Intrapartum antibiotics for known maternal Group B streptococcal colonization

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RHL summary

Findings of the review: This review aimed to assess the effect of intrapartum antibiotics for maternal Group B haemolytic streptococci (GBS) colonization on mortality from any cause. Four 20-year-old trials (involving 852 women) of moderate quality were included. Three trials had compared ampicillin and one study had compared penicillin with no treatment. No placebo was used in any of the trials. There was no statistically significant effect of intrapartum antibiotics on the incidence of all-cause mortality, mortality from GBS infection or from infections caused by other than GBS, late onset of GBS infection, neonatal sepsis, neonatal meningitis, neonatal urinary tract infection or neonatal pneumonia due to infection other than GBS, as well as maternal sepsis in peri-/postpartum period. The incidence of early onset GBS infection was reduced with intrapartum antibiotics compared with no treatment (numbers needed to treat to benefit 25). One trial (352 women) comparing ampicillin and penicillin found no difference in maternal and neonatal outcomes.

Implementation: Based on the studies which include a number of shortcomings, intrapartum antibiotics reduce the rate of early onset GBS infection. The authors of the review stipulate that these findings should be treated with great caution owing to the high risk of bias and suggest that the issue should be studied in adequately sized double blind controlled trials. The authors mention that the opportunity to conduct such trials might have been lost because the guidelines recommending intrapartum antibiotics for GBS colonization have been introduced widely even though there is not enough evidence to support such a recommendation. However, studies on this topic may be feasible in developing countries where this practice has not yet been implemented.

Cochrane review


Abstract

Maternal colonization with group B streptococcus (GBS) during pregnancy increases the risk of neonatal infection by vertical transmission. Administration of intrapartum antibiotic prophylaxis (IAP) during labor has been associated with a reduction in early onset GBS disease (EOGBSD). However, treating all colonized
women during labor exposes a large number of women and infants to possible adverse effects without benefit.

To assess the effect of intrapartum antibiotics for maternal Group B haemolytic streptococci (GBS) colonization on mortality from any cause, from GBS infection and from organisms other than GBS.

We updated the search of the Cochrane Pregnancy and Childbirth Group's Trials Register on 11 March 2014. Randomized trials assessing the impact of maternal IAP on neonatal GBS infections were included. We independently assessed eligibility and quality of the studies. We did not identify any new trials from the updated search so the results remain unchanged as follows.

We included four trials involving 852 women.

Three trials (involving 500 women) evaluating the effects of IAP versus no treatment were included. The use of IAP did not significantly reduce the incidence of all cause mortality, mortality from GBS infection or from infections caused by bacteria other than GBS. The incidence of early GBS infection was reduced with IAP compared to no treatment (risk ratio (RR) 0.17, 95% confidence interval (CI) 0.04 to 0.74, three trials, 488 infants; risk difference -0.04, 95% CI -0.07 to -0.01; number needed to treat to benefit 25, 95% CI 14 to 100, I² 0%). The incidence of LOD or sepsis from organisms other than GBS and puerperal infection was not significantly different between groups.

One trial (involving 352 women) compared intrapartum ampicillin versus penicillin and reported no significant difference in neonatal or maternal outcomes.

We found a high risk of bias for one or more key domains in the study methodology and execution. Intrapartum antibiotic prophylaxis appeared to reduce EOGBSD, but this result may well be due to bias as we found a high risk of bias for one or more key domains in the study methodology and execution. There is lack of evidence from well designed and conducted trials to recommend IAP to reduce neonatal EOGBSD.

Ideally the effectiveness of IAP to reduce neonatal GBS infections should be studied in adequately sized double-blind controlled trials. The opportunity to conduct such trials has likely been lost, as practice guidelines (albeit without good evidence) have been introduced in many jurisdictions.

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