SCREENING BRIEF

Maternal screening to prevent neonatal Group B streptococcal disease

THE DISORDER

- Onset is rapid and may present as sepsis, meningitis or pneumonia
- Caused by Group B streptococcus (*Streptococcus agalactiae*), a normal commensal of the gastrointestinal tract and vagina and can be recovered from 10–30% of pregnant women[1]
- Most early-onset infection is acquired intrapartum
- Early-onset disease (in 1st week of life) accounts for about 70% of neonatal sepsis in developed countries without preventive treatment
- Late-onset disease (occurs after 1st week) due to either vertical transmission (50% of cases) or nosocomial spread from other infants or hospital staff.

PREVALENCE AND MORTALITY

- In Britain (where screening is not routinely conducted), about 8 cases per 10 000 livebirths[2]
- The disease causes about 60 deaths each year in Britain.

SCREENING TESTS

There are two major strategies to identify women who should be offered antibiotic prophylaxis:

(i) Risk-based screening for maternal risk factors (no microbiological cultures performed):[2]

- spontaneous preterm onset of labour (<37 weeks gestation) (relative risk 10^3)
- prolonged rupture of membranes (>18 hours) (relative risk 26^3)
- maternal fever (>37.5°c) (relative risk 10^3)
- previous affected baby.

(ii) Microbiological screening to identify carriers[2]

- all carriers are offered intrapartum treatment. There is no value in attempting to eradicate vaginal carriage during pregnancy.
- lower vaginal and rectal swabs from pregnant women at 35–37 weeks gestation
- swabs cultured in selective enrichment broth containing antibiotics.

INTRAPARTUM ANTIBIOTIC PROPHYLAXIS

- Intravenous penicillin G 3 g at onset of labour, then 1.5 g four hourly until delivery. For women allergic to penicillin, cefazolin, or clindamycin
- In controlled trials, antibiotic prophylaxis produced a 30-fold reduction in group B streptococcal infection in one meta-analysis,[4] a 10-fold reduction in another[5]
- Intrapartum antibiotic prophylaxis has no impact on late onset disease.[6]

EFFICACY

- **Risk based screening**—50–60% of cases prevented, 18% of all women in labour receive treatment[2 7 8]
- **Microbiological screening**—80–90% of cases prevented, 25% of all women in labour receive treatment[2]
- **A combined approach** (of all women positive on microbiological screening, treating only those with one or more of the above risk factors) is likely to reduce the proportion of all women in labour receiving treatment to about 5%,[2] but will prevent less than half of cases
- In USA screening and antibiotic prophylaxis is estimated to have prevented 3900 early-onset infections and 200 deaths in 1998, a reduction of 65%[6 9]
- A rapid near patient screening test to identify carriage of Group B Streptococcus in women at the time of delivery would be useful.

ASSESSMENT

- Screening is worthwhile
- Microbiological screening is the preferred approach because of its greater efficacy[10]
- Maternal screening to prevent neonatal group B streptococcal sepsis should be considered for all women as a routine part of antenatal care.[11 12]

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