



To Study the Clinical Profile of HIV/AIDS Patients

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Abstract

Introduction: *The Human Immunodeficiency Virus (HIV) is a lenti virus (a subgroup of retrovirus) that causes HIV infection and acquired immunodeficiency syndrome (AIDS).¹ HIV causes progressive impairment in body's immune system leading to increased susceptibility to tumours and fatal opportunistic infection known as acquired immune-deficiency syndrome (AIDS). The aim of our study was to study the clinical profile of HIV/AIDS patients.*

Materials: *It was an observational study including 269 HIV positive patients who were willing to be a part of the study. According to the WHO case definition, HIV^{2,3} in adults and children 18 months or older is diagnosed based on positive HIV antibody testing (rapid or laboratory-based enzyme immunoassay). This is confirmed by a second HIV antibody test (rapid or laboratory-based enzyme immunoassay) and/or; positive virological test for HIV or its components (HIV-RNA or HIV-DNA or ultrasensitive HIV p24 antigen) confirmed by a second virological test obtained from a separate determination.*

Observations: *In our study, out of the 269 HIV/AIDS patients, majority 122 (45.40%) were belonging to 30-39 years of age, married patients were 248 (92.20%), less educated group had majority with maximum among the group educated till 12th standard (71.70%), majority (73.60%) of HIV/AIDS individuals were in <836 percapita group and the mean CD4 count in male HIV/AIDS patients was 360.32+ 183.80.*

Conclusion: *The present study found that most of the HIV infected patients were from sexually active age group. The commonest mode of acquiring infection was heterosexual contact, emphasizing the need to strengthen our Information education and communication (IEC) strategies to contain HIV/AIDS. The majority of the seropositive population in this study was from lower socioeconomic class, married group and between age group, i.e. 30 and 39 years. As this is the major part of reproductive age group, it significantly affects the development of the community.*

Keyword: HIV, AIDS.

Introduction

HIV is a global pandemic. AIDS was first clinically observed in United States in 1981.⁴

The first case of HIV/AIDS in India was identified in Chennai in 1986.⁵ India has the third largest HIV epidemic in the world. In 2013, HIV

prevalence in India was an estimated 0.3 percent. The initial case were clusters of Intravenous (I.V.) drug abusers and homosexual men with no known cause of impaired immunity who showed symptoms of *Pneumocystis carinii* pneumonia (PCP), rare opportunistic infection that was known to occur with compromised immune systems. Soon thereafter, additional gay men developed a previously rare skin cancer called Kaposi's sarcoma (KS).⁶ Globally, 35.0 million [33.2–37.2 million] people were living with HIV at the end of 2013. An estimated 0.8% of adults aged 15–49 years worldwide were living with HIV, although the burden of the epidemic continues to vary considerably between countries and regions. Sub-Saharan Africa remains most severely affected, with nearly 1 in every 20 adults living with HIV and accounting for nearly 71% of the people living with HIV worldwide.⁷ It resulted in about 1.34 million deaths in 2013, down from a peak of 2.2 million in 2005.⁸ Overall, India's HIV epidemic is slowing down, with a 57 percent decline in new HIV infections between 2000 and 2011, and a 29 percent decline in AIDS-related deaths between 2007 and 2011.⁹ The Government of India launched the free ART programme on 1 April 2004, since then more and more patients are put on ART treatment with rapid expansion of the programme.¹⁰

The HIV virus is commonly transmitted via unprotected sexual activity, blood transfusions, hypodermic needles, and from mother to child. Upon acquisition of the virus, the virus replicates inside and kills T helper cells. There is an initial period of influenza-like illness, and then a latent, asymptomatic phase.

When the CD4 lymphocyte count falls below 200 cells/ L of blood, the HIV host has progressed to AIDS, a condition characterized by deficiency in cell-mediated immunity and resulting in increased susceptibility to opportunistic infections and certain forms of cancer.^{11,12} This response is accompanied by a marked drop in the numbers of circulating CD4+ T cells. This acute viremia is associated in virtually all people with the

activation of CD8+ T cells, which kill HIV-infected cells and subsequently with antibody production or seroconversion.

A good CD8+ T cell response has been linked to slower disease progression and a better prognosis, though it does not eliminate the virus.^{11,13} A major cause of CD4+ T cell loss appears to result from their heightened susceptibility to apoptosis when the immune system remains activated. Although new T cells are continuously produced by the thymus to replace the ones lost, the regenerative capacity of the thymus is slowly destroyed by direct infection of its thymocytes by HIV. Eventually, the minimal number of CD4+ T cells necessary to maintain a sufficient immune response is lost, leading to AIDS.

Most people infected with HIV develop specific antibodies (i.e. seroconvert) within three to twelve weeks of the initial infection. Diagnosis of primary HIV before seroconversion is done by measuring

HIV-RNA or p24 antigen.¹⁴ Positive results obtained by antibody or PCR testing are confirmed either by a different antibody or by PCR. HIV/AIDS is diagnosed via laboratory testing and then staged based on the presence of certain signs or symptoms. Additionally, testing is recommended for those at high risk, which includes anyone diagnosed with a sexually transmitted illness. A third of HIV carriers discover they are infected at an advanced stage of the disease, when AIDS or severe immunodeficiency has become apparent.^{2,3} According to WHO case definition, HIV^{2,3} in adults and children 18 months or older is diagnosed based on positive HIV antibody testing (rapid or laboratory-based enzyme immunoassay). This is confirmed by a second HIV antibody test (rapid or laboratory-based enzyme immunoassay) and/or; positive virological test for HIV or its components (HIV-RNA or HIV-DNA or ultrasensitive HIV p24 antigen) confirmed by a second virological test obtained from a separate determination.

Material and Methods

Study Centre: Department of Medicine (Medicine wards, Out- patient department (OPD), Emergency unit), Anti- Retro Viral (ART) Centre, Netaji Subhash Chandra Bose Medical College & Hospital, Jabalpur (M.P.), INDIA.

Duration of Study: 18 Months

Study Design: Hospital based Observational Study.

Sample Size: 269 diagnosed patients of HIV/AIDS.

Inclusion Criteria: Patients with HIV/AIDS positive and registered under ART centre, Jabalpur and who are willing to be a part of the study.

Exclusion Criteria: HIV/AIDS individuals not willing to undergo above study.

All the subjects were informed about the study protocol and written informed consent was obtained.

Results

Table No 1 Age Wise Distribution of the HIV/AIDS Patients

Age (in years)	No.	Percentages
<20	5	1.90%
20-29	57	21.20%
30-39	122	45.45%
40-49	59	21.90%
50-59	20	7.40%
>60	6	2.20%
TOTAL	269	100.00%

Table No 2 Sex Wise Distributions of the HIV/AIDS Patients

Sex	No.	Percentages
Male	136	50.60%
Female	133	49.40%
Total	269	100.00%

Table No. 3 Mean Age V/S Sex

Sex	Mean Age (In Years)
Male	37.21 + 10.58
Female	34.27 + 8.46
Total	35.76 + 9.68

t=2.520; P<0.05

Table No 4 Distribution of the HIV/AIDS Patients on the Basis of Marital Status

Marital status	No.	Percentages
Married	248	92.20%
Unmarried	21	7.80%
Total	269	100.00%

Table No 5 Religion Wise Distribution of the HIV/AIDS Patients

Religion	No.	Percentages
Hindu	252	93.70%
Muslim	9	3.30%
Sikh	7	2.60%
Other	1	0.40%
Total	269	100.00%

Table No 6 Distribution of the HIV/AIDS Patients on the Basis of Education

Education	No.	Percentages
Illiterate	37	13.80%
Upto 12th STD	193	71.70%
Graduate	25	9.30%
Postgraduate	14	5.20%
Total	269	100.00%

Table No 7 Distribution of the HIV/AIDS patients on the Basis of HIV Status of Spouse

HIV Status of Spouse	No.	Percentage (%)
POSITIVE	183	73.80%
NEGATIVE	47	19%
NOT KNOWN	18	7.30%
TOTAL	248	100%

Table No 8 Distribution of the HIV/AIDS Patients on the Basis of Family Income (per capita):-

Family Income (Per Capita Per Month In Rs)	No.	Percentage (%)
<836	198	73.60%
836-1670	34	12.63%
1671-2785	19	7.06%
2786-5570	9	3.34%
2786-5570	9	3.34%
TOTAL	269	100%

Table No. - 9 Mean CD4 Count V/S Sex

Sex	Mean CD4 Count
Male	360.32±183.80
Female	399.41±182.47
Total	379.64±183.83

t=1.724;p>0.05

Discussion

In our study, out of the 269 HIV/AIDS patients, majority 122 (45.40%) were belonging to 30-39 years of age, followed by 59 (21.90%) belonging to 40-49 years age group and 57 (21.20%) belonging to 20-29 years age group (Table no. 1). HIV/AIDS was more common in reproductive age group patients. Our findings are consistent with a study conducted by Umesh S Joge et al¹⁵ over 801 HIV/AIDS positive patients who found that majority 471 (58.80%) were belonging to 30-39 years age group. Laxmi Gautam et al.¹⁶ also found that out of 385 HIV/AIDS patients taken, majority 275 (71.43%) belong to 30-45 years age group.

It was found that out of total 269 HIV/AIDS, 136 (50.60%) were males, and 133 (49.40%) were females (Table no.2). Abyramy Balasundaram et al¹⁷ in their study found that out of 130 HIV/AIDS patients 79 (60.8%) were males as compared to 51 (39.2%) females. M.A. Khan et al¹⁸ conducted a study over 251 patients found that HIV/AIDS was more common in male patients i.e. 164 (65.3%) as compared to the female patients 87 (34.7%). Deivam S. Gounder et al¹⁹ in their study over 105 HIV/AIDS positive patients also found that HIV/AIDS was more common in male patients 59 (56.2%) as compared to the female patients 46 (43.8%), consistent with our study findings.

The mean age of male HIV/AIDS patients was 37.21+ 10.58 years which was statistically significant ($p < 0.05$) as compared with the mean age of female HIV/AIDS patients (34.27+8.46 years). Mean age of total HIV/AIDS patients was 35.76 + 9.68 years in our study (Table no. 3). Mukesh Kumar Yadav et al²⁰ observed in their study that mean age for male HIV/AIDS patients was 34.62+10.2 years and for female HIV/AIDS patients was 32.12+9.62 years. Arunansutalukdar et al.²¹ in his study found that mean age for women with HIV/AIDS patients was 29.4+6.1 years and for men with HIV/AIDS was 35+6.9 years.

It was observed that HIV/AIDS was more common in married patients 248 (92.20%) as compared to the unmarried patients 21 (7.80%)

(Table no.4). Abyramy Balasundaram et al¹⁷ also found that HIV/AIDS was more common in married patients 113 (86.9%) as compared to unmarried patients 17 (13.1%). In another study, M.A. Khan et al¹⁸ also found that HIV/AIDS was more common in married patients i.e. 218 (86.9%) as compared to the unmarried patients.

In our study HIV/AIDS was found to be more common among the Hindus (93.70%) followed by Muslims (3.30%), Sikhs (2.60%), Christian (2.60%) and other religion (0.40%) (Table no. 5). The occurrence of HIV/AIDS more among the Hindus might be because the population in our study was Hindu dominated. M.S.

Zaheer et al²² in their study over 1550 HIV/AIDS patients found that HIV/AIDS was more common in Hindus (56.3%) as compared to Muslim Religion 21 (43.7%), consistent with our study results. It was observed that HIV/AIDS was more common in less educated group with majority among the group educated till 12th standard (71.70%). HIV/AIDS followed by the illiterate groups (13.80%). HIV/AIDS was less common among the higher educated group (postgraduate) (5.20%) (Table no. 6). Abyramy Balasundaram et al¹⁷ observed that HIV/AIDS was more common in individuals with primary level of education (46.9%) followed by individuals with secondary level of education (37.7%), where as HIV/AIDS was less common in uneducated patients groups (6.2%). Desalegn Asmare Eshetu et al²³ observed that HIV/AIDS was more common in individuals with primary level of education (37.7%) followed by secondary level of education group (23.8%), and HIV/AIDS was least common among the tertiary level of education group (9.1%). Preeti Rai et al.²⁴ in their cross-sectional study observed that HIV/AIDS was more common among the illiterate patients group (26.92%).

It was observed that out of the married 248 (92.2%) HIV/AIDS patients, 183 (73.8%) patients had their spouse HIV/AIDS positive, 47 (19%) patients had their spouse HIV/AIDS negative and 18 (7.3%) patients had their spouse HIV/AIDS status unknown (Table no.7). Umesh S Joge et

al¹⁵ in their study found that out of married 769 (96%) HIV/AIDS patients, 484 (62.94%) patients had their spouse HIV/AIDS positive, 133 (17.29%) patients had their spouse HIV/AIDS negative and 152 (19.77%) patients has their spouse HIV/AIDS status unknown.

According to the Modified Prasad Classification, majority (73.60%) of HIV/AIDS individuals were in <836 percapita group followed by 12.63% in 836-1670 per-capita group (Table no 8).

It was observed that the mean CD4 count in male HIV/AIDS patients (360.32+ 183.80) was less as compared to the female HIV/AIDS patients (399.41+182.47) with $p>0.05$ (non-significant) (Table no 9). J. Chakravarty et al.²⁵ found that the Mean CD4 count for male HIV/AIDS patients 179 + 9.3/uL and for female HIV/AIDS patients was 323 + 28.26/uL.

Conclusion

The present study found that most of the HIV infected patients were from sexually active age group. The commonest mode of acquiring infection was heterosexual contact, emphasizing the need to strengthen our Information education and communication (IEC) strategies to contain HIV/AIDS.

The majority of the seropositive population in this study was from lower socioeconomic class and between age group, i.e.30 and 39 years. As this is the major part of reproductive age group, it significantly affects the development of the community. It increases the financial burden of the family and affects the overall progress of the country. Marital life itself becomes a risk factor for those women who get infected by their HIV positive spouse.

HIV infection is one of the major infectious disease in this part of India, and being chronic lifelong in nature, its impact is huge compared to other infectious diseases. People with high risk behavior and the spouse of the affected couple need to be educated for primary and secondary prevention of the disease. HIV patients should be educated that the timely initiation and continuous

intake of antiretroviral therapy will not only prolong their survival but will also decrease the viral load and transmission of the disease. This disease results not only in the income loss, but the additional burden of treatment, completely devastates the affected families, therefore, the entire family needs support and care from both the community and the government. Provision of free antiretroviral treatment by the government of India is a step in the right direction, and it should be extended to the entire country.

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