LETTERS TO THE EDITOR

Test of cure following treatment of genital *Chlamydia trachomatis* infection in male and female patients

Previous studies[1–3] have shown that a test of cure (TOC) following treatment of female patients with genital *Chlamydia trachomatis* was unnecessary providing the patient was compliant. To our knowledge no such data are available in male patients. Given that most TOC results are negative, selecting high risk patients for TOC has significant cost savings.

We report a retrospective study of 237 consecutive male and 294 consecutive female patients with uncomplicated genital *C trachomatis* who attended our department between January and December 1995. Of these, 192 (80·3%) males and 258 (87·7%) females had a TOC performed by enzyme immunoassay, 1 week after completion of treatment. Standard treatment for uncomplicated *C trachomatis* was doxycycline 100 mg twice daily for 7 days. No TOC was performed in 46 (19·2%) males and 39 (13·2%) females because they defaulted. A negative TOC was found in 188 (98%) males and 250 (96·8%) females. Positive TOC was found in only eight cases, five (1·9%) females and three (1·5%) males.

Analysis of TOC positive cases showed that three were due to poor compliance, three to reinfection (unprotected sexual intercourse with a infected partner or casual partner), and one to an inability to complete treatment because of nausea and vomiting. The remaining positive male patient had complied with the treatment, but the TOC was performed only 9 days after starting treatment. There was no evidence of urethritis on follow up and since this test was performed within 10 days of starting treatment this almost certainly represented a false positive result.[4]

Our results accord with previous studies and also show that data in male patients are similar to the results presented for females, with regard to incidence of positive TOC. After a recent audit our current practice is to see patients who have uncomplicated *C trachomatis* 10–14 days after starting treatment. This is based on a study comparing cultures with enzyme immunoassay for TOC.[4] An assessment is then made of compliance, possible treatment failure, and the possibility of reinfection having occurred, and TOC performed if indicated. Such a protocol should ensure that a TOC is appropriately used and is cost effective.[5] Preliminary data show that polymerase chain reaction (PCR) is more sensitive than cell culture in detection of *C trachomatis* as a TOC.[6] However, the timing of PCR following the start of treatment remains to be clarified owing to the prolonged detection of non-viable antigen.[6]

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Seroprevalence of hepatitis B markers among female and transsexual sex workers in Athens, Greece

Hepatitis B is considered to be a major public health problem encountered both in developing and in industrialised countries. Regular screening for hepatitis B virus (HBV) infection, particularly in high risk sexually transmitted disease (STD) groups, is important for the health surveillance of the whole community.[1]

Greece belongs to those with intermediate prevalence (1–2%) of hepatitis B surface antigen (HBsAg) in the general population.[2] Previous data have shown that prevalence of HBV is higher among female commercial sex workers than in the population at large.[3,4] Lately, transsexuals present a substantial part of the sex workers consisting an epidemiologically obscure population with regard to the seroprevalence of HBV markers. This is considered to be closely related to their lifestyle and sexual habits. However, in our region and elsewhere, there is a paucity of data regarding exposure to HBV in the male transsexual population especially in comparison with female sex workers. With this in mind, we attempted to determine the seroprevalence of hepatitis B markers in registered sex workers of the Greater Athens area and also to compare rates of exposure to the virus.

The study sample consisted of 230 female sex workers and 43 male to female transsexual sex workers of the Greater Athens area who attended the venereal diseases clinic of the Ministry of Health for periodic medical examination. Their age and length of time in sex work were ascertained from the special records of regular medical examination. The age range of the female sex workers was 21–63 (median 38) years, which was higher than that of the transsexual sex workers (median 34), range 24–48 years.

Blood samples were allowed to clot and the separated serum was stored at – 20°C. Screening for serology markers of hepatitis B (HBsAg, anti-HBs, anti-HBc, HBeAg, anti-HBe) was done by a third generation immunoassay (Auszyme monoclonal, Abbott Laboratories, Chicago, IL, USA). Differences between frequency rates were tested by χ^2 with Yates's correction and Fisher's exact test. The influence of age and years of sex work in the populations studied were comparatively analysed by the Maentel-Haenszel χ^2 procedure.

Stratified analysis did not reveal any significant difference between the two population groups as a function of sex, age, and years of registered sex work.

Overall, HBsAg was detected in nine (3·3%) of the 273 examined sex workers (table). In all these cases, anti-HBc was positive and anti-HBs negative. Also, HBeAg was not identified, while anti-HBe was found in all but two of the HBV carriers. Exposure to the virus was estimated by the presence of anti-HBc, irrespective of the presence of other serological markers. It was found that 52·7% of the sex workers have been infected with the virus and that within the previously infected sex workers who did not become carriers, the majority (89·6%) were positive for both anti-HBc and anti-HBs. Anti-HBc was detected more frequently among transsexual (65·1%) than among female (50·4%) sex workers, although the difference was not found to be statistically significant (χ^2, $p > 0·05$). Also, prevalence of anti-HBc was estimated among age groups in the two populations examined. The increase with age was not significant within the three age groups studied. The corresponding rates were 38·9% in the group less than 25 years old, 47·8% in the group aged 25–35, and 55·5% in those over 35 years old. Further analysis of the findings by years in sex work showed an increase of exposure rates to the virus after the first year of registered sex work. The overall exposure rates raised from 34·7% in the first year to 52·5% by the fifth year and to 57·1% when the duration of registered sex work was longer than 5 years. However, these differences were not statistically significant (χ^2, $p > 0·05$).

The prevalence of HBV markers among female sex workers and to a limited extent among male homosexuals has been studied in several countries worldwide. In these reports[5–8] sex workers have been characterised as a high risk group for the transmission of HBV in the general population although infection rates differed substantially (ranged from 29 to 66%) within studies. The results of this study confirm that sex workers are at a high risk for HBV infection, since 3·3% of them were HBsAg carriers and 52·7% had serological evidence of previous infection by HBV. HBeAg was not identified in any case supporting that HBsAg carriers have possibly low infectivity. However, these figures were lower from those reported previously among sex workers from the same area.[3,4] Kaklamani *et al*[3] have reported that of the female sex workers registered in Athens 11% were HBsAg carriers and 97% were infected. Nevertheless, it is likely that the overall prevalence trends of

Prevalence of hepatitis B serum markers among female and transsexual sex workers

	Female n (%)	*Transsexual n (%)*	*Overall n (%)*
HBsAg carriers	8 (3·5)	1 (2·3)	9 (3·3)
Anti-HBc with or without anti-HBs and anti-HBe	108 (47·0)	27 (62·8)	135 (49·5)
Only anti-HBs	5 (2·2)	3 (7·0)	8 (2·9)
All markers negative	109 (47·4)	12 (27·9)	121 (44·3)
Total	230	43	273

HBsAg in sex workers follows those of the general population where rates of HBsAg carriers have dropped from about 3–6% in the early 1980s[3 4] to 1–2% over the past years.[2] It seems that partial vaccination of the susceptible population along with safe sex practices over the past years have decreased exposure of sex workers to the virus in our region.

For reasons that are not entirely clear, most epidemiological research and control and prevention efforts of sexually transmitted HBV has focused mainly on homosexual men. However, in the present study it was shown that exposure of transsexual sex workers to HBV is not significantly more frequent when compared with female sex workers. Thus, the estimated as highly promiscuous sexual activity of transsexuals seems to not substantially increase their viral exposure. It is possible, that increase in the use of condoms due to an awareness of other STDs such as AIDS has lowered the incidence of hepatitis B in these individuals.

Additionally, infection rate of sex workers, was not found dependent on their age and years of legalised sex work. It is likely, that after their official registration, continuous health education encourage them to take safety precautions and therefore minimising exposure to the virus. In contrast, the practice of illegal sex work, which is usually for a time before registering as a sex worker, seems to contribute more in their HBV infection. It seems that screening sex workers for the presence of markers and vaccinating those who are negative would further restrain their exposure to the virus.

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Genital *Chlamydia trachomatis* infections in primary care

Ross *et al*[1] have highlighted the significant proportion of genital *Chlamydia trachomatis* infections which are diagnosed in general practice, and that only a minority of cases (13%) in their district were referred to a genitourinary medicine (GUM) clinic. In the same issue of the *BMJ*, a postal survey[2] revealed that only 30% of general practitioners in England and Wales would refer a woman with a chlamydial infection to a GUM clinic for contact tracing, follow up, and screening for co-infection. It is a matter of concern that of those GPs who would not refer, only 30% would prescribe an appropriate antibiotic treatment.

We have reviewed all genital chlamydial infections (diagnosed by enzyme linked immunosorbant assay and confirmed with direct immunofluorescence) in specimens received from hospital and community clinic settings by the Public Health Laboratory Service in Sheffield during the first half of 1996. Of the total of 308 cases with confirmed positive tests, 158 presented for initial screening at the GUM clinic. Of those presenting to other services, 37 were detected in obstetrics/gynaecology attenders, 34 in patients attending family planning clinics, 73 in patients attending GP surgeries, and six attenders of other services. By cross referencing patient identifiers from positive samples with the GUM clinic register, we found that 64 (90%) of 71 patients attending gynaecology/family planning clinics (where routine referral to GUM is long established) attended the GUM clinic for management of their infection. This demonstrates that routine GUM involvement in the management of chlamydial infection is both acceptable and achievable in Sheffield.

Moreover, of those patients diagnosed in general practice, 42 (58%) also attended GUM clinics either before or after treatment for further management. Overall, GUM clinics contributed wholly or in part to the management of 268 (87%) of all 308 chlamydia positive patients diagnosed in the city during the study period.

Improved community control of genital chlamydial infections[3] necessitates not only that diagnostic facilities are widely available, but also that there is close collaboration between GUM clinics and other sexual health services to ensure that comprehensive management is provided for all diagnosed cases. In Sheffield, considerable effort has been made to successfully establish these links. In other locations where such collaboration is not routine, we strongly advocate that general practitioners and other services which screen for chlamydial infections are educated to utilise GUM facilities for partner notification procedures. This will also allow improved epidemiological surveillance of this common sexually transmitted disease within a service which is renowned for maintenance of patient confidentiality.

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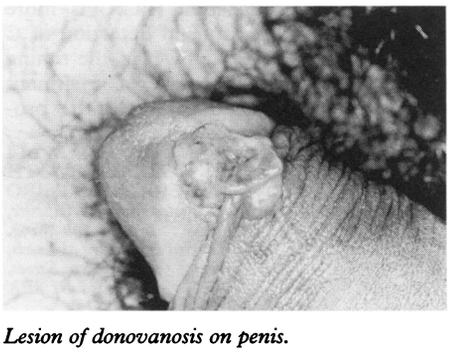
Failure of trimethoprim in the treatment of donovanosis

Antibiotics for the treatment of donovanosis include tetracyclines, chloramphenicol, co-trimoxazole, and ceftriaxone.[1 2] Co-trimoxazole has been used with considerable success.[3 4] In India and South Africa the favoured regimen is two tablets of co-trimoxazole twice daily for at least 10 days,[4 5] and good compliance and results with this dosage have been reported.[6] However, to date at least four cases of failure of co-trimoxazole in the treatment of donovanosis have been reported.[1 7]

Doctors in the UK have been urged to use trimethoprim alone rather than co-trimoxazole when there is no clear advantage with the latter.[8] This reflects concern about the serious toxicity associated with sulphonamide use, particularly Stevens-Johnson syndrome, blood dyscrasias, and hepatotoxicity.[8] When first introduced, the combination of sulphonamides and trimethoprim was shown in vitro to be synergistic, but studies have shown trimethoprim to be just as effective as co-trimoxazole in the treatment of chest and urinary tract infections. The use of the combination has not reduced the incidence of resistance to trimethoprim.[8] With the exception of two reports, sulphonamides have not been found to be useful in the treatment of donovanosis, other than as a component of co-trimoxazole[2]; with this in mind, it seems prudent to prescribe trimethoprim instead. We are not aware of any trials of the use of trimethoprim in the treatment of donovanosis. Here we describe failure of trimethoprim in treatment of a case of donovanosis.

Our patient, a Jamaican man, presented with a penile ulcer of 8 weeks' duration (fig). There was no dysuria or urethral discharge. He had had unprotected vaginal intercourse 3 months previously in Jamaica. Initial diagnostic tests were negative for chlamydia, gonorrhoea, and treponemes. Repeated dark ground microscopy examinations on 3 subsequent days were negative for spirochaetes, and culture for *Haemophilus ducreyi* was also negative. Our patient was treated initially with trimethoprim, 200 mg twice daily. After 3 weeks there was no improvement in the lesion. After repeated microscopic and serological screens for treponemal infection were negative, a biopsy was performed, which



Lesion of donovanosis on penis.