The increase prevalence of HIV among Kashmir population a cross sectional institutional study

Original Research Article

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Abstract

Objectives: To study the Clinico-epidemiological and Socio-demographic profile of HIV/AIDS patients diagnosed at HIV clinic of Government Medical College and associated hospitals, Srinagar

Methods: A total of 50220 individuals visited the said clinic and were enrolled for the study. The Screening was done using different Elisa's as advised by NACO and those confirmed as HIV positive were studied for their clinical spectrum and different demographic parameters.

Results: Out of a total of 50220 patients tested for HIV 1 and/or HIV 2 infection, 173 were detected seropositive for HIV 1. The mean age of presentation of the participants was 30.04 ± 7.1 years. Among the seropositive patients, 138 (79.7 %) were married, 70(40.4%) were security personnel's, 123 (71.09%) were from non-local population and 150 (86.7%) belonged to rural areas. The commonest mode of transmission was heterosexual route 126 (72.8%). Majority of the participants 91(52.6%) who were detected positive for HIV/AIDS were having CD4 count at presentation between 150-250/µl. The commonest symptoms among HIV/AIDS seropositive patients was fever. Furthermore, sero-positive patients also had secondary opportunistic infections among which pulmonary tuberculosis was most common.

Conclusion: The clinical and demographic profile of HIV/AIDS patients in Kashmir is largely similar to the rest of India. Kashmir no longer stands immune to the menace of HIV/AIDS. With increasing globalization, frequent travel and change in social values the state is likely to witness an alarming rise in new cases unless a multipronged approach is undertaken to control the spread

Keyword: HIV/AIDS, Clinico-epidemiological, Socio-demographic, CD4, Prevalence

Introduction

The disease caused by HIV (human immunodeficiency virus) was first ever reported in the summers of 1981 from the United States when the U.S. Centers for Disease Control and Prevention reported an unusual and unexplained occurrence of pneumonia caused by Pneumocystis jiroveci and Kaposi's sarcoma among homosexual men in New York and Los

Angeles. Within some months, the disease was also found among injecting drug users (IDUs), among recipients of blood transfusions more commonly among hemophiliacs. As with research and time, the epidemiologic pattern of the disease unfolded and it became clear that this disease is caused by an infectious agent which is most likely transmissible by either sexual (homosexual and heterosexual) contact or through blood or blood products. Finally, in 1983, human immunodeficiency virus (HIV) was isolated from a patient with lymphadenopathy, and by 1984 it was demonstrated clearly to be the causative agent of acquired immune deficiency syndrome (AIDS).[1]

HIV infection/AIDS is a recognized global pandemic, with millions of cases reported from virtually every inhabitant continents of the world. At the end of 2017, it was estimated that 36.9 million individuals were living with HIV infection according to the joint United Nations Programme on HIV/AIDS (UNAIDS). It was also acknowledged that greater than 95% of people living with HIV/AIDS belong to low and middle-income countries, 50% are women, and 2.5 million are children < 15 years.[2]

In India, HIV was first detected among commercial sex workers (CSW's) in Tamil Nadu in 1986 and since then, the infection is growing quite fast. According to the 2017 UNAIDS data, India has an estimated 2.1 million people living with HIV. In 2016, India had 80,000 new HIV infections compared to 1,50,000 in 2005, and 62,000 AIDS-related deaths compared to 1,50,000 in 2005. With an HIV prevalence of 0.26% (0.22-0.32%) in 2017, adult HIV prevalence was estimated at 30% among males and at 22% among females. Among Injecting Drug Users (IDUs), it is as high as 9.9 %, among transgender (7.2%), men who have sex with men (MSM) 4.3% and female sex workers (FSWs) 2.2% respectively.[2] Presently, HIV/acquired immunodeficiency syndrome (AIDS) epidemic represents the most serious public health problem in India. NACO in

its 2003-2006 surveillance, reports 0.00% prevalence of HIV across different groups in Kashmir valley. According to the survey HIV prevalence is 0.58% and 2.94% in STD clinic attendees in Rajauri and Kathua districts respectively while as in the Jammu district it is 0.50% in the ANC attendees and 2.50% in IDUs.[3]

As the clinical and demographic profile of HIV/AIDS patients differs considerably through different regions of the world depending upon sexual practices, injection drug use, customs /beliefs, quality of health services and a host of other factors. Though numerous clinical/demographic studies have been carried out from across India, there is scarcity of literature on the data for Kashmir valley which is unique in its own place, as it reflects the scenario of a region that is quite different from the other parts of the country with regard to topography, social and cultural values, customs, beliefs, and rich Islamic culture. According to the latest Surviellance done by NACO in 2017 the current HIV prevalence is 0.03% (0.01-0.07%) with 10% increase in AIDS related deaths.[4] The present work aimed to study the clinical and socio-demographic profile of HIV/AIDS patients in Kashmir valley. The findings of our study will be useful for the policy makers and health care professionals for effective case management and the implementation of national programmes.

MATERIALS AND METHODS

This study is based on review of electronic medical records from patients who tested positive for HIV at HIV clinic of Government Medical College and associated hospitals, Srinagar. The study was approved by the hospital ethics committee. Demographic variables such as age, sex and occupation, data on mode of transmission and clinical manifestation and investigations were reviewed together. The study was carried out from April 2018-November 2018 at HIV clinic of Government Medical College and associated hospitals, Srinagar. The data for the last 16 years

[2002-2017] was available at the clinic. A total of 50220 individuals had visited the said clinic were included in the study. This included those who sought voluntary HIV testing with or without symptoms, who were suspected of having HIV/AIDS on clinical ground such as unexplained fever, weight loss, persistent diarrhea and/or an AIDS defining illness and those involved in high risk behavior like extramarital sex, multiple sexual partners, truck drivers and injection drug users. Those with missing data was excluded from the study but no such case was found. All the individuals who visited the HIV Clinic were initially screened for differential detection of HIV 1 and HIV 2 antibodies using a highly sensitive, visual and rapid immunoassay (HIV TRISPOT manufactured by J. MITRA and Co. Ltd. New Delhi, India). Patients testing positive in the initial screening test for either HIV 1 or HIV 2 were subjected to two different confirmatory ELISA tests using two different types of antigens, as recommended by the National AIDS Control Organization (Enzaids HIV 1 and 2 ELISA test kits manufactured by Span Diagnostics, Surat, India). Patients testing positive in the screening test as well as the two different Elisa's were labelled as HIV infected individuals. This group of confirmed HIV positive patients was studied for their demographic profile including age, sex, background, education level, occupation, religion, marital status, sexual history and history of travel outside Kashmir. Clinical spectrum including symptoms and signs, opportunistic infections and CD4 count at initial presentation was also studied. All patient information was kept anonymous and confidential. CD4 counts were done by FACS generated report using B.D Tri test antibodies and True count, tubes (CD3, CD4, CD8) with three color staining procedure following lyse no wash protocol. Opportunistic infections like Tuberculosis were diagnosed by using a combination of imaging, Ziehl-Neelsen staining and conventional Mycobacterial cultures. Cryptococcal meningitis was ruled out by using CSF for India ink and fungal culture. All sera were screened

for Syphilis, Hepatitis B and toxoplasmosis. Other relevant investigations including CT head, CSF examination, complete blood counts, kidney function and liver function tests were done as and when dictated by clinical presentation of the patient. Symptomatic and asymptomatic HIV infected patients with a CD4 count < 350/µl were put on HAART as recommended.

Results

Out of a total of 50220 patients tested for HIV 1 and/or HIV 2 infection, 173 were detected seropositive for HIV 1. The mean age of presentation was 30.04 ± 7.1 years. Socio-demographic characteristics of the study participants is shown in table 1 which shows that the main age group affected with HIV/AIDS was 21-30 years (39.8%) followed by 31-40 years (35.8%). The overall male: female ratio in the current study is 2.9:1. Among the seropositive patients, 138 (79.7 %) were married, 70(40.4%) were security personnel's, 123 (71.09%) were from non-local population and 150 (86.7%) belonged to rural areas. Table 1

Table 2 shows the commonest mode of transmission and high risk behaviors among the study population who were detected sero-positive after test results. The commonest mode of transmission was heterosexual route 126 (72.8%); patients who had spouse infected accounted for 32(18.4%) of cases while blood transfusion accounted for 7(0.04%).

Majority of the participants 91(52.6%) who were detected positive for HIV/AIDS were having CD4 count at presentation between 150-250/µl. Eight (0.04%) were having CD4 count <50/µl and 26 (15.02%) had CD4 count >300/µl (Table 3).

Table 4 shows the common symptoms among HIV/AIDS seropositive patients on detection of positive test results and included fever, weight loss and lymphadenopathy which accounted for 75.1%, 69.3% and 63.5% respectively. Furthermore, sero-positive patients also reported to have

134 secondary opportunistic infections among which pulmonary tuberculosis and oropharyngeal
135 candidiasis were more predominant accounting for 34.6% and 28.9% respectively (Table-4).

136 **Table 1: Socio-Demographic profile of participants tested positive for HIV**

Variable	**Gender of Participants**			**(n)**
Age in years	**Male**	**Female**	**Transgender**	**Total**
< 20	6	1	0	7
21-30	38	29	2	69
31-40	54	8	0	62
41-50	25	4	0	29
>50	5	1	0	6
Occupation				
Farmer	2	0	0	2
Laborer	11	0	0	11
Businessman	20	0	0	20
Housewife	25	0	0	25
Driver	4	0	0	4
Student	4	0	0	4
Govt. Employee	3	0	0	3
Security personnel	70	0	0	70
Unemployed	4	30	0	34
Marital status				
Married	102	36	0	138
Unmarried	28	5	0	33
Widow	0	2	0	2
Location				
Non Locals	80	41	2	123
Locals	45	5	0	50
Dwelling				
Urban	15	8	0	23
Rural	120	30	0	150

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138 **Table 2: High risk behavior among HIV Positive patients**

Characteristics	**Male**	**Female**	**Transgender**	**Total**
Heterosexual	119	7	0	126
Shaving(barber)	2	0	0	2
Homosexual men	2	0	2	4
Blood transfusion	3	4	0	7
Spouse infected	1	31	0	32

Intravenous drug abusers	1	1	0	2
Total	128	43	2	173

Table 3: CD4 count at presentation among HIV positive patients

CD4 count	Male	Female	Transgender	Total
< 50	7	1	0	8
51-100	17	14	0	31
101-150	5	2	0	7
151-200	38	14	1	53
201-250	36	1	1	38
251-300	10	0	0	10
>300	15	11	0	26
Total	**128**	**43**	**2**	**173**

Table 4: Clinical presentation and Opportunistic Infections among the HIV/AIDS seropositive patients.

Symptoms	n (%)	Opportunistic Infection	n (%)
Fever	130(75.1)	Tuberculosis	60(34.6)
Weight Loss	120(69.3)	Oropharyngeal Candidiasis	50(28.9)
Cough	100(57.8)	Herpes zoster	20(11.5)
Blurring of vision	80(46.2)	Cryptococcal meningitis	10(5.7)
Lymphadenopathy	110(63.5)	CNS toxoplasmosis	4(2.3)
Diarrhea	70(40.4)	-	-
Altered sensorium	30(17.3)	-	-
Asymptomatic	12(6.9)	-	-

Discussion

HIV/AIDS generally affects the economically productive and younger age group, the present study corroborates this. The mean age of patients was 30 ± 7 years and 85.2% of the patients were in the age group 25-44 years. These findings are similar to a study conducted in Jammu where the highest incidence of HIV/AIDS was found in the age group of 31-40 years (48.58%). [5] Another study in Aligarh reported the mean age of HIV/AIDS patients as 29.68 ± 11.92 years with 68.7% of the patients in the age group of 20-39 years. [6] A study in Nigeria reported the mean age of patients as 35.6 years and 75% of the patients were in the age group of 20-49 years.[7]

Majority (80%) of HIV/AIDS patients were residing in rural areas. These findings are consistent with the settings of the state where the majority of the population is primarily rural.

Two studies in Jammu and Aligarh reported 74.59% and 77.1% of the patients as married compared to 61% in our study.[5,6] Also, a study in North India reported 76.8% of the patients as married.[8]

Also alarming in this study was that females comprising housewives (14.4%) belonged to age group 20-29 yrs were among local population and this finding corroborated with report in study on HIV in India, that this infection is no longer restricted to sex workers or intravenous drug users (IVDU) or truck drivers.[1] However, the infection has spread into general population and rates of infection are reported to be increasing among monogamous women through unprotected sex with infected partners.[9,10]

Heterosexual route is the most common mode of transmission worldwide. As such in this study 58.9% of seropositive cases accounted for this commonest mode of transmission which is supported by various studies in India as well as other parts of world.[1,7,11,12] The homosexual

mode of transmission of 1.73 % was of concern in our place of setting as it can highlight spread from high risk to general population via bridge population.

Reshmi et al reported 7.7% of seropositive for HIV/Aids in homosexuals while Khopkar et al reported 6.7% in MSM.[10,13] Blood transfusion and vertical transmission comprised of 2.3% each which was comparable to a perspective on the current status of HIV epidemic in India by Solomon et al.[9] Sircar et al and Singh S et al reported 12.1% and 5.7% seropositivity through blood transfusion which is almost (4.04%) equal to our study. [14,15] In our place of study, blood transfusion is given by kith and kin of a patient and no professional donors are used because of the awareness of HIV/Aids among general population. Also HIV testing of blood and blood products is done stringently to prevent spread through infected blood.

Fever, weight loss were the commonest symptoms seen in these patients and at least more than one of these symptoms were present in all the seropositive patients. These commonest symptoms finding matched with various studies done in India.[5,13,14,16,17,18] Fever in 75.6% seropositive cases being as commonest presenting feature is consistent with studies by Kothari et al (70%), Chakarvorty et al (70.6%), and Sharma et al (71%).[19,20,21]

Tuberculosis (TB) has been reported as the most common (34%) opportunistic infection in patients of HIV/AIDS in our study. A study in North India reported 39.9% of the patients to be suffering from TB.[21]

Majority of our patients (88.4%) presented with an initial CD4 count of less than 300/µl consistent with many studies reported from India and the rest of the world.[21] This could be attributed to late presentation primarily due to patient ignorance and lack of suspicion at primary health care level. While 18 patients died soon after being diagnosed, 43 were put on HAART.

However 57 were lost to follow up who being security personnel got transferred to other parts of India. The remaining 55 patients on HAART who were on regular follow up during this period, not only improved their CD4 count but also showed marked clinical improvement.

Conclusion: The clinical and demographic profile of HIV/AIDS patients of Kashmir by and large matches other parts of India, however much larger studies are needed to find out newer dimensions. Kashmir no longer stands as a low risk area, a geographically and socially isolated region a decade earlier, is rapidly joining the race of globalization with the rest of the world and as a consequence not only harvesting the benefits but unfortunately paying the price too. HIV/AIDS remains no longer an alien to this land with people being increasingly detected HIV positive. Kashmir is likely to witness an alarming rise in HIV/AIDS in the near future as our study represents just the tip of an iceberg. Masses need to be aware, clinicians more suspicious and authorities more determined if HIV/AIDS spread is to be effectively controlled.

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