Antenatal lower genital tract infection screening and treatment programmes for preventing preterm delivery

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This review concludes that it may be possible to reduce preterm birth rate by screening for and treating asymptomatic lower genital tract infections in pregnant women. However, available data are not enough to recommend the use of this strategy as a routine practice, especially in under-resourced settings.

RHL Commentary by Novikova N

1. INTRODUCTION

Preterm birth is a major public health problem in modern obstetrics. Low-birth-weight infants born preterm often develop immediate complications and almost always require significant health-care resources in the long term. Such resources are limited in under-resourced settings. Therefore, any intervention leading to the prevention of preterm birth would be of great value especially in under-resourced settings.

Lower genital tract infections have been suggested as a cause of preterm birth. Hence, screening and treatment of such infections have been proposed as a preventive measure against preterm birth. Several studies have reported higher prevalence rates of infection-related preterm birth in American women of African origin compared with American women of white ethnicity (21% versus 5%, respectively) (1, 2); the higher preterm rates appear to be related to both an increased prevalence of lower genital tract infections and increased risk of preterm delivery of a low-birth-weight infant in the context of lower genital tract infection. Lower genital tract infections are also associated with poor socioeconomic status and immunodeficiency, which are more common in under-resourced settings compared with resource-rich settings. The objective of this review was to assess the effectiveness of antenatal lower genital tract infection screening and treatment programmes in reducing preterm birth and subsequent morbidity.

2. METHODS

The search strategy used by the authors to identify the studies was sound and comprehensive. All trials that were identified as potentially eligible were assessed for inclusion in the review. Trials that were not appropriately randomized were excluded. Data extraction and analysis are well done and presentation of the results is clear.

3. RESULTS

This review (3) includes a single randomized controlled trial (4) carried out in non-hospital-based antenatal clinics in and around Vienna, Austria. Asymptomatic women with pregnancies of between 15 and 20 weeks were screened for bacterial vaginosis, Trichomonas vaginalis and Candida species using Gram-stained vaginal smears. Obstetricians and women in the intervention group received the smear results and those who
were found to have pathological vaginal flora were treated with topical or oral antibacterial agents according to their respective smear results. The review authors found that preterm birth before 37 weeks was significantly lower in the intervention group compared with the control group (3% versus 5%, respectively) with a relative risk (RR) of 0.55 [95% confidence interval (CI) 0.41–0.75]. Also, compared with the control group, in the intervention group there were significantly fewer preterm births of low-birth-weight preterm infants (with weight less than 2500 g) and of very-low-birth-weight infants (with weight less than 1500 g) (RR 0.48; 95% CI 0.34–0.66; and RR 0.34, 95% CI 0.15–0.75, respectively). Hence, the review concludes that lower genital tract infection screening and treatment programmes in pregnant women 'may reduce preterm birth in a general population of pregnant women'.

The included trial (4) was of high quality, even though 3.2% of all randomized women in the trial were lost to follow up and the trial authors provided no information on whether the loss was evenly distributed between the two groups. Also, not blinding the participants and outcomes assessors could have introduced a bias in the provision of care between the intervention and control groups. However, in a subgroup analysis of women with abnormal vaginal flora, the rate of preterm births was 2.9% versus 7% in intervention and control groups, respectively.

4. DISCUSSION

4.1 APPLICABILITY OF THE RESULTS

The authors of this review conclude that it may be possible to reduce preterm birth rate by screening and treating asymptomatic lower genital tract infections in pregnant women. However, available data are not enough to recommend the use of this strategy as a routine practice. Also, based on available evidence, it is not yet established to what extent asymptomatic lower genital tract infection contributes to preterm birth.

Current data suggest that lower genital tract infections are very common among non-symptomatic pregnant women in developing countries (5). Early screening and treatment of lower genital infections is potentially feasible in under-resourced settings. Hence, if further studies show that early screening and treatment of lower genital infections in pregnant women is effective, this intervention has the potential to reduce preterm birth rates in developing countries.

4.2 IMPLEMENTATION OF THE INTERVENTION

The resources and expertise needed to screen pregnant women for asymptomatic lower genital tract infections with Gram-stained vaginal smears may not be available in all under-resourced settings. On the other hand, antibiotics are widely available in developing countries and it would be feasible to treat pregnant women with clinical symptoms of the lower genital tract infection in such settings.

4.3 IMPLICATIONS FOR RESEARCH

More studies, especially in developing countries, are needed to identify the pathogens in vaginal flora associated with preterm birth and the means of treating such infections. Also needed are more randomized controlled trials to evaluate the effectiveness of infection screening programmes in preventing preterm births at different gestational ages.

With regard to treatment of lower genital tract infections, further studies are needed to identify the most effective and safest routes of treatment? e.g. comparison of vaginal and oral routes of administration of antibacterial drugs.
The long-term impact of antibiotics use during pregnancy on infants should be studied further, especially in the light of a recent report of the adverse effect in the seven years follow-up of the Oracle II trial (6), which showed increased rates of cerebral palsy in children whose mother have used either erythromycin or co-amoxiclav to prevent preterm labour with intact membranes. Economic analysis (cost-effectiveness) of infection screening programme in pregnancy should also be researched.

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References


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