Management of gonorrhoea and Chlamydia trachomatis infections in pregnancy

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Antibiotics are effective in the treatment of gonorrhoea and chlamydia in pregnancy, but before accepting the results of this review and deciding on which treatment regimen to follow, it would be essential for each country to determine the prevalence of penicillinase-producing Neisseria gonorrhoea.

RHL Commentary by Lumbiganon P

1. EVIDENCE SUMMARY

Gonococcal infection in pregnancy

Four antibiotic regimens, amoxycillin with probenecid, ceftriaxone, spectinomycin and cefixime for the treatment of gonorrhoea in pregnancy were evaluated in the two trials included in this review. All tested antibiotic regimens are very effective in the treatment of gonorrhoea as evaluated by the achievement of a 'microbiological cure'. Amoxycillin with probenecid appears to be less effective than the other three antibiotic regimens but the numbers included in all groups were relatively small to reach any conclusion. No other outcomes such as ophtalmia neonatorum or postpartum infection in mothers were reported.

Chlamydial infection in pregnancy

Erythromycin, a recommended antibiotic for the treatment of Chlamydia trachomatis in pregnancy has significant side-effects (mainly nausea and vomiting). Amoxycillin, azithromycin, clindamycin and erythromycin were evaluated in the eleven trials included in this review. Amoxycillin was surprisingly found to be even more effective than erythromycin in achieving 'microbiological cure', although this result was not statistically significant. Amoxycillin was better tolerated than erythromycin. Both azithromycin and clindamycin appear to be effective and better tolerated than erythromycin but the number of women in these trials was small.

All adequately controlled trials, which could be identified, have been included and appropriately analysed.

2. RELEVANCE TO UNDER-RESOURCED SETTINGS
2.1. Magnitude of the problem

Gonorrhoea used to be a very important health problem in many developing countries including Thailand. During the past decade of the AIDS (Acquired Immunodeficiency Syndrome) epidemic, during which a strong campaign for condom use have been conducted, the number of cases of gonorrhoea reported by the Ministry of Public Health in Thailand dropped from 31723 in 1993 to 20175 in 1994 and to 11457 in 1995. These figures are almost certainly lower than the real number of cases but they do indicate a significant decreasing trend. In a cervical swab culture study among 254 pregnant women who attended antenatal care at Srinagarind Hospital, Khon Kaen University, Thailand in 1995 we found no cases of positive culture for gonorrhoea. Moreover, over the last five years there have been only two or three cases of ophtalmia neonatorum per year in our hospital, which is a 700 bed referral hospital.

There are no surveillance data on genital Chlamydia trachomatis infection in pregnancy in Thailand. The prevalence of this condition in our hospital in the above-mentioned study in 1995 was 7%. (In this study ELISA [enzyme linked immuno-sorbent assay] antigen detection assay was used as the diagnostic test).

2.2. Feasibility of the intervention

Both ceftriaxone and spectinomycin are readily available in most hospitals in Thailand at a moderately expensive price of US$ 6-7 per dose. The Ministry of Public Health currently recommends both drugs for the treatment of gonorrhoea in pregnancy. Therefore, in Thailand treatment with both drugs is feasible at the primary health care level. Cefixime was approved in Thailand only recently and is not widely available. The cost per course of treatment is about US$ 7.

Amoxycillin is very cheap and readily available throughout Thailand. Azithromycin and clindamycin are not widely available and they are more expensive (US$ 11 and US$ 42 per course, respectively).

2.3. Applicability of the results of the Cochrane Review

Both studies for gonorrhoea were conducted in the United States where the prevalence of penicillinase producing Neisseria gonorrhoea (PPNG) may be lower than those of developing countries. The prevalence of PPNG in Thailand was over 30% in 1989 and has been stable at about 20% since 1991. The Ministry of Public Health in Thailand did therefore not recommend amoxycillin with probenecid for gonorrhoea treatment. It is essential for each country to know the prevalence of PPNG in their own country before accepting the results of this review and deciding on which treatment regimen to follow.

The applicability of the results regarding the treatment of Chlamydia infection is difficult to comment, because information about this condition in developing countries is very limited. Erythromycin is currently the main recommended treatment for Chlamydia trachomatis in pregnancy. Since amoxycillin was found to be equally if not more effective than erythromycin, it should be considered as an alternative for women who cannot tolerate the side-effects of erythromycin.

2.4. Implementation of the intervention

Perhaps the main problem in implementing the findings of this review is the issue of detecting pregnant women with gonorrhoea and/or Chlamydia trachomatis. Facilities for doing cervical or urethral swab culture are usually not available at the primary care level and the diagnostic performance of gram staining is questionable. Laboratory tests for Chlamydia infection are not available in most developing country settings.

2.5. Research
Amoxicillin with probenecid appears to be less effective than spectinomycin or ceftriaxone or cefixime for the treatment of gonorrhoea in pregnancy, although the numbers included were too small to show a significant difference. It may not be ethical to conduct trials comparing any antibiotic regimen with amoxicillin particularly in populations with high prevalence of PPNG. Since routine surveillance systems (at least in Thailand) indicate a decreasing magnitude of this problem, conducting research for identifying new antibiotics such as cefixime for treating gonorrhoea has to be weighed against the possibility of creating drug-resistant bacteria.

There should be more research on genital Chlamydia infection in pregnant women and their neonates in developing countries. These include epidemiological studies to assess the magnitude of the problem and to evaluate appropriate interventions to prevent adverse outcomes related to this infection. Of primary importance are neonatal infections such as conjunctivitis and pneumonia.

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