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Clinical Profile of HIV Sero-Positives Attending ICTC Centre in District Aligarh, Uttar Pradesh: A Descriptive Analysis

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Abstract

Background: HIV seems to be a major public health challenges for all over the world especially in developing countries like India.

Objective: To study the sociodemographic profile of people living with HIV/AIDS attending a standalone ICTC centre at Jawahar Lal Nehru Medical College and Hospital Aligarh in Uttar Pradesh.

Materials and Methods: A record-based study was carried out among the HIV-positive patients who were attending the ICTC center at Jawahar Lal Nehru Medical College, AMU Aligarh.

Result: Prevalence of HIV infection was found to be 5.04% in and around Aligarh region. Males were more commonly affected than females with a ratio of 1.6:1. Majority of HIV positive patients (35.82%) belonged to 25-34 years of age group. Most common clinical presentation was fever (46.9%) among HIV positive patients followed by weight loss (36.88%) and diarrhoea (32.55%). Sexual transmission (61.19%) was the most common route of HIV transmission seen in our study. Most of the patients had a baseline CD4 count level below 200/µl.

Conclusion: The majority of HIV/AIDS-affected persons were in the economically productive age group. The educational level, occupation, socioeconomic status, marital status, and affected region were found to be associated. Heterosexual is the commonest mode of transmission. Most of the patients reported at an early phase of disease.

Keywords: Acquired Immune Deficiency Syndrome (AIDS) • Antiretroviral Treatment (ART) • Human Immunodeficiency Virus (HIV) • CD4 count • Standalone ICTC • Social Stigma

Introduction

HIV remains a global infection worldwide majorly affecting the Asian and African countries. It is a leading public health challenge in developing countries like India.

According to UNAIDS DATA 2018, 36.9 million (31.1-43.9 million) people are living with HIV globally with adults 35.1 million (29.6-41.7 million) and children (<15 years) 1.8 million (1.3 million-2.4 million). A total of 1.8 million (1.4-2.4 million) were newly infected with HIV with adults 1.6 million (1.3-2.1 million) and children (< 15years) 180 000 (110 000-260 000). Nearly 940 000 (670 000-1.3 million) deaths were recorded globally in the year 2017. Conjunct Asia and the Pacific data however show a decline of 14% in new HIV infections during 2010-2017 and 39% decline in annual deaths related to AIDS and associated illnesses. The report also says that the region has exhibited tremendous reduction in incidence: prevalence ration of 0.05 (0.04-0.08) in 2017 consistently approaching an epidemic transition benchmark of 0.03 [1].

In India, HIV Estimation Technical report 2017 displays adult HIV prevalence as 0.22% (Male 0.30% and Female-0.22%) which has continuously declined from 0.38% in 2001-03 to present value of 0.22%. Prevalence of HIV was highest in Mizoram at 2.04% among all states and Union Territories in India followed by Manipur at 1.43% and Nagaland at 1.15%. Collectively 3.30 lakh PLHIV are found in India with Maharashtra at the top of the list contributing nearly 15% of total PLHIV. Andhra Pradesh and Telangana jointly contribute highest estimated PLHIVs whereas Uttar Pradesh is one of those eight states which account for three fourth of total estimated PLHIV in India. UP has been estimated to have 1.34 lakhs PLHIV according to the report [2].

Currently 79% Indians know their HIV status. In India, according to NACO 2017 report national adult (15-49 years) HIV prevalence is estimated at 0.22% (0.16-0.30%) among whom 0.25% were males and 0.19% were females. According to the report prevalence among female sex workers was 2.2%, among MSM 4.3% while IVD users the prevalence was 9.9%. HIV prevalence in Uttar Pradesh state was 0.22% (NACO Annual report 2016-2017). According NACO 16-17 report HIV positivity seems higher amongst IDUs, TGs and Truckers which seems consistent with previous year results [3].

Demonstration of antibodies in bloodstream remains the mainstay in HIV testing which can be done through ELISA test, rapid test kits and western blot test [4]. Both screening and confirmatory tests can be covered under these test names. Detection of anti-HIV antibodies in whole blood, serum or plasma is the central component of HIV diagnosis. Specific test kits are also available for urine and saliva testing. Since HIV virus exists in two different serological forms viz HIV-1 and HIV-2, differentiation must be done between the two as treatment is different for both. As per NACO guidelines rapid test kits are used to detect >99.5% HIV-infected individuals and a <2% false positives. The

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serological test kits are divided in to four generations based on what type of antigen is being tested. Rapid test kits for screening are available as Dot Blot Assay (Immunoconcentration), Agglutination assay, Immunochromatographic assay and Dipstick and comb assay based on Enzyme Immune Assay (EIA).

Materials and Methods

The study was carried out at a standalone ICTC centre under the Department of Microbiology in a medical college of Aligarh district, Uttar Pradesh wherein all reporting subjects were consecutively enrolled for HIV testing. The study setting serves as a referral centre for the nearby cities in and around Aligarh, catering to an overall population of nearly 37 lakh people.

The study was approved by Institutional Ethics Committee. Detailed information on socioeconomic status, personal, sexual and clinical manifestations was also collected.

All subjects were tested for HIV by three EIA (Enzyme Immune Assay) based rapid tests namely Combaids, Meriscreen and Trispot [4]. Data related to baseline CD4 count and 'outcome after one year' of enrolment were also extracted. The period of study was two years from November 2015 to October 2017.

Results and Discussion

The results of the findings from the study are presented under two headings. First, sociodemographic profile (Table 1) and second, clinical profile of HIV seropositive study participants (Table 2).

During the study period, total 9293 people reported to the study setting for HIV testing out of which 469 were tested positive indicating a prevalence of HIV infection in and around Aligarh region to be 5.04%. This finding was slightly higher than another 5-year study conducted at ICTC, LHMC, New Delhi in which the prevalence of HIV was around 3.78% and 2.44% [5,6]. The present study finding for HIV prevalence was lower than 11.3% prevalence [7]. This high prevalence may be attributed to either lesser awareness about the disease, higher social stigma associated and non-availability of Anti-retroviral Therapy (ART).

Table 1. Socio-demographic factors of HIV seropositive study participants (N=469).

Age in years	n	%
<15	30	6.39
15-24	76	16.2
25-34	168	35.82
35-49	161	34.32
≥ 50	34	7.24
Gender		
Male	289	61.62
Female	180	38.38
Literacy status		
Illiterate	194	41.36
Primary School	45	9.59
Secondary School	212	45.2
College and Above	18	3.84
Occupation		
Housewife	151	32.2
Non-agricultural labour	90	19.19
Agricultural labour	56	11.94
Businessman (small/large/small shop/self-employed)	37	7.89
Service (Govt./Private)	35	7.46
Student	22	4.69
Unemployed/Retired	20	4.26
Truck driver/helper	21	4.48
Local Transport worker (auto driver)	2	0.43
Domestic servant	5	1.07
Others	30	6.4
Marital status		
Married	236	50.31
Single	55	11.72
Divorced	10	2.13
Widowed	33	7.03
Unmarried	135	28.78

Table 2. Clinical profile of HIV seropositive cases (N=469).

CD4 count (N=289)	n	%
(>500/µl)	20	6.92
(350-500/µl)	42	14.53
(200-350/ µl)	71	24.56
(<200/ µl)	156	53.97
Associated clinical manifestations		
Weight Loss	173	36.88
Diarrhoea	153	32.55
Fever	220	46.9
Cough	87	18.6
Oral Ulcer	129	25.58
Dyspnea	125	26.65
Asthenia& Malaise	141	30.23
Headache	110	23.45
Hemoptysis	95	20.46
Reported route of transmission		
Sexual Transmission	287	61.19
Blood Transfusion	57	12.15
Vertical Transmission	16	3.41
Infected Syringes & Needles	32	6.82
Unknown /Others	77	16.41
Sero-status of spouse		
Reactive	146	61.86
Non-reactive	35	14.83
Unknown	10	4.23
Non-applicable	45	19.06
Outcome after one year		
Alive	443	94.45
Death	26	5.54

In our study, 35.82% of study participants were in the age group of 25 to 34 years (Table 1), similar findings were found in 35.4%, 41.32% and 40.82% in their study found more than 40% percent HIV positive individuals between 25-34 years age group [5-7]. This section of the population is more affected because they are sexually more active and have passed through a critical period of adolescence in which they have experienced significant physical and emotional changes. Exploring and experimenting in life along with lack of knowledge regarding various contraceptive methods heavily contributes to HIV prevalence in this age group.

A male predominance (61.62%) in HIV positive population over female was observed with a male to female ratio of 1.6:1 (Table 1) which was lower than 3.09:1 [7]. Most of the studies conducted at various parts of the country show male preponderance. Another study showed that out of total 167 HIV positive patients, 108 (64.67%) were males and 59 (35.33%) were females, which projects a male preponderance in most of the previous studies [5-7]. The male preponderance can be attributed to mainly two reasons, firstly, females are under reported because they fear neglect and rejection in existing Indian milieu which can magnify their extent of facing social stigma ultimately leading to loss of family support and financial loss. Secondly, more males are involved in overt sexual activity either with their male or female partners leading to more exposure to the virus.

Overall 41.36% of the study participants were illiterate however just

below 4% of the individuals were either graduate or above (Table 1) which shows education has an impact on HIV status and poor literacy status was associated with high rate of HIV positivity because of low level of knowledge and indulgence into high risk behaviour.

In the present study, if housewives (32.20%) are set aside in numbers then most of the individuals belong to labour class both agricultural (11.94%) and non-agricultural (19.19%) i.e., around 31% (Table 1) that corresponds to the findings where 32% were labourers, while another study reported 36.8% were working as manual labourers [8,9]. Similar study carried out in North India in 2004 showed 39.6% labourers who were HIV positive [10]. In another study, majority of the HIV positive patients were labourers i.e., (24.19%) [11]. Labourers earn their tough livelihood which requires long periods of stay away from the family which can predispose them for promiscuous behaviour. This particular factor appears to be an important reason for the drivers to be mostly affected by the HIV epidemic.

When marital status of the study participants is considered, in the current study 50.31% individuals were married whereas higher percentage was found where 75.50% were married [8]. It can be estimated that majority of participants got infected to sexually active married couple & females got infection from their husband.

In the present study baseline CD4 count was also taken into account. Out of total records seen, 289 HIV positive patients' baseline CD4 was available out of which only 20 patients (6.92%) had more than 500/µl of initial CD4 count. An interestingly higher number 53.97% of individuals had initial CD4 count <200/µl (Table 2). The level of CD4 count acts as a benchmark indicator of body's immune system. Previously, eligibility for receiving antiretroviral therapy was based on initial CD4 count of the patient. Until 2008 it was 200 cells/µl, 250 cells/µl in 2009-2011, 350 cell/µl in 2012-2015 and 500 cells/µl in 2016. However, in 2017 'Treat All Policy' was introduced regardless of initial CD4 count level [2]. In patients, who do not receive ART, sooner or later their CD4 cells die out which eventually makes them susceptible to wide range of opportunistic infections (at CD4 <200 cells/µl).

Fever (46.9%) was the most common presentation followed by weight loss (36.88%), diarrhoea (32.55%), malaise and asthenia (30.23%), dysponea (26.65), oral ulcer (25.58%) and cough (18.60%) (Table 2). This might be due to disease pathogenesis itself and other associated risk factors. Fever in 78.9% seropositive cases being as commonest presenting feature are consistent with 70%, 70.6% and 71% [12-14]. Weight loss was the second most common presenting feature (35.1%) which was consistent with study [15]. Similarly, chronic diarrhoea (35.5%) as the third most common presentation matched with Kaur et al. [16].

Within HRG group, the incidence of HIV was higher among Intravenous Drug Users (IDU) than FSW or MSM. [2] Whereas, most common route of transmission for HIV infection was sexual route in present study i.e., 61.19% followed by 12.15% via blood transfusion (Table 2). The similar findings with 70.1% patients having HIV transmission through sexual route [5]. According to Vyas et al. the most common mode of transmission is also the heterosexual route of transmission in Jaipur with the rate of upto 81.6% [17]. According to Lal et al. the same rate is 84% in India [18].

Out of total 469, less than 2/3rd of the subjects (61.86%) had sero-reactive spouse. In our study, we also found that most of the spouse tested was got reactive (61.86%) for HIV positive. This fact can also be supported by another study where 50.50% of study individuals had seropositive spouse [8]. Outcome of all the study subjects was inquired at the end of one year. Around 5.54% of the study participants lost their lives at the end of first year which can be attributed to factors associated with various opportunistic infections like Systemic Inflammatory Response Syndrome (SIRS) etc.

Conclusion

Majority of seropositive cases in our study belongs to lower socio-economic group i.e., labour group and in male subjects which increases the financial burden to the society. Female patients were underreported because of fear of being discriminated in the society and this problem should be addressed by increasing awareness programmes. The labourer groups found to be commonly affected group considering as a linkage between high risk group and general population. As heterosexual route seems to be commonest mode of transmission, our government programme should be more focused towards safe sex practices. Low incidence of HIV infection among graduate student in our study shows the importance of educational status. Maximum patients in our study visited the ICTC centre at level of CD4 count level below 200 µl which shows need of much more awareness about early health seeking behaviour among high risk group person as well in general populations. Various socio-demographic factors were observed in our study which can helps in better understanding their impact on controlling the infection and framing the programmes better running by government agency.

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