



Title Prenatal Screening and Treatment Strategies to Prevent Group B Streptococcal and Other Bacterial Infections in Early Infancy: Cost Effectiveness and Expected Value of Information Analyses

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Aim

To determine the cost effectiveness of prenatal strategies for preventing group B streptococcus (GBS) and other serious bacterial infections in early infancy and to establish the expected value of further information.

Conclusions and results

Current best practice (treat only high-risk women) and universal testing by culture or polymerase chain reaction (PCR) were not cost-effective options. Immediate extension of current best practice to treat all preterm and high-risk term women (11% treated) would result in substantial net benefits. Currently, addition of culture testing for low-risk term women, while treating all preterm and high-risk term women, would be the cost-effective option (21% treated). If available in the future, vaccination combined with treating all preterm and high-risk term women with no testing for low-risk women, would probably be marginally more cost effective and would limit antibiotic exposure to 11% of women. However, the effectiveness of vaccination is uncertain and is based on expert opinion of vaccine efficacy. The value of information is highest (67 million pounds sterling [GBP]) if vaccination is included as an option.

Recommendations

Our results suggest that immediate extension of current practice to treat all preterm and high-risk term deliveries would be beneficial. Thereafter, it is not clear whether the optimal choice would be culture-based testing for low-risk women, or vaccination plus treatment of all preterm and high-risk term women. Vaccination is unlikely to be available for the next 5 years and could not be implemented without phase III trials. Research into vaccine efficacy, before deciding whether to adopt culture-based screening for low-risk women, or vaccination for all without screening, may be beneficial.

Methods

See Executive Summary link at www.ncchta.org/project/1473.asp.

Further research/reviews required

The expected value of information analyses indicated that spending on further research could be worthwhile and would provide maximum returns of up to GBP 27 million or GBP 67 million. Further research aimed at the realization of a GBS vaccine should be prioritized. Cost effectiveness of vaccine compared with other interventions should be re-evaluated after phase III trials. Policy makers should consider adoption of treatment for preterm and high-risk term women, and research into vaccine efficacy, before deciding whether to adopt culture-based screening for low-risk women, or vaccination for all without screening. Studies comparing culture with PCR testing or no intervention in the low-risk term groups (7, 11 and 12) might also be informative, but would need to be extremely large.