GENITOURINARY MEDICINE

Editorial

The diagnosis and treatment of urethritis in developing countries

Urethritis is one of the most common conditions seen among medical outpatients in many developing countries. Although accurate incidence figures are not available outside the industrialised world, in two African cities the incidence of gonorrhoea was estimated to be 3–10% per annum[1 2]; since approximately half the population in these cities was aged under 15 years, the incidence among adults is likely to be approximately twice this figure.

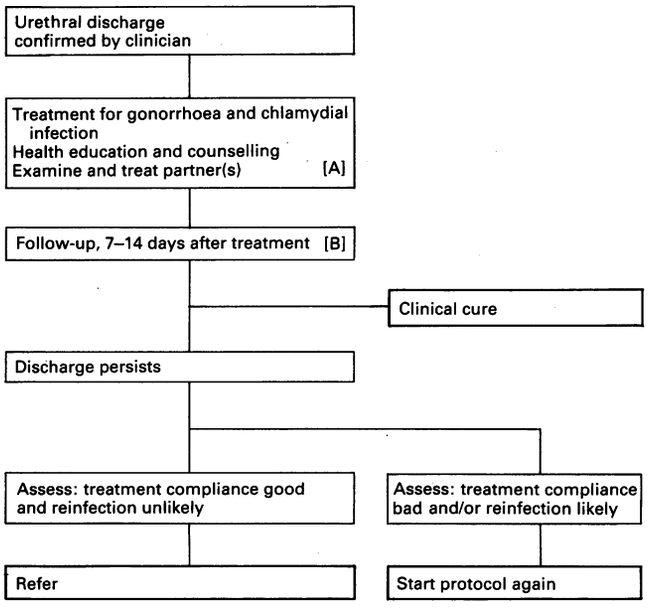
In developing countries the majority of cases of urethritis seen in the official health sector are due to *Neisseria gonorrhoeae*, which has been isolated from 53–80% of cases in various urban clinics in Africa in spite of the frequency of previous self-medication in clinic attenders. *Chlamydia trachomatis* was isolated from only 3–16% of these patients.[3] Tyndall *et al* in this issue (p3) report that they isolated *C trachomatis* from only 22 of 200 males (11%) attending an STD clinic in Nairobi, Kenya complaining of dysuria with or without a non-purulent urethral discharge; however, it is not clear that these patients all had urethritis. Since gonorrhoea and chlamydial infection appear equally prevalent in the general population, reflected in similar rates among antenatal clinic attenders, it is likely that many patients with chlamydial urethritis do not seek hospital treatment in developing countries.

In view of the high incidence of sexually transmitted diseases in developing countries, the World Health Organisation (WHO) has recommended that syndromic treatment should be provided at the primary health care level, where diagnostic laboratory facilities are limited or non-existent[4] (fig). Patients presenting with urethral discharge, and their contacts, should be treated for both gonorrhoea and chlamydial infection. If a Gram stain can be performed, gonorrhoea treatment can be reserved for patients in whom this diagnosis is confirmed. The additional expense of dual treatment is considered to be justified by its public health benefits. Many patients in developing countries will be unable to return for follow up, so management algorithms which rely on sequential treatment of patients with continuing signs or symptoms are doomed to failure.

Even when appropriate treatment is given to all patients presenting to the health service with urethral discharge and their contacts, STD control programmes may fail if there is a large pool of asymptomatic carriers of *N gonorrhoeae* and *C trachomatis*. A recent study in Tanzania used the leucocyte esterase (LE) test, a simple dipstick test on first voided urine, to screen for the presence of pyuria in males without urethral discharge in an attempt to measure the prevalence of asymptomatic infection. Among 151 general medical outpatients, 22 (15%) had a positive LE test, and had a urethral swab taken for gram stain and chlamydial antigen detection. Two were found to have gonorrhoea and five chlamydial infection, and a further five had non-specific urethritis. Thus the prevalence of gonorrhoea or chlamydial infection in this population was 7/151 (4·6%).[5] The most important role of diagnostic tests in developing countries may therefore be to identify asymptomatic individuals with urethritis, since those complaining of urethral discharge confirmed on examination should be treated syndromically.

Tyndall *et al* (p3) have used the LE test to screen for gonorrhoea and chlamydial infection among males attending an STD clinic in Nairobi with urethral symptoms (excluding those with a purulent discharge). They found it to have a sensitivity of 76%, specificity of 80%, positive predictive value of 42% and negative predictive value of 94%. They conclude that such screening can considerably reduce the amount of empirical antibiotic treatment given to this population.

Although most patients with urethritis can be successfully treated without laboratory investigations, the laboratory nevertheless has an essential role in national and



[A] Notification and treatment of female partners of men with urethritis are of the highest priority as one of the best ways of identifying women at high risk of having asymptomatic gonococcal and chlamydial infections.
[B] Patient may be advised to return only if symptoms persist.

WHO algorithm for the management of urethral discharge in the absence of laboratory support.

regional STD control programmes, both in monitoring regional sensitivity patterns of *N gonorrhoeae* and in evaluating the efficacy of currently recommended therapy. The WHO has recently established a global surveillance network for gonococcal antimicrobial susceptibility, whose aim is to enable the systematic collection of data in this rapidly changing field.[6]

As recently as 1980 it was reported that in Nairobi, Kenya, expected treatment failure rates for conventional doses of aqueous procaine penicillin and oral tetracycline against gonococcal urethritis were only 5·6% and 6·9% respectively.[7] By the mid 1980s penicillinase-producing strains of *N gonorrhoeae* (PPNG), first described in 1976, comprised 30–50% of isolates in many areas (3). Chromosomally mediated resistance to many of the cheaper antibiotics, such as tetracycline, cotrimoxazole and thiamphenicol, has also become prevalent in developing countries, and recently high level tetracycline resistance, coded for by the plasmid-borne tetM determinant originally found in the genus Streptococcus, was described in 10% of isolates in Kinshasa, Zaire.[8–11] Decreased sensitivity to the fluorinated quinolones norfloxacin and ofloxacin has recently been documented among gonococcal isolates in Rwanda.[12]

The implications of this rapid increase in antimicrobial resistance for the treatment of gonorrhoea in developing countries are very great, since it means that in many countries effective treatment is no longer affordable. Ciprofloxacin (500mg) in some countries costs the equivalent of the annual per capita health budget. Third generation cephalosporins, which can be used in pregnancy, are considerably more expensive.

Recent studies in the USA and in Kenya have shown that a single oral dose of cefixime 400mg is as effective as intramuscular ceftriaxone, curing 96% or more of uncomplicated cases of gonorrhoea in both men and women.[13,14] Although cefixime is not yet included on the WHO's list of essential drugs, the latest WHO recommendations for the treatment of uncomplicated gonorrhoea are *either* cefixime 400mg p.o. stat, *or* ceftriaxone 250 mg i.m. stat, *or* (in non-pregnant patients) ciprofloxacin 500mg p.o. stat. Cheaper alternatives, such as cotrimoxazole 480 mg tablets × 10 daily for three days, are recommended only in areas where they have recently been shown to be effective.[15]

The expert committee which drew up these recommendations argued that the cost of inadequate treatment, in terms of increasing antimicrobial resistance, complications and continued transmission, far outweighed the additional cost of effective single dose treatment. The challenge now is to persuade policy makers, ministries of health and international donors to find the additional funds required to buy these expensive drugs.

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