Serosurveillance of HIV Infection in People at Risk in Hyderabad Sindh

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Abstract

Random screening of 2000 serum samples of various low and high risk groups was carried out at WHO focal point, Department of Pathology, Liaquat Medical College, Jamshoro, Sindh, during the period between 1994 and 1995. This was done to evaluate the seropositivity. The sample contributors included 600 blood donors, 575 prisoners, 500 tuberculosis patients, 100 truck drivers, 50 hepatitis-B patients, 100 members of Nursing staff and 50 patients with sexually transmitted diseases (STD). One sample was found to be positive for HIV. This belonged to a prisoner with history of heterosexuality. This low positive ratio can be attributed to social and religious restrictions in sexual relations (JPMA 47:302, 1997).

Introduction

Acquired immune deficiency syndrome (AIDS) was first recognized as a clinical entity in 1981. It was then thought to be present only in America with particular prevalence among the homosexuals[1]. It was, however, soon realized that the incidence of this disease was increasing. It was being identified in different groups and in other parts of the world[1]. AIDS soon acquired such proportions that it became the focus for priority attention by politicians, public health workers, the press and public. This was also because the disease has an invariably fatal outcome. There are no curative measures so that full attention is presently diverted to the preventive measures. Screening for seropositivity is one important preventive measure. Various screening techniques are available, e.g. sero-agglutination, ELISA and Western blot We found the sero-agglutination method tobe simple, quick to perform, reliable and easily readable by the naked eye and this, quite suitable for mass screening. A study was conducted at the Department of Pathology, Liaquat Medical College, Jamshoro, Hydembad, during 1994-95, in order to screen members of various known risk groups in Hyderabad region for seropositivity for human immune-deficiency virus (HIV). Two thousand samples were screened in this study by sero-agglutination technique. The results are discussed and literature reviewed.

Material and Methods

A prospective study of random screening for HIV infection was carried out at the WHO focal point, Department of Pathology,Liaquat Medical College, Jamshoro, during 1994-95. Serum samples of 2000 members of general public belonging to various, low as well as high, risk groups were screened. The samples belonged predominantly to males, with a male/female ratio of 1770/230 (8:1). Their ages ranged between 16 to 70 years. The breakdown of different groups is given in Table 1.

Table I. The breakdown of different groups.

S. No.	Risk group	Male	Female	Total No.
1..	Blood donors paid/voluntary	600	-	600
2.	Prisoners	575	-	575
3.	Tuberculosis patients	400	100	500
4.	Sexually transmitted disease patients	50	-	50
5.	Hepatitis B patients	30	20	50
6.	Long distance truck drivers	100	-	100
7.	Members of Nursing staff	-	100	100
8.	Laboratory workers	15	10	25
Grant total		1770	230	2000

The subject recruitment was at random. The serum samples were tested by scro- agglutination technique for the detection of HIV antibodies. Commercially available serodia kits were used to demonstrate HIV antibodies.

Results and Observations

Two thousand serum samples of people belonging to various low and high risk groups for HIV infection, were screened for the detection of HIV antibodies. All but one sample were found to be seronegative. The seropositive sample belonged to a prisoner with a history of heterosexual contact while his stay abroad. Serodetection ratio for HIV antibodies among the samples tested in our study of Hyderabad region was 0.05%. This is comparable with the results obtained from other regional centres in Pakistan[2-9].

Discussion

HIV has been isolated from blood serum and various body fluids including semen. cervico-vaginal fluid, breast milk, tears and saliva. All epidenuological studies indicated mainly blood, semen and cervico-vaginal secretions and three basic modes in transmission i.e., (i) sexual intercourse, (ii) transmission by contaminated blood or blood particles or contaminated skin piercing instrument and (iii) from an infected mother to her baby[1]. The risk groups with these modes of transmission are mainly blood donors[10], prostitutes[11], prisoners, drug addicts[12], tuberculosis workers, hepatitis-B patients and truck drivers. In this study serum samples were collected from relative risk groups at patients[13,14], sexually transmitted disease patients, laboratory random and screened. Of the 2000 samples studied, only one was found seropositive giving a figure of 0.05%. A comparison with other studies in Pakistan is shown in Table II.

Table II. Comparative figures of Pakistani studies for HIV prevalence.

Authority	Place	Year	Population		HIV positivity	
			Type	No.	No.	%age
Mujeeb and Hashmi	Karachi	1988	Mixed	1363	2	0.15
Khanani et al	Karachi	1990	Mixed	413	3	0.73
Mujeeb et al	Karachi	1991	Blood donors	1665	0	0.0
Raziq et al	Peshawar	1993	Mixed	34353	35	0.10
Tarique et al	Rawalpindi	1993	High risk	844	8	0.95
			Low risk	1932	0	0.0
Kayani et al	Karachi	1994	Mixed	47609	51	0.11
Iqbal and Rehan	Lahore	1995	Mixed	16171	11	0.07
G.M. Memon	Hyderabad	1995	Mixed	2000	01	0.05

In a study by Kayani et al[2], 47609 individuals were screened and a positivity rate of 0.11% was determined. The largest number of positive subjects were foreigners and expatriates with a frequent travel history or recipients of multiple transfusions. It was thus observed that HIV infection was acquired during a stay abroad. Tarique et al[3] intheirstudy from Rawalpindi screened 54170 individuals of mixed population. Of these. 30 (0.06%) were found positive for HIV and only 3 had acquired it in Pakistan. In the study by Raziq et al[4] in Peshawar 35 (0.1%) serum samples Out of 34353 individuals were detected seropositive. The mode of transmission in 31 cases was heterosexual, in two homosexual, in one through blood transfusion and in another through I.V. drug abuse. Thirty-three of them were infected while abroad and two females acquired it from their husbands. Iqbal and Rehan[5] from Lahore screened 16171 individuals of mixed population and found 11(0.07%) to be seropositive. The common mode of transmission was heterosexual (50%), blood transfusion (3 0%), homosexual (10%)andverticaltransmission(10%). In all cases the infection was acquired outside the country. A study by Mujeeb and Hafeez[6] conducted at Karachi, screened 2776 individuals of low and high risk groups. Seropositivity was seen at a rate of 0.95% in the high risk group only. An earlier study b Mujeeb and Hashmi[7] conducted in 1988 found 2 cases (0.15%) to be HIV positive from 1363 blood donors. Both were married females with a history of multiple blood transfusions. In another study Mujeeb et al[8] screened 1655 blood donors in 1991 with no seropositive case.

Khanani et al[9] reported 3 cases of HIV infection in a group of 413 individuals in 1990 of which two were Pakistani nationals residing in Saudi Arabia and had received multiple blood transfusion. A review of various studies conducted in Pakistan, reveals that heterosexual transmission is the commonest mode, with a low range of HIV seroprevalence (0.07-0.1%). This study also showed the mode of transmission to be heterosexual with a low rate of seropositivity (0.05%). The low rate of HIV seropositivity in Pakistan can be attributed to the religious, cultural and social practices which place indiscrete and extramarital sexual relations to be a sin. The spread of HIV infection can be reduced by controlled sexual practices, screening of blood before transfusion and avoiding the reuse or sharing of contaminated needles and syringes.

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