

# GBS accuracy and cost effectiveness of rapid diagnosis of Group-B streptococcus during labour

## Background

Group B streptococcus (GBS) is an infection that can be passed from mothers to their babies around the time of birth. In the UK around 1 in 10 women carry GBS in their vagina or rectum, and about 1 in 2000 babies are infected. Usually women have no symptoms, and don't know that they have GBS.

By giving intravenous antibiotics during labour to women with GBS, we can reduce the risk of the baby becoming seriously ill by up to 80%. Giving antibiotics to all women during labour is not a good idea, because antibiotics themselves can be harmful. Also, most mothers want their births to be as natural as possible. At present there is no reliable way to decide which mothers should have antibiotics. Standard tests for GBS take too long to be useful. This is especially true for women who go into labour early. It is these babies that are most at risk of GBS.

## What was the GBS study?

We undertook a test accuracy and acceptability research study that looked at intrapartum rapid testing for maternal GBS status. The rapid diagnostic tests we investigated were Polymerase Chain Reaction (PCR) and Optical Immune Assay (OIA). The aim was to assess whether these two tests allowed identification of women whose babies are at risk more quickly. We also asked women how they felt about being tested like this. Finally, we used information from this study and other studies to work out what the costs and benefits would be if testing was introduced for all women.

## What did the study find?

Neither rapid test was sufficiently accurate to recommend it for routine use in clinical practice and was not cost-effective. Overall levels of acceptability for rapid testing amongst participants were high, although predictably vaginal swabs were more acceptable than rectal swabs. Midwives were generally positive towards the idea of rapid testing in labour but had concerns that it might lead to overtreatment and unnecessary interference in births.

## What impact will this study have?

Unfortunately, neither of the rapid tests will be adopted by the NHS, as currently the evidence suggests that screening all pregnant women routinely would not be beneficial overall.

## Publications

- **Rapid testing for group B streptococcus during labour: a test accuracy study with evaluation of acceptability and cost-effectiveness.** (<http://www.ncbi.nlm.nih.gov/pubmed/19778493>) Daniels J, Gray J, Pattison H, Roberts T, Edwards E, Milner P, Spicer L, King E, Hills RK, Gray R, Buckley L, Magill L, Elliman N, Kaambwa B, Bryan S, Howard R, Thompson P, Khan KS. Health Technol Assess. 2009 Sep;13(42)
- **Intrapartum tests for group B streptococcus: accuracy and acceptability of screening.** (<http://www.ncbi.nlm.nih.gov/pubmed/21040389>) Daniels JP, Gray J, Pattison HM, Gray R, Hills RK, Khan KS; GBS Collaborative Group. BJOG. 2011 Jan;118(2):257-65. doi: 10.1111/j.1471-0528.2010.02725.x. Epub 2010 Oct 13
- **Cost-effectiveness of rapid tests and other existing strategies for screening and management of early-onset group B streptococcus during labour.** (<http://www.ncbi.nlm.nih.gov/pubmed/21078057>) Kaambwa B, Bryan S, Gray J, Milner P, Daniels J, Khan KS, Roberts TE. BJOG. 2010 Dec;117(13):1616-27. doi: 10.1111/j.1471-0528.2010.02752.x

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## For more information

**Preventing group B streptococcus (GBS) infection in newborn babies - information for you** (<http://www.rcog.org.uk/womens-health/clinical-guidance/preventing-group-b-streptococcus-gbs-infection-newborn-babies>)