. Babies can be seriously ill with this infection, and a small number die from it.

Most babies who become infected can be treated successfully with antibiotics and intensive care and will make a full recovery. However, even with the best medical care, one in 10 to 20 babies (5 to 10%) diagnosed with early-onset GBS infection will die. Most of the babies who die from GBS infection are born pre-term (before 37 weeks).

A small percentage of infected babies are affected permanently, with problems such as cerebral palsy, deafness, blindness, and serious learning difficulties.

Rarely, GBS can cause infection in the mother. For example, an infection in the womb or urinary tract, or more seriously in the blood, causes symptoms in the whole body (septicaemia).
Preventing early-onset GBS infection

The majority of GBS infection in newborn babies can be prevented by identifying mothers whose babies are at higher risk and managing their pregnancy and birth appropriately.

Known risk factors for GBS

- A previous baby affected by GBS infection.
- GBS urine infection in this pregnancy.
- High temperature (38°C or higher) during labour, or when your waters break (ruptured membranes).
- Pre-term labour (less than 37 weeks), with or without ruptured membranes.
- Prolonged rupture of membranes (18 hours or longer).
- Vaginal or rectal GBS carriage diagnosed and confirmed at 37 weeks in this pregnancy (see below for details).

If you are known to have risk factors for GBS, it is recommended that you are offered intravenous (IV) antibiotics in labour to reduce the chances of your baby developing the infection.

If you have any of these risk factors your maternity carer(s) will monitor the health of your newborn baby for at least 24 hours after birth.

Babies whose mothers do not have IV antibiotics during labour at all, or for at least four hours before the birth, require closer observation and four-hourly checks for the first 24 hours.

If you have any concerns about the wellbeing of your baby, notify the hospital staff if you are in hospital, or contact your LMC (lead maternity carer) if you are at home.

Are there tests for GBS?

GBS may sometimes be detected during pregnancy when other tests are taken, such as a swab from the vagina or a mid-stream urine sample (MSU).

As GBS comes and goes from the bowel and vagina, it is difficult to know if it will be present in your vagina at the time of your birth (which is how it can infect your baby). We know that swabs taken longer than five weeks before labour are unreliable.

If GBS is found on a swab any time before 37 weeks it is recommended that you have a repeat swab taken from your vagina and rectum at 37 weeks. You can take the swab yourself or the midwife or a doctor can do it.

This swab result should be used to inform the management options during your labour.

A swab result is accurate at the time it is taken, but as GBS comes and goes it may return between when the swab is taken and labour. A GBS swab which is taken close to the birth is the best test available.

Routine screening for GBS is not done in New Zealand (or the UK). A risk-factor based approach is used and recommended here.
What if GBS is found during pregnancy?
Having GBS in the vagina is relatively common and normal. We don’t know why some women have it and others don’t. It is not a sign of ill health or poor hygiene.
You should NOT be treated with antibiotics if you are found to have GBS carriage during pregnancy.
Urine infection caused by GBS should be treated with antibiotics during pregnancy.

When should I contact my LMC?
- If your waters break.
- If you are less than 37 weeks and you go into labour, whether or not your waters break.

What will my LMC do?
- Your LMC will assess you and your baby and discuss a plan of care.
- If you are less than 37 weeks, you will be offered antibiotics as your baby is pre-term.
- If you are 37 weeks or more and your waters break and you do not go into labour within the next 18 hours, it is recommended that you be offered induction of labour at this time, or as soon as practical and IV antibiotics at the start of the induction.
- If you are 37 weeks or more and your waters break and you go into labour, but you do not give birth within the next 18 hours, it is recommended that you are offered IV antibiotics from 18 hours after your waters break until your baby is born.

What will my treatment involve?
The antibiotics in this situation are given to you, but they are to try to prevent the GBS causing infection in your baby.
If you agree to have these antibiotics during labour, it is best to start them as soon as possible after your labour is established. You will be offered regular further doses until you give birth.
Generally it is recommended that women with GBS risk factors give birth in Christchurch Women’s Hospital. However, GBS risk factors do not necessarily mean you cannot birth in a primary unit (such as Burwood, Lincoln, Rangiora, or Ashburton), but discussions would need to take place between you, your LMC, and the primary unit manager, with all agreeing on a plan antenatally.
Penicillin is the most effective antibiotic for GBS. If you know you are allergic to penicillin, please tell your midwife/doctor, and you will be offered an appropriate alternative.

What might happen without treatment?
If your midwife or doctor recommends that you be given IV antibiotics because of GBS risk factors, and you choose not to have them, your baby may be at a higher risk of GBS infection.
If your baby has GBS infection and is not treated with antibiotics, he or she may become seriously ill or die.
Are there risks with antibiotics?
Some women have a mild allergy to certain antibiotics and may experience temporary side effects such as diarrhoea or nausea. Rarely, a woman may have a serious allergy (anaphylaxis) to certain antibiotics, which can be life-threatening. However, for most women antibiotics are safe. It is recommended that you discuss the benefits and risks of having antibiotics in labour with your midwife or doctor.

Antibiotics can cause thrush (candida) in women, mostly in their vagina. They can also cause thrush in babies, mostly in their mouth or on their bottom (nappy rash). Your LMC can help you treat this, if needed.

Breastfeeding
Breastfeeding is not affected by GBS carriage and is recommended. The antibiotics given in labour are safe for breastfeeding.

Caesarean sections
Planned caesareans are not recommended as a way to prevent GBS infection in babies. They pose their own risks for both mothers and babies and do not eliminate risk of GBS infection.

If you are having a planned caesarean for another reason then antibiotics are not recommended, as the risk of the baby developing GBS infection is very low.

Things to remember
- Many women carry GBS, but GBS infection in babies is rare.
- The majority of GBS infection in newborn babies can be prevented by women with GBS risk factors having IV antibiotics in labour.
- No treatment can be guaranteed to work all the time for everyone. Even with antibiotic treatment in labour, some babies will still develop GBS infection.
- Most GBS infection in newborn babies can be treated by giving babies IV antibiotics in a neonatal unit.
- You have a right to be fully informed about your health care and to make decisions about it. Your decisions will be respected.

Written by Christchurch Women’s Hospital Maternity Services. Endorsed by HealthInfo clinical advisers. August 2012.