

## GROUP B STREPTOCOCCUS DISEASE

### Supporting Information

**This guideline and supporting information has been prepared with reference to the following:**

Hughes RG, Brocklehurst P, Heath P, et al. Prevention of early onset neonatal group B streptococcal disease. Guideline No. 36. London: Royal College of Obstetricians and Gynaecologists, 2003

**The following all increase the risk of neonatal early onset infection?**

- **GBS on vaginal swab in current pregnancy**
- **Fever  $\geq 38^{\circ}$  C during labour**
- **Prematurity  $<37$  weeks**
- **Rupture of membranes  $> 18$  hours**
- **Maternal vaginal discharge**
- **Preterm labour in previous pregnancy**
- **Previous infant with invasive GBS disease**
- **GBS bacteriuria in current pregnancy**
- **Twin with GBS disease**

A prospective case-control study in 62,786 live births (Oddie, 2002) quantified the following risk factors from 36 infants who developed GBS sepsis in the first week of life:

GBS isolated during pregnancy: OR 1.9 (95% CI 0.03-142.7)

Gestation  $<37$  weeks: OR 12.1 (95% CI 2.7-53.8)

PROM  $>18$  hours: OR 4.8 (95% CI 0.98-23.1)

Intrapartum fever: OR 10.1 (95% CI 1.7-60.7)

A literature review and reanalysis of previously published data (Benitz, 1999) gave the following ORs:

GBS-positive vaginal swab at delivery (OR 204), GBS-positive rectovaginal culture at 28 (OR 9.64) or 36 weeks gestation (OR 26.7), gestation  $<37$  weeks (OR 4.83), PROM  $>18$  hours (OR 7.28), intrapartum fever  $>37.5^{\circ}$  C (OR 4.05). The same study found that ORs could not be calculated for GBS bacteriuria during pregnancy or a twin with invasive GBS disease, but “these findings seem to be associated with a very high risk”.

Although 2 studies (Edwards, 1981; Pass, 1980) have identified twins as having increased risk, this finding has not been replicated elsewhere (Schuchat, 1994).

In a matched case-control study in 188 infants with early-onset sepsis (Schuchat, 2000), one of the maternal risk factors of fever, prematurity or PROM was found in 49% of GBS cases and 79% of other sepsis.

A prospective cohort study in 5,410 consecutively delivered patients from 4 hospitals (Towers, 1999) found that 455 (8.4%) had prematurity  $<37$  weeks, 421 (7.8%) had PROM  $>18$  hours and 378 (7.0%) had fever  $\geq 38^{\circ}$  C during labour. Overall, 1,071 women (19.8%) had  $\geq 1$  of the defined risk factors for GBS.

A prospective study in 569 pregnant women (Wood, 1981) found that 46 (8%) had bacteriuria, including 14 with GBS, which was the commonest organism after *e. coli*. Three instances of complications occurred: 2 intrauterine foetal deaths and 1 neonatal GBS sepsis. All 3 occurred in the maternal GBS group.

Although the majority of GBS carriers are asymptomatic, 2 cases have been described of vaginitis accompanied by discharge apparently caused by heavy colonisation with the virus (Honig, 1999). No information could be identified on whether the risk of neonatal transmission is increased.

It is currently unclear whether reports linking GBS to prematurity consider the infection directly responsible for preterm labour, to onset of membrane rupture before 37 weeks, or both (Heath, 2007).

Benitz WE, Gould JB, Druzin ML. Risk factors for early-onset group B streptococcal sepsis: estimation of odds ratios by critical literature review. *Pediatrics* 1999;103(6):e77

Edwards MS, Jackson CV, Baker CJ. Increased risk of group B streptococcal disease in twins. *JAMA* 1981;245:2044-6

Heath PT, Schuchat A. Perinatal group B streptococcal disease. *Best Pract Res Clin Obstet Gynaecol* 2007;21:411-24

Honig E, Mouton JW, Van der Meijden WI. Can group B streptococci cause symptomatic vaginitis? *Infect Dis Obstet Gynecol* 1999;7:206-9

Oddie S, Embleton ND. Risk factors for early onset neonatal group B streptococcal sepsis: case-control study. *BMJ* 2002;325:308-11

Pass MA, Khare S, Dillon HC. Twin pregnancies: incidence of group B streptococcal colonization and disease. *J Pediatr* 1980;97:635-7

Schuchat A, Zywicki SS, Dinsmoor MJ, et al. Risk factors and opportunities for prevention of early-onset neonatal sepsis: a multicenter case-control study. *Pediatrics* 2000;105:21-6

Schuchat A, Wenger JD. Epidemiology of group B streptococcal disease: risk factors, prevention strategies, and vaccine development. *Epidemiol Rev* 1994;16:374-402

Towers CV, Rumney PJ, Minkiewicz SF, et al. Incidence of intrapartum maternal risk factors for identifying neonates at risk for early-onset group B streptococcal sepsis: a prospective study. *Am J Obstet Gynecol* 1999;181:1197-202

Wood EG, Dillon HC. A prospective study of group B streptococcal bacteriuria in pregnancy. *Am J Obstet Gynecol* 1981;140:515-20

**Evidence Level: III**

**Last amended September 2007**