AIDS AND HIV ASSOCIATED DISORDERS IN KARACHI

Pages with reference to book, From 82 To 85

Rafiq M. Khanani (Department of Pathology, Sind Medical College, Karachi.)
Amtul Hafeez (Department of Microbiology, Basic Medical Sciences Institute, Jinnah Postgraduate Medical Centre, Karachi.)
S.M. Rab (Department of Medicine, Jinnah Postgraduate Medical Centre, Karachi.)
Suraiya Rasheed (Laboratory of Viral Oncology and AIDS Research, Department of Pathology, University of Southern California, Los Angeles.)

Abstract

In a seroepidemiological study for the prevalence of HIV infection in Pakistan, individuals from different groups were tested for HIV antibodies using ELISA. Positive results were confirmed by western blot. Out of 413 individuals screened four were found positive by ELISA, of these three were confirmed by western blot. Two cases were foreign nationals visiting Pakistan, one of them died of full blown AIDS, the other did not show any AIDS related condition. The third case was a Pakistani national who presented with full blown AIDS with toxoplasmosis. To our knowledge this is the first case of full blown AIDS reported in a Pakistani national. The fourth case was an asymptomatic promiscuous lady who could not be traced further. Blood transfusions abroad and sexual contacts were responsible for HIV infection in these cases (JPMA 40 : 82, 1990).

INTRODUCTION

Acquired Immunodeficiency Syndrome (AIDS) is a viral disease caused by a human T-Cell Lymphotropic retrovirus[1] now designated as Human Immunodeficiency Virus (HIV) by the International Committee on Taxonomy of Viruses[2]. The clinical spectrum of HIV infection appears increasingly complexand varies from a transient flu like illness[3] to a prolonged debilitating condition with most devastating opportunistic infections[4] and malignancies[5]. The cumulative number of reported cases of AIDS is growing as a cubic function of time and it is estimated that between five and ten million people have been infected with human immunodeficiency virus worldwide[6]. HIV infection among homosexual men is 30 to 50 times as common as AIDS and it may be even higher in haemophiliacs[7]. High risk groups include homosexual men, parentral drug users, recipients of blood and blood products, promiscuous heterosexual males, prostitutes, spouses of persons at increased risk and children born to the mothers at high risk[8]. According to Mann[6], three patterns of HIV infection can be recognized. The first pattern, typified by North America, Europe, Australia and New Zealand involves the areas where the virus has been present for several years and the major groups infected are homosexual and bisexual men and intravenous drug users. The second pattern is typified by Africa and Haiti where the major mode of spread appears to be heterosexual from man to woman and woman to man. The third pattern is an Asian pattern. Here most infections with HIV appear to have resulted from exposure to blood or blood products from the industrialized countries or sexual contact with men or women from countries where AIDS is prevalent. However, in these parts of the world the virus is relatively rare and much can be done at, this stage to limit the spread of HIV infection and AIDS. The present study was conducted to find out if there is any indication of HIV infection in Pakistan. Representative individuals from various high risk groups were investigated for antibodies to HIV.

PATIENTS AND METHODS

Four hundred and thirteen cases belonging to the high risk groups were investigated in a hierarchial mann. (Table I).

TABLE-I.

	Groups	No.
1.	Professional blood donors	202
2.	Recipients of multiple blood transfusions	48
3.	Clinical cases	30
4.	Drug addicts	54
5.	Haemophiliacs	21
6.	Foreigners/Pakistanis settled abroad	25
7.	Those suspected of promiscuous behaviour	23
8.	Family members/contacts	10
	Total	413

1. Professional blood donors

Most of the individuals were poor, and earned their living by donating approximately four to eight units of blood per month. Of these, 160 donors also had used illicit drugs primarily by inhalation and some parenterally also. Only 44 donors admitted their indulgence in promiscuous sexual activities and 21 admitted homosexual practice at some time during their lives.

2. Recipients of blood transfusions

Patients with thallassaemia, aplastic anaemia, oesophagealvaricosities or other conditions requiring multiple blood transfusions were included in this group. They bad received more than five units of blood during the last five to ten years.

3. Clinically suspected cases

Six subjects had clinical symptoms of AIDS while 24 patients had lymphadenopathy of more than two month's duration, involving more than two extrainguinal sites.

4. Drug Abusers

Primary route of drug administration was by inhalation. Only 8 subjects revealed their involvement in out of wedlock heterosexual activity, whereas five also admitted their involvement in homosexuality.

5. Haemophiliacs

Four individuals had used factor VIII prepared in U.K., while the rest had used a domestic preparation of cryoprecipitate, fresh whole blood or plasma.

6. Persons having a history of abode in high risk countries

This group included foreign nationals visiting Pakistan especially those of black races and Pakistanis who had stayed in America, England, France, or African countries.

7. Suspected promiscuous behaviour

Since out of wedlock sexual activity is illegal in our country and prostitution and homosexuality are highly stigmatized, only subjects in which there was a strong suspicion of promiscuous sexual behaviour were included.

8. Family Members

Only one family of a sero-positive case could be contacted. He was a blood recipient. His family

comprised often members including the mother, two brothers, two sisters, the wife and four children. Blood was collected from each individual in the above eight groups. Serum was separated and screened for antibodies to HIV using Abbott Diagnostics second generation Enzyme Immuno Assay (EIA) kit. Criteria for reactivity were determined by programmed spectrophotometric readings using Quantum II (Abbott Diagnostic). Cut off points were calculated according to the manufacturer's instructions relative to the known negative and positive controls included in the batch. The cases found reactive were retested twice and only repeatedly reactive samples were considered positive for HIV antibodies. Western blot (Immunoblot) analysis was performed on each positive sample for confirmation by using highly purified HIV antigens immobilized on nitrocellulose strips (BIORAD). Distinct bands reactive with specific HIV antigens were identified by comparing the banding pattern of each sample with that of controls obtained from the Centers for Disease Control (CDC), Atlanta, Georgia. The samples were also sent to the National Institute of Health, Islamabad for confirmation.

RESULTS

The results of the ELISA test for HIV antibodies are summarized in Table II.

TABLE II. HIV antibody by EIA in various groups.

Category of Cases	Total No.	Initially reactive	Repeatedly reactive
Professional Blood donors	202	02	0
Recipients of multiple blood transfusion	48	02	01
Clinical cases	30	02	01
Drug addicts	54	0	–
Haemophiliacs	21	02	0
Foreigners/Pakistani settled abroad	25	01	01
Suspected of promiscuous behaviour	23	01	01
Family members/contacts	10	0	–
Total	413	10	04

Among 202 professional blood donors two were initially reactive but none repeatedly reactive. Out of 48 recipients of multiple blood transfusions two cases were reactive on initial testing but only one was repeatedly reactive. Among 30 clinically suspected cases, two cases were found initially reactive, but only one was found repeatedly reactive. Out of 54 drug addicts none was found reactive. Among 21 haemophiiacs, two were found initially reactive. Only one case among 25 of those having stayed in high risk countries was found repeatedly reactive. Out of 23 subjects suspected of having sexually promiscuous behaviour only one was repeatedly reactive. Among the ten family members of one of the

sero-positive blood transfusion recipients none was found reactive. A total of four cases were found to be repeatedly reactive (positive). Of these only three were confirmed by Western blot analysis as one sample could not be confirmed due to insufficient serum. The results by Western blot are shown in Figure.

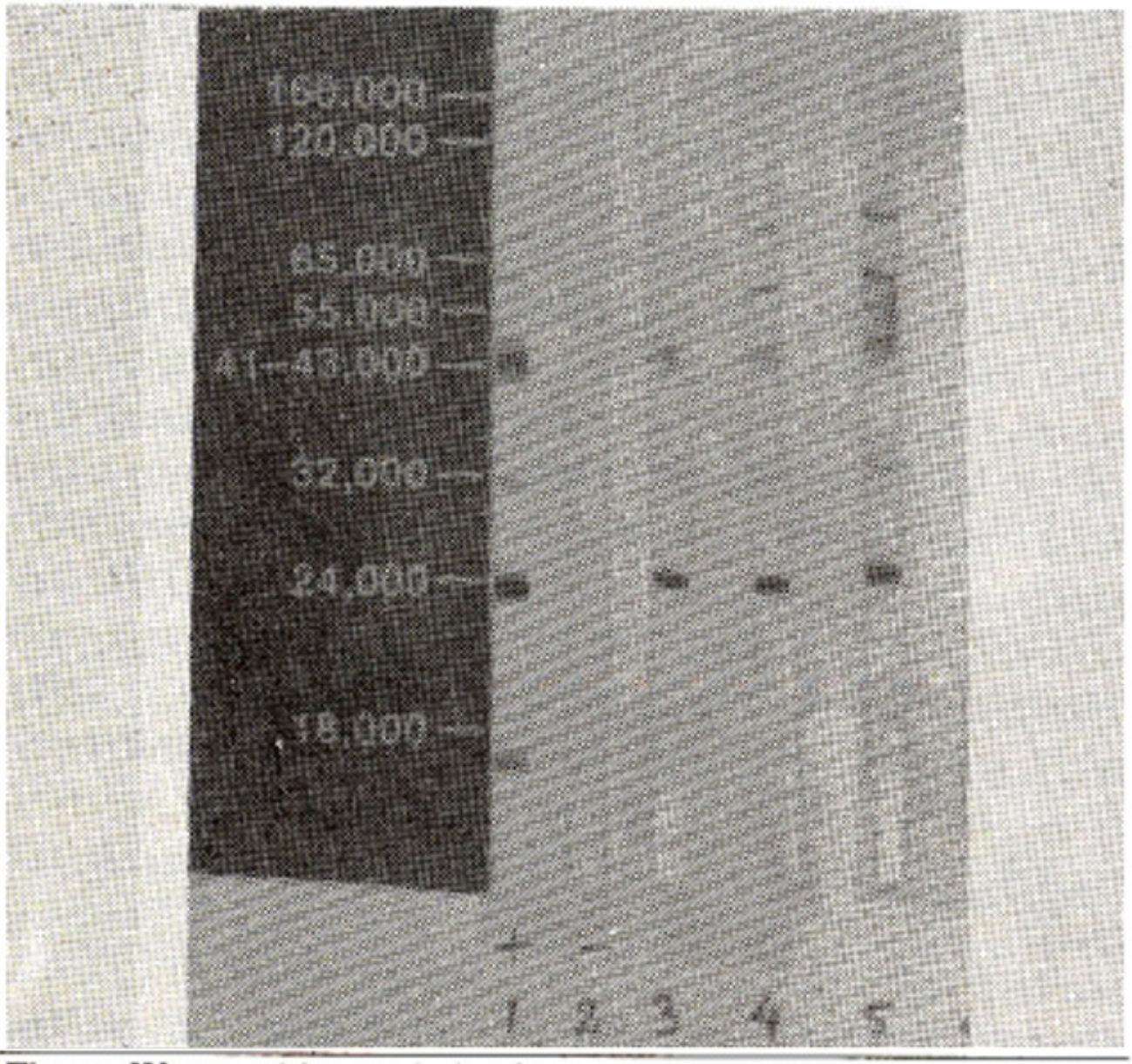

Figure. Western blot analysis of repeatedly reactive sera.1.) Positive Control., 2) Negative Control, 3)Blood transfusion recipient, 4) Blood transfusion recipient, 5) Clinically suspected case (foreign national), 6) Foreign national (Asymptomatic).

DISCUSSION

The present study was carried out to find the occurrence of HIV infection in Pakistan and to identify its mode of transmission and the ithportant risk factors involved. Several groups considered to be at high

risk for acquiring such an infection were included in this study. The Enzyme Linked Immunosorbent Assay (ELISA) technique was used to sCreen all the serum samples for HIV antibodies. This is regarded as the most sensitive technique available[9], and western blot and immunofluorescence antibody techniques as highly specific tests correlating 99.7% with each other[10]. Therefore, Western blot was used in the present study to confirm ELISA reactive cases. Our finding of one HIV sero positive male among multiple blood transfusion recipients is quite significant. This person was transfused blood and blood products at the Abdullah Fouad Hospital, Dammam, Saudi Arabia in Nov. 1981 following a serious crush injury in an industrial accident. A part from this, the patient had no other known risk factors. He was married and had no history of out of wedlock sexual contact or drug abuse. He developed clinical symptoms in April 1988. Initially there was low grade fever with weight loss. It was followed by a productive cough and oral thrush. The condition of the patient gradually deteriorated and he was repatriated to Pakistan. He had pancytopenia, an antitoxoplasma antibody test was positive, the absolute number of T4 cells was 40/cmm and the T4:T8 ratio was 0.02. To our knowledge this is the first case of full blown AIDS in a Pakistani national in Pakistan. His wife stayed with him for about one month following recovery from the said accident during which she conceived and later on delivered a baby girl in 1982. Both wife and this child as well as three elder children of this couple were found negative. Five other family members including brothers, sisters and mother were also negative. Serum samples of his wife and all the children have been sent to the university of Southern California for HIV Antigen tests and viral cultures to exclude the possibility of a sero-negative carrier state. The results axe still awaited. The second positive case in the present study was a male foreigner in the clinically suspected group. He was a Tanzai3ian and was suffering from chronic diarrhoea, severe dehydration, weight loss, fulminating chest infection and oral trush. He was admitted to the Civil Hospital, Karachi where he expired. His condition was so precarious that a detailed history could not be obtained. The third positive case was also a foreigner, a Ugandan but he did not show any AIDS related symptoms. He had received blood transfusions in Uganda in 1985 following the fracture of a femur in a road accident. He had a number of heterosexual contacts both in Pakistan as well as in Uganda, Tanzania and India. He denied any homosexual contacts. He was also addicted to drugs but had not shared needles or injection solutions. He was suffering from jaundice. His liver function tests were consistent with hepatocellular jaundice and a HBsAg test was also positive. The fourth positive case was a Pakistani female belonging to sexually promiscuous group. This case could neither be confirmed by Western blot, nor could a detailed history be obtained as she could not be traced after donating the first sample on which repeated ELISA tests were performed. In conclusion, our study clearly shows that although most of the cases of AIDS recognised in Pakistan are imported in people from abroad, some may have been acquired in Pakistan by contact with these infected persons. Moreover, cases of frank AIDS emphasize the need to promulgate a national policy for the clinical management of patients with AIDS and AIDS related diseases. Unless properly screened and quarantined these cases could be responsible for spread of AIDS in Pakistan.

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