Group B streptococcus during pregnancy: common questions and evidence-based answers for NCT practitioners

Many practitioners are asked about Group B Strep. This information is designed to be read alongside the information NCT has written for parents (last updated November 2012). It provides key points as well as further evidence-based information and references.

What is GBS?
Group B Streptococcus (GBS) is a normal bacterium for women to have in their gut and from there it can be passed to the vagina. Women who have GBS are described as GBS carriers. (This is the same as being ‘colonised’.)

What key points about GBS do I need to know?

- The vast majority of the time GBS causes no problems, but when invasive infection develops it can be life threatening.
- Around 2 in 10 pregnant women have GBS in the vagina or rectum.¹
- Around 3-4 in 10 babies born to women with GBS will be passed GBS bacteria.¹
- Fortunately, the overwhelming majority (around 99%) of those newborn babies who are colonised by GBS as they are born do not actually develop an infection from it.²
- Around 1% of babies colonised with GBS develop an infection and are treated with antibiotics.²
- Around half of these babies, 0.5% of babies colonised with GBS (or 1 in 200), will develop a serious infection, such as pneumonia, septicaemia or meningitis.²
- Another way of thinking about the chance of a serious GBS infection is to think about the risk for all babies, rather than for those babies who become colonised. Estimates suggest that around 1 in 2500 of all babies born get one of these serious infections.²
- Around 1 in 10 will die (and GBS may be the main cause in two-thirds or more of those deaths).³ Others have permanent impairment causing in disability.

These points are explained in more detail below. The numbers and sources from which the summary statistics have been calculated are provided.

What problems does GBS cause for pregnant women?
Babies who have invasive infections caused by GBS before 7 days of age (pneumonia, meningitis or septicaemia), called early onset GBS (or EOGBS for short) are thought to have been passed the bacteria during labour. As the summary statistics above show, most babies born to women with GBS in the vagina are not colonised with GBS. Of those newborns who are colonised, around 99% do not develop an infection from it. Invasive infection is rare, but it is life threatening when it does occur.

How likely is a pregnant woman and her baby to have problems related to GBS?
It has been estimated that 21% of women in labour carry GBS in their rectum and/or vagina.¹ In the UK in 2010, there were 748,480 live births in England, Wales and Northern Ireland.⁴ From these figures, we estimate that about 157,181 (0.21 of 748,480) women in labour carry GBS in their rectum and/or vagina each year.
A recent study in two city-based UK hospitals tested women in labour, or just before induction of labour, for GBS in the lower vagina or rectum and then tested the external ear canal of their babies for GBS as soon as possible after birth. The study found that 36% of babies born to women who tested positive plus 1% of babies born to women who tested negative were colonised.\(^1\) If this was typical of England, Wales and Northern Ireland in 2010, we can estimate that around 62,498 newborn babies \([0.36 \times 157,181] + [0.01 \times (748,480 - 157,181)]\) were colonised by GBS that year.

Fortunately, the overwhelming majority of these babies did not develop any problems. There were 302 reports to the Health Protection Agency (HPA) of babies who developed GBS bacteraemia at age 0-6 days in 2010 in England, Wales and Northern Ireland.\(^2\) From this, the incidence of EOGBS is estimated by the Health Protection Agency to be 0.41 per 1000 live births.\(^2\)

Using the number of reports to the HPA of babies with GBS bacteraemia (\(n=302\)) and our estimate of the number of babies who were colonised with GBS in the same year (\(n=62,498\)), we can estimate that the incidence of EOGBS for babies colonised with GBS is around 5 per 1000 babies or 0.5% (302 divided by 62,498). A recent study in two city-based UK hospitals found a higher incidence among babies whose mothers who were colonised with GBS during labour, although the small number of affected babies may mean that this estimate is unreliable: 3 of 276 babies (about 1%) born to colonised mothers got EOGBS (pneumonia, septicemia or meningitis).\(^1\)

**NB:** The discrepancy in these incidence rates (one would expect the incidence among babies born to colonised mothers to be less than the incidence among colonised babies) illustrates that estimates depend on the sources used and that estimates quoted by different organisations may be different because of the different sources used. The estimates given by NCT have been explained and referenced so as to be as transparent as possible.

One study found that the case fatality rate attributable to EOGBS was 6.3% (3 babies out of 48 with EOGBS).\(^3\) Two more babies with EOGBS died (5 out of 48 or 10.4% overall), but the additional deaths were attributed to other causes. If this was typical of England, Wales and Northern Ireland in 2010, it would suggest that about 31 deaths in England, Wales and Northern Ireland would occur in babies with EOGBS (10% of 302), although only about 19 would be attributable to the infection itself.

**Can stillbirths caused by GBS be reduced?**

There is no known means to identify and prevent stillbirths caused by GBS. Therefore, it is confusing when stillbirths caused by GBS are discussed alongside the arguments for and against screening for GBS during pregnancy to prevent early-onset GBS in babies.

**What is screening?**

Screening is the process of investigating apparently healthy individuals with the object of detecting unrecognised disease or its precursor so that appropriate steps can be taken to prevent or delay the onset of the disease or improve the prognosis if it is already present. In the UK, there is no screening programme for GBS during pregnancy, instead the focus is on prevention and treatment of early-onset infections in newborn babies (see below).\(^5\)

**What can be done to reduce the risk of GBS infection in babies?**

The National Institute of Clinical Excellence (NICE) has issued guidance on the prevention and treatment of early-onset infections in newborn babies.\(^6\) NICE has set three objectives:

- Prioritise the treatment of sick babies.
- Minimise the impact of managing infections on healthy women and babies. (In other words, try to ensure that the approach used for identifying and treating infections does not jeopardise the health and wellbeing of healthy women and babies.)
- Use antibiotics wisely to avoid the development of resistance to antibiotics.
Antibiotics given intravenously during labour (through a tube into a vein – or IV for short) can help to reduce the risk of a baby developing GBS. NICE guidance to the NHS identifies those women and babies who it is thought may benefit from IV antibiotics. The probable balance of risks and benefits is considered to favour use of IV antibiotics when past or recent colonisation is known about (often due to an infection), when the baby is arriving early and so may be more vulnerable, or when there is a delay between the membranes rupturing and the baby being born. The NICE guidance says that:

- IV antibiotics during labour should be offered to women where GBS has been identified incidentally (e.g. when testing for the cause of a urinary infection) in their vagina, rectum or urine in this pregnancy and to women who have previously had a baby with a neonatal GBS infection.
- IV antibiotics should be considered for two groups of women in pre-term labour (i.e. before 37 weeks): those whose waters broke before the labour started and those whose waters have been broken for more than 18 hours before birth.
- IV antibiotics should be prescribed if there is evidence of infection in the women, such as raised temperature.

The Royal College of Obstetricians and Gynaecologists has also issued guidance about preventing early-onset neonatal GBS disease. These are consistent with the NICE guidance. For example, they recommend that women who have a high temperature in labour (above 38°C) should be offered broad-spectrum antibiotics to prevent GBS infection.

The NICE guidance also supports the principle of families being able to make informed choices about aspects of care for mothers and babies. If parents need more information or want a particular form of care, they should be encouraged to talk to their midwife or doctor.

**Are there any risks to having antibiotics?**

Antibiotics are safe for most women, but (as with any drugs) antibiotics may present some risks. There are risks of having an allergic reaction to antibiotics (a one in 10 risk of a mild reaction to penicillin, and a one in 10,000 risk of a severe reaction). Some women may experience temporary side effects such as diarrhoea or nausea. However, for most women antibiotics are safe.

It is also thought that babies exposed to antibiotics very early in their lives may have a higher than usual risk of asthma and/or other allergies later in life. Having antibiotics intravenously through a vein during labour can also affect the mother’s mobility and where she can give birth.

**Why do other countries have screening programmes for GBS during pregnancy?**

Some other countries, such as the USA, have screening programmes and this can seem confusing. The decision to introduce the screening programme may have been taken on the basis of different criteria than those used in this country. The population being served by the screening programme may also be different from the population in the UK.
References


