Trichomonas infection in pregnancy — does it affect perinatal outcome?

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Summary

Antenatal patients free of *Trichomonas vaginalis* vaginal infection were compared with infected patients, half of whom were treated and half left untreated. The treated group was given benzoylmetronidazole 50 ml (2 g metronidazole equivalent) as a single dose. The mode of treatment was found to be very palatable and highly effective. The birth weights and gestational age at delivery were similar in all three groups.

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Although *Trichomonas vaginalis* is a common vaginal pathogen in pregnancy, with rates as high as 65%,[1] there is still some uncertainty whether or not it has any significance apart from causing vaginitis in some patients. In 1980 it was stated that failure to treat severe *T. vaginalis* infection in the last two trimesters of pregnancy invited preterm delivery,[2] but Mason and Brown[3] found no association between the detection of *T. vaginalis* infection at the booking visit and the subsequent birth weight of the infant. The objectives of this study were to determine whether or not persistent *T. vaginalis* infections influence the outcome of pregnancy, and to evaluate a new oral preparation in the treatment of these infections.

Patients and methods

Patients attending an antenatal clinic of a midwife-operated maternity centre before 34 weeks' gestation, whose pregnancies were normal and who were expected to remain under the care of that clinic, were recruited into the study. Routine obstetric data were recorded and a coital history taken. *T. vaginalis* was sought via the following technique: a saline-moistened swab was inserted high in the vaginal vault and moved to and fro for 2-3 seconds. The swab was placed in 1 ml normal saline and the resulting suspension immediately examined under a microscope. Patients found to be infected were randomly divided into two groups. One group of infected patients was not treated, while the other was given benzoylmetronidazole 50 ml (2 g metronidazole equivalent) for immediate consumption and a further similar dose of the drug for their consorts. The women were asked to try and ensure that the medication was taken by their consorts and to refrain from coitus until the follow-up visit.

Treated patients were requested to return after 1 week, when they were questioned regarding the use of medication by the consort, side-effects and coital practice. Examination of a vaginal smear was repeated. All patients were then seen as for routine antenatal care except that a coital history was also taken and *T. vaginalis* infection checked for at each visit. Initially uninfected patients who subsequently became infected before 38 weeks' gestation were randomly divided into treatment and non-treatment groups, each of which was managed as previously described. Untreated patients who experienced symptoms were provided with symptomatic relief. The infants of these patients were examined at birth and as far as possible the gestional age worked out on the basis of the mother's last monthly period and the external characteristics of maturity of the infant. Patients in whom intra-uterine death had occurred, or with multiple pregnancy or pregnancy-induced hypertension were excluded from the analyses of birth weight and gestational age at birth.

Results

Of the 376 patients included in the study 110 were infected and treated, 115 were infected and not treated and 151 (40%) were not infected with *T. vaginalis*. Three hundred and forty-two patients were followed through to confinement.

Age, parity, maternal height and maternal weight at booking were similar in all three groups. The non-infected patients were significantly more likely to be married than were those found to be infected, but there was no significant difference in marital status between the two infected groups.

Of the 110 infected women treated, 8 failed to attend, 5 were still infected and 97 were free of infection at the first control visit; 77 patients remained free of infection for a minimum of 4 weeks. In 14 patients delivery or default prevented a 4-week follow-up, and 6 became re-infected during this control period. Eleven patients were re-treated and all except 1 responded satisfactorily. The one exception relapsed repeatedly and admitted that her consort had another sexual partner. Seventy-six women stated that their consorts had taken the treatment. There were five complaints of side-effects, all of a minor nature. The nausea, vomiting and abdominal pain sometimes associated with metronidazole, especially when taken in pregnancy, was not apparent.

Eighty-one (70%) of the 115 infected, untreated patients had booked at or before 30 weeks' gestation. Infection was persistent until delivery in 61 and intermittent in 30; a further 19 attended too irregularly for any conclusions about persistence of infection to be made, and 5 patients had been lost to follow-up.

The mean birth weights of the infants of the three groups are listed in Table I, and the mean gestational age at delivery in Table II. There are no significant differences between the groups. The percentage of infants of low birth weight was 12% in the infected, treated group, 11% in the infected, untreated group and 7% in the uninfected group. These differences are not statistically significant. The subgroup of infected patients with proven persistent infection gave birth to infants with a mean birth weight of 3,400 g and mean gestational age at delivery of 39,7 weeks, neither of these figures being significantly different from those found in the uninfected or treated groups. Despite the initial selection of low-risk patients, 27% (93) were ultimately referred to hospital, mostly as a result of problems in labour. The percentage referred was similar in each group.

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TABLE I. BIRTH WEIGHT

Group	No.	Mean birth weight (g)	SD
Infected and treated	**99**	**3 100**	**± 0,49**
Infected and not treated	**109**	**3 200**	**± 0,54**
Not infected	**134**	**3 230**	**± 0,48**
Total	**342***		

*34 exclusions because of default, multiple pregnancy, intra-uterine death or hypertension.

TABLE II. GESTATIONAL AGE AT DELIVERY

Group	No.	Mean (wks)	SD
Infected and treated	**91**	**39,5**	**± 1,5**
Infected and not treated	**109**	**39,8**	**± 1,3**
Not infected	**131**	**39,8**	**± 1,3**
Total	**331***		

*In addition to the exclusions listed in Table I, gestational age was not listed in 11 cases.

Discussion

A variety of organisms found in the vagina have been implicated in preterm labour or low birth weight. *Neisseria. gonorrhoeae* has been associated with rupture of membranes before the onset of labour and preterm delivery.[4] Braun *et al.*[5] found a positive correlation between maternal genital and urinary colonization with ureaplasmas at the first antenatal visit and subsequent low birth weight. More recently, Kass *et al.*[6] showed that the incidence of low birth weight was four times greater in the infants of women with a high rise in antibody titre for any genital mycoplasmas than in those of a control group. Herpes simplex virus infections are often associated with preterm labour,[7] and the mean duration of gestation is significantly shorter in women with antepartum chlamydial infection than in controls.[8]

There does not, however, appear to be much evidence for adding the protozoan *T. vaginalis* to this list. While a member of the same family, *T. fetus*, is a well-known cause of upper genital tract infection in bovines, the activity of *T. vaginalis* is restricted to the lower genital and lower urinary tracts. The finding of *T. vaginalis* in the fallopian tubes and peritoneal cavity has been reported,[9] but this was very unusual even before effective trichomonacides were available.[10] Severe *T. vaginalis* infections are associated with changes in the vaginal pH,[11] and may thus interfere with vaginal defence-mechanisms against other organisms; however, the data reported in this article substantiate the finding of Mason and Brown[3] that preterm labour and low birth weight are not complications of trichomonas infection in pregnancy, although the possibility that it is a causative factor in late abortion has not been excluded. Routine investigation of symptomless patients for *T. vaginalis* infections is therefore not necessary, and treatment is only required when the patient is symptomatic. When treatment is required benzoylmetronidazole appears to be an ideal drug as it has a high cure rate, few side-effects and is very palatable. Reports on treatment failures with metronidazole have appeared in the literature since 1962,[12] but cases of true drug resistance are very rare.[13,14] Metronidazole does enter the fetal circulation,[15] but two decades of clinical use have produced no evidence of fetal damage.

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