

## MEDICAL PRACTICE

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*Clinical Topics*

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**Human immunodeficiency virus infection, hepatitis B virus infection, and sexual behaviour of women attending a genitourinary medicine clinic**

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**Abstract**

During the six months immediately after a public information campaign about the acquired immune deficiency syndrome 1115 women who attended a genitourinary medicine clinic in west London were tested for antibodies to the human immunodeficiency virus (HIV). Three women (0.27%) were positive, and all three were regular sexual partners of men with high risk lifestyles—two intravenous drug users and one bisexual. A consecutive series of 647 women from the cohort was tested for antibodies for hepatitis B core antigen: 27 were positive, of whom six had been born in the United Kingdom and were not known to have been at risk. The two women who were seropositive for HIV who completed a questionnaire on their sexual behaviour before they were tested reported both anal and oral receipt of semen and were in the upper fifth percentile for lifetime sexual partners. More than half (53%) of 424 women who reported that they had non-regular sexual partners never used a condom.

It is concluded that heterosexual women in London are at a low risk of becoming infected with HIV.

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**Introduction**

The emergence of the acquired immune deficiency syndrome (AIDS) in Western countries has shown that human immunodeficiency virus (HIV) infection and its consequences are largely confined to people who practise certain lifestyles. These people fall into relatively self contained groups, of which by far the largest is homosexual men. Great concern, however, has been expressed that HIV infection might spread through heterosexual contacts from these groups into the general community, and it would be important to detect such spread early. The spread of AIDS among heterosexuals is likely to appear first in women who are partners of bisexual men and in localities where the prevalence of HIV infection in homosexual men is highest. Hepatitis B infection affects the same groups as HIV infection and parallels the epidemiology of HIV infection closely.<sup>1</sup> Hepatitis B, however, has been prevalent for much longer and is more infectious than HIV so that it might be used to herald the risk of HIV infection.<sup>2</sup>

We therefore decided to screen for sexual behaviour and for antibodies to HIV and hepatitis B in a cohort of women who attended a clinic for sexually transmitted diseases which is in an area of London where homosexual men have a high prevalence of both infections.

**Methods**

Consecutive new women patients who attended the department of genitourinary medicine at West London Hospital between 3 February and 6 July 1987 were asked to answer a questionnaire on sexual behaviour that was identical with one used in a study in 1982.<sup>3</sup> For the present study a question about whether condoms were used with regular and non-regular partners was added.

Patients had the opportunity to ask for HIV antibody tests, but, in addition, blood samples that were routinely taken for syphilis testing were

screened for HIV and hepatitis B infection independently of and separately from the clinical records. The protocol ensured that in the event that the screening test result was positive for HIV antibodies the patient would not be informed of the result but would be offered a diagnostic test carried out with counselling and after consent was obtained. This design ensured that patients suffered no adverse effects from the study.

Sera were tested for antibodies to HIV by COMPRIA, a competitive radioimmunoassay test that has previously been found to be sensitive.<sup>4</sup> (During this investigation COMPRIA was also used to test 1207 specimens that had been confirmed as positive for HIV by other assays, and COMPRIA gave 1197 positive and 10 equivocal results, unpublished results.) Sera were tested for antibody to hepatitis B core antigen by a similar competitive assay. Almost all carriers of hepatitis B surface antigen and most patients with markers of past hepatitis B infection—for example, antibodies to hepatitis B surface antigen—also have antibodies to hepatitis B core antigen by this assay.<sup>5,6</sup>

Data were analysed by SPSS software on the Amdahl computer at the University of London Computer Centre. The  $\chi^2$  test was used for statistical analyses.

## Results

### ANTIBODY TESTING

During the study 1115 women attended the clinic for the first time: 207 (18.6%) requested the HIV antibody test, and two of the women were positive. The regular partner of one was an intravenous drug user and the partner of the other a bisexual man. Screening tests on all 1115 women showed a further patient with antibodies to HIV. She was counselled, and the fact that her regular sexual partner had been an intravenous drug user came to light. She, however, declined to be tested and therefore remained unaware that she was positive for HIV.

Of serum samples from 647 consecutive patients tested for antibodies to hepatitis B core antigen, 27 (4.2%) were positive. This included one of two patients who also had antibodies to HIV. The third patient with antibodies to HIV fell outside the series tested for hepatitis B core antigen. Of the 27 who were positive, 17 were born outside the United Kingdom, another three had a history of drug abuse—either themselves or a sexual partner—and one had been a homosexual man. The prevalence among women patients born in the UK who were not in these risk groups was therefore 0.9%. In our study overall, 840 (75.3%) patients had been born in the UK.

### SEXUAL BEHAVIOUR

The study questionnaire was fully answered by 1079 patients; 33 patients refused to complete it (2.8%). As with the previous study only the results from completed questionnaires were analysed.<sup>3</sup> The age range of patients was 15 to 64 years, mean 25.7; 1014 (94.1%) were under 40 years of age. The racial origin of patients was white 927 (85.9%), black 136 (12.6%), and Asian 16 (1.5%). There were 861 single women (79.8%), 120 (11.1%) married, and 98 (9.1%) separated, divorced, or widowed.

A total of 583 patients (54%) reported having more than one sexual partner in the preceding year, and 549 (51%) indicated that they had had more than five sexual partners in their lifetime. Table I gives the numbers of sexual partners of heterosexual women and those of homosexual men from data previously collected in our clinic.<sup>7</sup>

The women were questioned about anal intercourse and oral intercourse (fellatio): 164 patients (15.2%) experienced anal penetration at least occasionally, and 88 patients (8.2%) had had full anal intercourse with ejaculation into the rectum. Occasional or more frequent fellatio was

TABLE II—Sexual behaviour of patients seropositive for HIV antibody

	Patient 1	Patient 2	Study group (n=1079)
No of partners in previous year	3	2	2 (median)
No of partners in lifetime	40	50	6 (median)
Regular partner with HIV infection	Yes	Yes	—
Anal semen	Yes	Yes	8.2%
Oral semen	Yes	Yes	42.0%
Use of condom	Occasionally	Never	53.1% never (with non-regular partners)

TABLE III—Use of condoms

	Frequency of condom use			
	No % never	No (%) occasionally	No (%) often	No (%) always
With regular partners (n=1066)	672 (63.0)	262 (24.6)	70 (6.6)	62 (5.8)
With non-regular partners (n=424)	225 (53.1)	99 (23.3)	44 (10.4)	56 (13.2)

reported by 825 patients (76.4%) and ejaculation into the mouth by 453 (42%).

The patient who was found to have antibodies to HIV by screening had declined to answer the questionnaire on sexual behaviour. Table II gives the responses of the other two positive patients. Both were in the top fifth percentile for lifetime partners, and both received semen both anally and orally.

A final question was about the use of condoms: 63% of the women never and 5.8% always used a condom with their regular sexual partner (table III). Of the 1079 responders, 655 (60.7%) considered that the question about condom use with non-regular partners did not apply to them. Of the remainder, 225 patients (53%) never and 56 (13.2%) always used a condom with non-regular partners.

We did not question patients directly about specific risks of HIV infection (which is the subject of a subsequent study), but there were 97 in whom such a history was obtained: 50 reported having had previous bisexual partners, 20 had had partners who were intravenous drug users, five were users themselves, and 22 had had partners from or were themselves from equatorial Africa.

## Discussion

This study was carried out immediately after a national information campaign on AIDS funded by the government<sup>8</sup> and looked at the extent to which HIV infection had spread to the heterosexual community by screening a cohort of women who attended a department of genitourinary medicine. Women were chosen for the study because transfer of infection with HIV from the high risk groups through heterosexual intercourse would show up in the infection of women. The finding of a prevalence of 0.27% suggested that only sporadic infection of women has occurred. Moreover, infection was found only in women who were the regular sexual partners of men who practised high risk behaviour. Had the study been confined to women who requested the HIV antibody test the apparent prevalence would have been nearly four times greater.

Patients who are at risk for HIV infection are also at a greater risk of hepatitis B infection.<sup>9</sup> The prevalence of hepatitis B infection among patients in genitourinary medicine clinics has been reported as 4% to 8% for women compared with 4% to 18% for heterosexual men and 19% to 76% for homosexual men.<sup>10-12</sup> Our results showed very low prevalence of hepatitis B infection among women in west London, and most of those who were infected were born outside the UK and may have been infected from childhood. Hepatitis B infection, which was described by Lurman in 1885,<sup>13</sup> has therefore not established itself in the local heterosexual community despite being highly prevalent among local homosexual men (57% in our 1984-5 study<sup>7</sup>), more infectious than HIV, and caused by a virus with similar routes of transmission.

TABLE I—Sexual partners of heterosexual women and homosexual men at clinic

No of partners	No (%) of heterosexual women, 1987 (n=1079)	No (%) of homosexual men, 1984/5 (n=304)
In previous year:		
1-5	1024 (94.9)	93 (30.6)
6-10	50 (4.6)	68 (22.4)
>10	5 (0.5)	143 (47.0)
	$\chi^2=689.67$	$p<<0.001$
In lifetime:		
1-10	822 (76.2)	7 (2.3)
11-100	247 (22.9)	111 (36.5)
>100	10 (0.9)	186 (61.2)
	$\chi^2=840.62$	$p<<0.001$

The heterosexual women whom we studied had far fewer partners than the homosexual men who attended the clinic. Rapid spread of any sexually transmitted infection would thus be much more likely to occur among the homosexual men. The results of our recent study of homosexual men,<sup>7</sup> which have been confirmed by others,<sup>14,15</sup> suggested that receptive anal intercourse is by far the most usual route of HIV transmission. It was practised by 86% of homosexual men, and only 8% of women said that they received semen in the rectum. But it has been suggested that this potential route of transmission is more important than it seems because there are many more heterosexual women than there are homosexual men.<sup>16</sup>

The advice of the national campaign to use condoms for sexual intercourse with any partner whose state of health is uncertain seems to have had little effect. In our study only about one in eight of the women at risk always followed this advice, and more than half never used a condom. There is, however, no evidence from this group of women that HIV infection is being spread by casual vaginal intercourse. Clearly, the risk of becoming infected with HIV for heterosexual women in London is very low and is likely to remain so if the epidemiological parallel with hepatitis B infection is valid.

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# Everyday Aids and Appliances

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## WALKING STICKS

The doctor's stick with its gold handle was once a symbol of his profession, and at the turn of the century a nobleman was not considered fully dressed without his jaunty stick. Nowadays, sticks have little social meaning. Indeed, elderly ladies may feel too proud to be seen using them. Yet the walking stick can be as important a tool to a person with joint disease or problems with balance as golf clubs, skis, and rackets are to the sportsman.

### Indications for walking sticks

Some elderly people use sticks to proclaim their frailty. Unfortunately, some need to carry them as a defensive weapon. White sticks help identify those who are blind. Walking sticks reduce the fear of instability and can aid locomotion in hemiplegia. They relieve pain by giving support and therefore improve mobility. In degenerative joint conditions affecting the legs and after hip operations the stick aids walking by transmitting some of the body's weight through the arm. A typical patient with osteoarthritis of the hip will take 13.5 kg of his weight through his stick and this greatly diminishes the static forces on the affected joint.

Before prescribing a stick it must be established that the patient has enough strength and control in the upper arm and that the arm and hand are free from any joint condition which would be exacerbated by using the stick. In unilateral disease one stick should suffice, but two sticks (which give better balance and weight relief<sup>1</sup>) may be needed in bilateral disease.

### How to choose the correct stick

We should give as much care to assessing a stick as we would to fitting shoes<sup>2</sup> and should pay particular attention to the material, length, handle, and tip.

### Material

A descendant of the shepherd's crook, the wooden stick has a traditional quality denied to utilitarian metal sticks. Wood is cheaper and usually lighter. Many sticks are bought privately (from country fairs or, curiously, tobacconists); others are inherited. Some are obtained from hospitals or social service departments. Wooden sticks have a curved handle which allows the stick to be placed on the forearm or coat hook. The wood should be examined for splintering or decay. The shaft should not be too flexible or it will feel insecure and may not withstand the increased load engendered by using stairs.

Lightweight aluminium sticks are more robust and their length is adjustable. They do not fracture and are fitted with plastic or rubber handles contoured to the individual.<sup>3</sup>

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