The Lancefield group B beta-haemolytic streptococcus (also known as group B streptococcus (GBS) or Streptococcus agalactiae) has been recognised as the commonest cause of severe early-onset neonatal infection since the 1960s. A number of national guidelines have been produced to promote efforts to reduce the incidence of early-onset GBS (EOGBS) disease. These include a variety of strategies to identify antenatal and peripartum risk factors, ranging from a risk-based approach to universal antenatal screening for maternal GBS carriage. In addition, the use of maternal intrapartum antibiotic prophylaxis and the early recognition and treatment of neonatal infection have been advocated to reduce the morbidity and mortality associated with EOGBS disease.

The 2017 update of the 2012 guideline produced by the Royal College of Obstetricians and Gynaecologists (RCOG) for the prevention of EOGBS disease has added to previous recommendations and this article aims to highlight the significant additions that will impact on both antenatal and peripartum care.

New recommendations for the antenatal period

All pregnant women should be provided with appropriate information about GBS colonisation and the risk of neonatal infection during pregnancy and after delivery. This includes issuing pregnant women with the RCOG patient information leaflet “Group B streptococcus (GBS) infection in newborn babies. Information for you.”

Universal screening for GBS carriage is NOT recommended, and maternal request is not an indication for bacteriological testing. Universal screening is not recommended as the rates of maternal colonisation are high (20–40%), and screening cannot accurately predict which babies will go on to develop EOGBS disease. In addition, a proportion of neonates who develop severe GBS infections are born prematurely, before the recommended...
window for screening, and it is recognised that no screening test is entirely accurate. Finally, screening will result in an increased use of intrapartum antibiotic prophylaxis, raising potential concerns of adverse maternal and neonatal outcomes. These include anaphylaxis, increased medicalisation of labour and the neonatal period, colonisation infection with antibiotic-resistant organisms, and concerns about the potential long-term effects on the neonatal microbiome.

Clinicians should recognise maternal risk factors for early onset GBS.
These risk factors include:
- Previously having a EOGBS-affected baby
- GBS carriage during the current pregnancy, such as significant GBS bacteriuria (>10⁵ colony-forming units (cfu) per ml), or the detection of GBS on a vaginal swab, regardless of gestation
- Preterm birth (defined as onset of labour before 37 weeks gestation)
- Prolonged rupture of membranes
- Suspected maternal intrapartum infection, such as chorioamnionitis
- Intrapartum pyrexia.

It is recommended that women identified as having any risk factors for EOGBS should be offered intrapartum antibiotic prophylaxis.

Women identified as having been colonised with GBS during previous pregnancies should either be offered the options of intrapartum antibiotic prophylaxis, or bacteriological testing for GBS carriage in late pregnancy.

In order to reduce the need for unnecessary intrapartum antibiotic prophylaxis, bacteriological testing can be undertaken, ideally at 35–37 weeks of gestation, or three to five weeks prior to the anticipated delivery date, eg 32–34 weeks of gestation for women with twins. Women found to be colonised following enhanced testing should be offered intrapartum antibiotic prophylaxis.

When testing for GBS carriage, swabs from the lower vagina and anorectum are required; either a single swab (vagina then rectum) or two different swabs can be collected.

The swabs should be transported to the laboratory as soon as possible, but if there is an anticipated delay in processing then they should be refrigerated. It is important that swabs sent for the detection of GBS carriage are identified appropriately and differentiated from routine swabs for the investigation of vaginal discharge. Microbiology laboratories will undertake additional processing of the swabs for the detection of GBS carriage, including the use of enrichment culture medium. The usual turnaround times for these samples would be 48–72 hours.

Pregnant women found to have significant bacteriuria (>10⁵ cfu/ml) during the current pregnancy should receive appropriate antibiotic therapy, as well as intrapartum antibiotic prophylaxis. On the other hand, women found to be colonised with GBS on vaginal or rectal swabs do not need to receive antibiotic treatment other than intrapartum antibiotic prophylaxis.

New guidance for the peripartum period

New guidance is also included for the peripartum period, which may be more relevant to secondary care. First, the use of a birthing pool is not contraindicated for women known to be GBS carriers. Next, the method of induction should not vary according to GBS carrier status, and membrane sweeping is not contraindicated in GBS carriers.

Bacteriological testing by polymerase chain reaction (PCR) or other near-patient testing at the onset of labour is not recommended. Similarly, testing for GBS carriage is not recommended for women with preterm rupture of membranes.

As preterm labour is considered to increase the risk of EOGBS disease (estimated incidence of 2.3 per 1000 births compared with an overall incidence of 0.57 per 1000 births in 2015), and mortality rates from infection are increased (20–30% vs 2–3% at term), a new recommendation is that intrapartum antibiotic prophylaxis be given to women in confirmed preterm labour, regardless of known GBS status.

Of note, guidance on the antibiotic choice for women who have agreed to have intrapartum antibiotic prophylaxis has been updated. Group B streptococcus is considered susceptible to penicillins, so the first-line agent remains intravenous benzylpenicillin, which should be administered as soon as possible. If there is a history of a non-severe penicillin allergy then an injectable cephalosporin (eg cefuroxime) should be used. The new guidance recognises the relatively high rate of clindamycin resistance in GBS (up to 16%), and now recommends intravenous vancomycin for women who report a severe penicillin allergy.

Finally, it is recognised that a proportion of women identified as GBS carriers will decline intrapartum antibiotic prophylaxis. In this situation, it is recommended that the neonate should be monitored closely for 12 hours after birth, and the mother should be discouraged from seeking early discharge.

Conclusion
The authors of the updated RCOG guideline should be applauded for their efforts in continuing to highlight the importance of the recognition of risk factors for EOGBS disease to both patients and clinicians, and providing a framework for the improved antenatal and peripartum care of at-risk mothers and neonates.
One of the more contentious recommendations is the decision against universal screening. This decision is at variance with national guidelines and practices in other countries (for exam-
ple, the USA, Japan, Belgium, France and Germany) but is in line with the position taken by the UK National Screening Committee (NSC), although enhanced testing for GBS carriage is permitted for women known to be colonised during a previous pregnancy.

The other contentious issue is the recommendation to offer intrapartum antibiotic prophylaxis for all women in confirmed preterm labour. This will have a significant impact on the amount of antibiotics being prescribed. The rate of preterm labour in the UK is 8.2%, and the number of live births per year in the UK is estimated to be between 700,000 and 800,000, which could potentially equate to an additional 50,000+ courses of intrapartum antibiotic prophylaxis. This is concerning, because isolates of GBS with reduced susceptibility to penicillin, often combined with macrolide and fluoroquinolone resistance, have been recently described.

If universally implemented, it is anticipated that these guidelines will have a positive effect on reducing the incidence of EOGBS disease, although it should be recognised that these strategies are unlikely to completely eliminate neonatal GBS infections, in particular late-onset GBS disease. There is considerable hope that GBS vaccines, which are currently in development, will have a significant impact on early- and late-onset GBS disease in the future.

References

Declaration of interests
None to declare.

Dr Williams is head of bacteriology at Bristol Royal Infirmary