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Prevalence of HIV infection in patients attending an inner city accident and emergency department

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The prevalence of HIV-1 infection among patients attending accident and emergency departments in hospitals in the United States is consistently higher than that among other groups of patients served by these hospitals.¹ A study at the Johns Hopkins University Hospital showed that 1 in 17 (6%) patients attending its accident and emergency departments were positive for HIV-1 antibodies, compared with 1 in 166 (0.6%) military recruits from the area served by the hospital.² Until the present study, no such comparison could be made in Britain as few data were available on the prevalence of HIV-1 antibodies in patients attending accident and emergency departments in Britain. This study sought to determine the prevalence of HIV infection in adult patients attending the accident and emergency department of St Mary's Hospital, London, which is in an inner city area and is attended by 56 000 new patients a year.

Patients, methods, and results

Anonymised urine samples were obtained from 875 consecutive patients seen in the accident and emergency department; blood samples were taken from 47 patients who could not produce a urine sample. No repeat samples were taken from patients who attended again later. The collection and numbering of samples conformed to the requirements of Parkside Research Ethics Committee. Each patient's sex, age, postal district of residence, general practitioner, and triage group were noted, as were the presence or absence of open wounds and whether the patient was a foreign visitor. These details were also obtained for patients who did not agree to participate in the study and did not give samples.

All but four of the 875 urine samples had adequate concentrations of IgG (>0.1 mg/l) for testing for antibodies to HIV-1 and HIV-2 with IgG antibody capture enzyme linked immunosorbent assay (ELISA) (Murex Diagnostics, Dartford). Urine samples that were reactive in this assay were titrated in an IgG antibody capture particle assay and tested by western blotting.^{3,4} Blood samples were screened for antibodies to HIV-1 and HIV-2, and if they were reactive the result was confirmed with conventional ELISAs. Of the 918 urine and blood samples tested, 12 urine samples were positive for HIV-1 antibodies, giving a prevalence of 1 in 77 (1.3%).

The patients who were positive for HIV-1 antibody differed significantly from those who were negative in that they were more likely to be male, foreign visitors, and aged 26-45 (table). All of the eight patients who

reported themselves as infected with HIV-1 when they presented at the accident and emergency department were among the 12 patients whose urine was positive for HIV-1 antibody. The patients who provided blood or urine samples were representative of the overall intake of patients in the accident and emergency department with regard to age, sex, triage group, and proportion of foreign visitors; the 69 patients who did not give samples did not differ significantly in these respects from the patients who did participate in the study. None of the 918 patients was positive for HIV-2 antibodies.

Details of 918 adults attending accident and emergency at St Mary's Hospital, according to whether they were negative or positive for HIV-1 antibody

	Negative (n=906)	Positive (n=12)	P value*
No who provided urine specimen (IgG > 0.1 mg/l)	859	12	
No who provided blood specimen	47		
No (%) of men	451 (50)	9 (75)	<0.001
No (%) of aged:			
16-25	163 (18)	1 (8)	NS
26-45	335 (37)	11 (92)	<0.001
46-95	408 (45)		<0.001
No (%) whose general practitioner was known	453 (50)	8 (67)	<0.05
No (%) who were foreign visitors	254 (28)	9 (75)	<0.001
No (%) with open wound	154 (17)	2 (17)	NS

* χ^2 test, df=1.

Comment

This study shows a relatively high prevalence of HIV-1 infection (2.4%) in patients aged 16-45 attending the accident and emergency department of St Mary's Hospital, London. This prevalence was significantly higher than that (1 in 167; 0.6%) found in a study of HIV-1 infection in hospital patients aged 16-49 in the four Thames regions (P<0.001, df=1).⁵ Our findings should alert authorities in inner cities to the prevalence of HIV infection in patients attending accident and emergency departments, even in a hospital with a large HIV clinic. There is a continuing risk of HIV-1 infection to health care workers, particularly inexperienced senior house officers practising emergency medicine in an environment that is often frenetic.

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