PREVALENCE AND PATTERN OF HIV INFECTION IN KARACHI

Pages with reference to book, From 2 To 4

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ABSTRACT

Two thousand seven hundred and seventy six subjects comprising 844 high risk and 1932 low risk group were screened for HIV antibodies by ELISA and western blot. Eight subjects from high risk group were HIV positive. They included three prisoners, two sexually promiscuous, two seafarers and one recipient of blood. The highest prevalence of the infection was found in sexually promiscuous group (5.40%±7.40) followed by prisoners (1.64%± 1.87), multi transfused patients (1.O%± 1.96) and seafarers (O.66%±O.93). No case of HIV infection was found in low risk population group, however, one pregnant woman had p24 and p55 antibodies on western blot (JPMA 43: 2, 1993).

INTRODUCTION

AIDS disease follows HIV infection by a median of four to five years[1]. Therefore, screening for HW antibodies has been recommended as one method to assess the present impact of HIV infection in a country[2]. The use of anonymous surveys in which data not linked to individuals has been suggested as a means of obtaining the least biased data without violating rights of confidentiality, informed consent and counselling that apply to individualized testing[3]. Even after several years of appearance and detection of HIV/AIDS infection[4,5], there is no precise data as to the extent of disease in Pakistan, therefore, an anonymous study was planned to determine the prevalence, pattern and distribution of HW infection in various population groups in Karachi.

SUBJECTS AND METHODS

A total of 2776 subjects from seven groups of potentially high and nine groups of potentially low risk persons from various clinics, laboratories, blood banks and the Central Prison in Karachi were included in the study. The details of high and low risk groups are given in Table I and II.

TABLE I. High risk population.

Study population	Male		Female		Total	
	No.	Mean age (range)	No.	Mean age (range)	No.	Mean age (range)
Seafarers	302	41.16 (24-62)			302	41.16 (24-62)
Prisoners	109	33.25 (22-55)	74	24.91 (16-55)	183	29.86 (16-55)
Haemodialysed patients	119	50.94 (20-80)	49	45.83 (20-73)	168	50.94 (20-80)
Multitransfused patients	63	39.47 (10-80)	40	35.45 (6-73)	103	37.94 (6-80)
Sexually transmitted patients	32	32.94 (22-49)	17	31.20 (22-52)	39	32.17 (22-52)
Extra marital sexual contact	35	32.15 (22-45)	2	35.00 (34-36)	37	32.15 (22-45)
Partners of high risk group	4	38.50 (35-41)	8	30.50 (22-42)	12	33.70 (22-42)

TABLE II. Low risk population.

Study population	Male		Female		Total	
	No.	Mean age (range)	No.	Mean age (range)	No.	Mean age (range)
General population	527	34.28 (18-62)	59	26.23 (18-45)	586	31.60 (18-62)
Unpaid blood donors	353	29.01 (18-50)	23	26.18 (20-35)	376	27.59 (18-50)
Pregnant ladies			298	25.07 (16-45)	298	25.07 (16-45)
Paid blood donors	290	32.05 (20-50)			290	32.05 (20-50)
Civil and armed forces personnel	118	33.00 (22-52)			118	33.00 (22-52)
Health care workers	89	34.16 (20-58)	27	35.74 (20-60)	116	34.79 (20-60)
Lymphoma/ leukaemia patients	49	30.51 (11-60)	22	27.80 (4-60)	71	29.17 (4-60)
Tuberculosis patients	45	33.24 (24-60)	25	38.86 (4-80)	70	35.08 (4-80)
Eunuchs					7	27.83 (19-35)

The samples of blood were drawn anonymously for some other tests without being informed about

their HW screening. However, in cases of extra marital sexual contact group, partners of high risk group and eunuchs blood was given voluntarily. All the sera were tested with enzyme linked immunosorbent assays (Abbott recombinant DNA kit) at the Department of Microbiology, Basic Medical Sciences Institute, Karachi. The repeatedly reacted samples on ELISA were tested on western blot at the National Institute of Health, Islamabad, the referral centre of National AIDS Control Programme. Confidence limit for 95% probability level was determined by the Standard6 formula.

RESULTS

Of 2776 cases 40 (1.4%) were initially reactive and 12 (0.43%) of these were repeatedly reactive on ELISA. Eight (0.28%) of these twelve were western blot positive, two were indeterminant (one pregnant lady with p24 and p55 bands and one seafarer with p55 band only). Out of 844 potential high risk groups, eight (0.95%) were found ELISA and western blot positive (Table III).

TABLE III. HIV screening of high risk population by ELISA and Western Blot.

Population	Total subjects	Initial reactive (%)	Repeatedly reactive (%)	Western Blot +ve (%)
Prisoners	183	5 (2.74)	3 (1.64)	3 (1.64)
Extra marital sexual contact group	37	2 (5.40)	2 (5.40)	2 (5.40)
Seafarers	302	4 (1.32)	4 (1.32)	2 (0.66)
Multi-transfused population	103	1 (0.98)	1 (0.98)	1 (0.98)
Haemodialysis patients	168	6 (3.57)	0	0
Partners of high risk groups	12	0	0	0
Sexually transmitted disease patients	39	1 (2.56)	0	0
Total	844	19	10	8

None of the low risk population were found HIV positive (Table IV).

TABLE IV. HIV screening of low risk population by ELISA and Western Blot.

Population	Total subjects	Initial reactive (%)	Repeatedly reactive (%)	Western Blot +ve
General population	586	0	0	0
Unpaid blood donors	376	5 (1.32)	1 (0.26)	0
Pregnant ladies	298	10 (3.35)	1 (0.33)	0
Paid blood donors	290	3 (1.03)	0	0
Personnel of civil and armed forces	118	0	0	0
Health care workers	116	3 (2.58)	0	0
Lymphoma/leukaemia patients	71	0	0	0
Tuberculosis patients	70	0	0	0
Eunuchs	7	0	0	0
Total	1932	21 (1.08)	2 (0.10)	0

The overall prevalence of HIV infection in the high risk population was 0.95%±0.66. The prevalence of HIV infection was 0.66%±0.93 (95% confidence limit) in seafarers, 1.64%± 1.87 in prisoners, 5.40%± 7.40 in extra marital sexual contact group and 1.00% ± 1.96 in multi transfused patients.

DISCUSSION

During the last four years since the first few AIDS cases were recognized and reported[7] in the city, no sero surveillance studies have been conducted. In the present study, the highest prevalence of HN infection was found in sexually promiscuous group confirming that 1-1W/AIDS is primarily a sexually and not a blood transmitted disea.se in this region as it was earlier reported[7,8]. This high prevalence of FIN infection in sexually promiscuous group could partially be attributed to the small size of the sample and its voluntary anonymous nature in which only those who considered themselves at high risk of acquiring the infection offered their blood for the test. The pattern observed in prisoners may be due to homosexuality and misuse of injectable drugs[9,10]. There is also a high risk of the spread of the disease in jails. There arc 15000 registered Pakistani seafarers who belong to all parts of the country and all segments of the society. The present finding of 0.66% prevalence of 11W infection in this population suggests the presence of around 100 HIV infections in this community alone, who may be unknowingly spreading the disease. One percent prevalence of HIV infection was found in multi transfused population confirms the earlier reports from this city[4,5]. Considering one million unit HW screening facilities at large in the country, it is feared that blood transfusion services would become a major source of the disease in general population. The low risk population of 1932 subjects was found HW/AIDS negative. If we take the appearance of p24 antibody band on western blot in the pregnant

women as a sign of early sero conversion or HIV-2 infection[12] then prevalence of HIV infection appears 0.05% in low risk population and 0.33% in pregnant women. This finding warrants that in future more cases of HW infection may be seen in pregnant women and also more HIV infected children. In this study sexual transmission was found a major mode of transmission of infection but risk through blood transfusion also appeared significant. Prevalence of HW infection in general population ranked very low. All these findings are similar to those of Middle East, Asia and large number of Pacific countries where overall incidence of HIV/AIDS is low and most cases are found among persons with contacts in other countries. However, there is increased evidence of indigenous transmission. Risk through transfusion of blood or its product and sharing of the needle is also significant. This pattern of HIV/AIDS infection is quite dissimilar to that of America where there is more infection through homosexuality and sharing of needles and to that of Africa where there is more infection through heterosexuality[13]. All efforts should be made to prevent FIN/AIDS spread in the country. Strong religious beliefs and deep rooted cultural values should he used to promote faith fullness in marital relations and avoidance of premarital sex. However, education on safe sex practices including the use of condoms should be instituted immediately[14] as this disease is spreading here in the same fashion, i.e., mostly through unprotected sex as it has been reported in the rest of the world. - In jails, facilities for screening and counselling for 11W infection should be available to all prisoners particularly to the members of high risk group. All high risk prisoners should be assisted in changing their high risk behaviour and in getting disposable syringes and condoms. Help of NGOs in this regard can be sought.

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