

Table 1 Minimum inhibitory concentration (MIC)

Serial No	Penicillin	Ciprofloxacin	Spectinomycin
1*	>10 µg/ml (resistant)	0.125 µg/ml (less sensitive)	16 µg/ml (sensitive)
2	0.64 µg/ml (less sensitive)	0.125 µg/ml (less sensitive)	16 µg/ml (sensitive)
3*	>10 µg/ml (resistant)	0.125 µg/ml (less sensitive)	16 µg/ml (sensitive)

*Contracted the infection in Thailand.

spectinomycin, all patients attended for at least one repeat smear and culture. In all tested cases repeat smear and cultures were negative. Of seven patients who defaulted for test of cure despite repeated recall letters, five were below the age of 19. The strains isolated in three patients were less sensitive to ciprofloxacin (see table 1). Of the three patients two had infection due to penicillinase producing *Neisseria gonorrhoeae* (PPNG) and they contracted the infection in Thailand. Two of these patients were treated with a single oral dose of 500 mg of ciprofloxacin and one patient was treated with 2 g of intramuscular spectinomycin and subsequently culture became negative.

The proportion of quinolone resistant *Neisseria gonorrhoeae* isolates is rising throughout the world and the levels of resistance in these isolates have risen substantially in recent years.⁴ In Britain, ciprofloxacin resistance is associated with imported cases especially from the Far East⁵ and high level resistance to ciprofloxacin has also been reported.⁶ However, treatment failure remains low especially if the infection is acquired within the United Kingdom.⁵ Moreover, it has been reported that failure rate of ciprofloxacin treatment is lower than the percentage of ciprofloxacin resistant isolates and therefore in vitro resistance to ciprofloxacin may not translate into clinical treatment failure.⁴

A single oral dose of 100 mg ciprofloxacin has been reported to be effective in eradicating uncomplicated urethral gonorrhoea in men.² In our study a single oral dose of 250 mg of ciprofloxacin was found to be effective for treating uncomplicated gonococcal urethritis and cervicitis. However, consideration may be given to a higher dose of ciprofloxacin or other alternatives when the infection may have been acquired in locations where resistant strains are endemic.

NELSON DAVID
GILLIAN WILDMAN
SASIKALA RAJAMANOHARAN
Department of GU Medicine,
Royal Berkshire Hospital,
Reading RG1 5AN, UK

Correspondence to: Dr Nelson David

- 1 Radcliffe K, Ahmed-Jushuf I, Cowan F, *et al* for the Clinical Effectiveness Group. UK national guidelines on sexually transmitted infections and closely related conditions. *Sex Transm Inf* 1999;75 (suppl):S13-15.
- 2 Shahmanesh M, Shukla SR, Phillips I, *et al*. Ciprofloxacin for treating urethral gonorrhoea in men. *Gonorrhoea* 1986;62:86-7.
- 3 Echols RM, Heyd A, O'Keefe BJ, *et al*. Single dose ciprofloxacin for the treatment of uncomplicated gonorrhoea: a world wide summary. *Sex Transm Dis* 1994;21:345-52.
- 4 Ng PPL, Chan RKW, Ling AE. Gonorrhoea treatment failure and ciprofloxacin resistance. *Int J STD AIDS* 1998;9:323-5.
- 5 Tayal SC, Sankar KN, Pattman RS, *et al*. *Neisseria gonorrhoea* in Newcastle upon Tyne 1995-1997: increase in ciprofloxacin resistance. *Int J STD AIDS* 1999;10:290-3.
- 6 O'Mahony C, Timmins D. Treatment failure using double dose ciprofloxacin in a case of highly resistant gonorrhoea. *Gonorrhoea* 1992;68:274-5.

Accepted for publication 12 September 2000

Investigation of the increased incidence of gonorrhoea diagnosed in GUM clinics in England, in 1994-6

EDITOR,—Hughes *et al*¹ recently presented an investigation of the increased incidence of gonorrhoea diagnosed in GUM clinics in England, in 1994-6 within which they have included the data from our clinic.

We reviewed the incidence of gonococcal infection diagnosed in the department of genitourinary medicine, Coventry Healthcare NHS Trust in 1994 and 1996, using the same criteria which had been applied in their study (see table 1).

Similar to Hughes *et al*, we found that the incidence of gonorrhoea had increased remarkably in 1996 compared with 1994 (48 cases in 1994 and 94 in 1996). Of the total number of patients, 49 had other acute STIs at the time of presentation including 37 of them with chlamydial infection; 13 patients were homosexual and four had infection in the oropharyngeal, rectal, or both sites; 39 patients had attended the clinic previously and eight of them suffered from gonococcal infection.

We found a completely different picture with respect to the incidence of penicillin resistance in the gonococcal isolates; while six patients (13.5%) were found to be penicillin resistant in 1994 only three (3.03%) were found to be penicillin resistant in 1996; four homosexual patients were found to be penicillin resistant and two of them had contacts who lived outside Coventry. We have been using penicillin as the first line of treatment for gonorrhoea for the past 20 years or more and the incidence of treatment failure in our area is very low. Accordingly, we believe that the causes of increased incidence of gonococcal infection in the Coventry area are not related to penicillin resistance.

Although most of the patients infected were white, 117 cases (82%), the incidence of gonococcal infection was disproportionately high in black ethnic group, 19 cases (13%); this group however contributed 1.9% of the population in Coventry. Six patients were of Asian origin and interestingly they were second generation Asians and five of them were male, single, of 20-25 age group, and having three or more sexual partners.

S DAS
P S ALLAN
A A H WADE

Table 1 Incidence of gonorrhoea in 1994 and 1996

Subjects	1994	1996
Cases	48	94
Male	34	65
Female	14	34
Heterosexuals	43	86
Homosexual	5	8
white	36	81
African/Caribbean	9	10
Asian	3	3
Penicillin resistance	6	3
Other STI	13	34
Chlamydia	10	27

GU/HIV/AIDS Medicine, Coventry Healthcare NHS Trust, Coventry and Warwickshire Hospital, Sney Stanton Road, Coventry CV1 4FH, UK

Correspondence to: Dr Das

- 1 Hughes G, Andrews N, Catchpole M, *et al*. Investigation of the increased incidence of gonorrhoea diagnosed in genitourinary medicine clinics in England, 1994-6. *Sex Transm Inf* 2000;76:18-24.

Accepted for publication 12 October 2000

Perceptions of disease and therapy are factors influencing adherence to antiretroviral therapy

EDITOR,—HIV infection is now considered a chronic condition. Patients will have to learn to live with the disease for their life. Therefore, the management of psychological aspects, besides clinical ones, is becoming increasingly important. In most cases the infection can be controlled by effective but complex treatments. On the other hand, people living with HIV face everyday problems related to the disease, the therapy, and a persisting social stigma which inevitably influences their behaviour. Based on this, the patients' perceptions of disease and therapy may be important in adherence of patients to treatment,¹ which is now an important aspect in HIV care.^{2,3} The study, "Compliance in HIV" has analysed the role of these factors on adherence to therapy.

This is a multicentre observational study focused on evaluating the level of adherence to anti-HIV therapies conducted in Italy. Eligible for the study were HIV+ patients, aged >18 years using combination therapy (bi- and tri-combination therapy) identified in randomly selected days during June 1998 at five outpatient clinics (Milan, Brescia, Florence, Rome, and Naples). Patients were asked to read and sign the informed consent form. They were interviewed by trained psychologists. The questionnaire includes information on general characteristics, clinical conditions, therapy, adherence to therapy, expectation, personal relationship, and perceptions of life, the future, disease, and therapy. In particular, patients were asked to indicate how they perceive HIV disease (among the following adjectives: enslaving, cruel, threatening, invasive, constructive) and the therapy (among the following adjectives: protective, reliable, allied, exigent, enslaving). Each subject could indicate more than one adjective. Less than 5% of eligible subjects refused the interview. Adherence was measured as the number of errors made in the previous week and the past 2 months. Errors made in the previous week were indicated first and then errors made in the previous 2 months in order to help patients to recall less recent events. The kinds of errors investigated included: missing doses of one specific drug, interrupting the entire combination, altering time schedule, wrong association with food, wrong association of drugs, wrong count of pills. Adherence to treatments was defined as follows: high: less than 2 errors; medium: 3-4; low: 5 or more during the 2 months before interview.

In all, 214 HIV infected subjects were enrolled: 63.6% were males and 36.4% females. The age distribution was <24 years 3.8%; 25-34 years 43.4%; 35-44 years 37.4%; 45 years 15.4%. The average time from HIV diagnosis was 6.8 years; 61.2% of respondents reported having HIV related symptoms (currently or in the past). Combination therapies most used were: stavudine, lamivudine, in-

Table 1 Perception of disease and treatment and adherence level

	Adherence level			p Value*
	High (n=84)	Medium (n=55)	Low (n=75)	
Perception of disease (No (%))				
Enslaving	30 (35.7)	21 (38.2)	20 (26.7)	0.3
Cruel	26 (31.0)	14 (25.4)	23 (30.7)	0.7
Threatening	23 (27.4)	17 (30.9)	22 (29.3)	0.9
Invasive	24 (28.6)	13 (23.6)	20 (26.7)	0.8
Constructive	12 (14.3)	7 (12.7)	17 (22.7)	0.23
Perception of therapy (No (%))				
Protective	42 (50.0)	21 (38.2)	25 (33.3)	0.09
Reliable	37 (44.1)	28 (50.9)	20 (26.7)	0.01
Allied	31 (36.9)	23 (41.8)	28 (37.3)	0.82
Exigent	25 (29.8)	18 (32.7)	29 (38.7)	0.49
Enslaving	17 (20.2)	14 (25.4)	29 (38.7)	0.03

* χ^2 adjusted for age, sex, and clinical status (symptomatic and asymptomatic).

danavir (25.2%)/zidovudine, lamivudine, indinavir (10.7%)/stavudine, lamivudine (8.4%)/stavudine, lamivudine, saquinavir (7.0%)/zidovudine, lamivudine (6.5%)/zidovudine, lamivudine, saquinavir (6.0%).

Most respondents perceive HIV disease as enslaving (33.2%), cruel (29.4%), and threatening (29%). Among the respondents' choices, the connotation "constructive" was indicated by 36 subjects (16.8%). With regard to the perception of therapy, most patients perceived therapy as protective (88 subjects).

Table 1 shows adherence level according to perception of disease and therapy.

The perception of disease was not associated with adherence level. However, the perception of therapy as protective or reliable was associated with higher levels of adherence, and the perception of therapy as enslaving with lower ones. These findings were confirmed after taking into account potential confounding factors (including sex, age, and clinical status) and, in particular, the perception of therapy was an independent factor of adherence in strata of different perception of the disease (data not shown).

In conclusion, the patients' attitudes toward therapy emerge as important in ensuring high adherence levels. As correct adherence to treatment is a necessary condition in order to obtain therapy efficacy, these findings suggest it would be useful to consider perception of therapy by the doctor in patients' management.

We thank the patients for their participation; A Gazzani for data analysis assistance, directors of Infectious Diseases Clinics where we recruited our patients and their collaborators: Drs A Cargnel,* P Riva,* F Mazzotta,† M Di Pietro,† G Carosi,‡ S D'Elia,§ F Paoletti,§ P Filippini,¶ C Scolaro,¶ (*Osp Sacco, Milan; †Osp SM Annunziata, Florence; ‡University of Brescia; §University 'Sapienza', Rome; ¶Osp "Gesù e Maria", University of Naples.)

We also thank E Recchia, research assistance, LILA (Italian League for the fight against AIDS, National Research Center, Milan).

This study was partially granted by the Italian minister of health.

M MARTINI

P NASTA

LILA Lega Italiana per la Lotta contro l'AIDS
(Italian League for the fight against AIDS), National
Research Centre, Milan, Italy

E RICCI

F PARAZZINI

Istituto di Ricerche Farmacologiche, "Mario Negri",
Milan, Italy

V AGNOLETTA

LILA Lega Italiana per la Lotta contro l'AIDS,
Via Rogoredo, 41, 20138, Milan, Italy

Correspondence to: Dr V Agnoletto

1 Chesney MA, Morin M, Sherr L. Adherence to HIV combination therapy. *Soc Sci Med* 2000;50:1599-605.

- 2 Broers B, Morabia A, Hirshel B. A cohort study of drug users compliance with zidovudine treatment. *Arch Intern Med* 1994;154:1121-7.
- 3 Mehta S, Moore RD, Graham NMH. Potential factors affecting adherence with HIV therapy. *AIDS* 1997;11:1665-70.

Accepted for publication 12 October 2000

The power of information and contraceptive choice in a family planning setting in Mexico

EDITOR,—In the article by Lazcano Ponce *et al.*,¹ the proportion of women receiving IUDs fell in the intervention arm. As the authors state, most methods of contraception do not protect against STI acquisition. Most of the women choosing not to use IUDs in this trial probably selected oral contraceptives, another non-barrier method. These women, too, would be unprotected against STI, so the benefit of this intervention is unclear. In addition, most other methods of contraception have higher pregnancy failure rates than IUDs; thus, women deterred from IUDs in this trial may have had more unplanned pregnancies, with their attendant risks and cost, as a result of the intervention.

Fully informed choice for all family planning clients is an estimable standard of care. But the authors' unstated assumption seems to be that too many women at risk of STI receive IUDs for family planning.¹ While IUDs cause a transient increase in the risk of pelvic inflammatory disease, they have no documented adverse effect on STI acquisition or ascent thereafter.² IUDs offer safe, effective, affordable long term contraception. Given the low prevalence of cervical infection among family planning clinic attenders in this trial¹ and others, we need guidelines to "rule in" the great majority of women who are uninfected, rather than inappropriately label large numbers of women ineligible for IUD use.

PAUL FELDBLUM

Family Health International, Clinical Research
Department, PO Box 13950, Research Triangle Park,
NC 27709, USA

- 1 Lazcano Ponce EC, Sloan NL, Winikoff B, *et al.* The power of information and contraceptive choice in a family planning setting in Mexico. *Sex Transm Inf* 2000;76:277-81.
- 2 Grimes DA. Intrauterine device and upper-genital-tract infection. *Lancet* 2000;356:1013-19.

Accepted for publication 12 October 2000

AIDS and globalisation

EDITOR,—I commend Shamanesh *et al.*¹ for their searching and informed account of the impact of globalisation on the world AIDS

problem. Revisiting Alma Ata 1978: the existence of gross inequalities between advantaged and disadvantaged peoples is "politically, socially and economically" unacceptable. Twenty two years on, are we closer to the ideal of "health for all" or further away. When will we learn?

MIKE GRIFFITHS

SHO Public Health/Non-Principal GP,
West Midlands, UK

michael.griffiths@dudley-ha.wmids.nhs.uk

- 1 Shahmanesh M, Shahmanesh M, Shahmanesh R. AIDS and globalisation. *Sex Transm Inf* 2000;76:154-5.

WSW status needs further definition

EDITOR,—Fether *et al.* present a very interesting case-control study on STIs in women who have sex with women (WSW).¹ This was not a community based sample and thus prone to selection bias. In order to appreciate the results in full it would help to know how cases and controls were identified and how controls were selected. Bisexual or homosexual orientation may be difficult to disclose even in a sympathetic and non-judgmental setting. Studies using self reported sexual orientation to determine case or control status will always have a degree of differential misclassification. It is likely that WSW who volunteer this information differ not only from women who do not have sex with women but also from WSW who do not volunteer the information but admit it when prompted, and from those who do not admit it even when prompted. Without this information it is difficult to determine the importance of various prevalences quoted in the paper. All I learn from this paper at present is that women who have sex with women also take other risks.

RUDIGER PITTRUF

St George's Hospital, London, UK

rudiger_pittrof@hotmail.com

- 1 Fethers K, Marks C, Mindel A, *et al.* Sexually transmitted infections and risk behaviours in women who have sex with women. *Sex Transm Inf* 2000;76:345-9.

BOOK REVIEWS

A Physician's Guide to Clinical Forensic Medicine. Ed Margaret M Stark. Pp 326; \$79.95. Totowa: Humana Press, 2000. ISBN 0-896-03742-8.

Forensic examination of those alleging sexual assault can be appropriately provided within sexual health services, but requires additional skills. The examinations are lengthy, detailed, frequently nocturnal, and often lead to an appearance at the Old Bailey. A distressed individual will need to be examined from head to toe, with every injury described, measured, and drawn. The correct samples must be taken, timed, labelled and bagged with due attention to the chain of evidence. Subsequently the doctor may need to interpret the findings for the police, write a detailed statement, and withstand the adversarial setting of the court.

A Physician's Guide to Clinical Forensic Medicine covers areas relevant to general forensic