



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2018; 4(4): 401-404
www.allresearchjournal.com
Received: 13-02-2018
Accepted: 14-03-2018

Dr. Anvesh Singh Parmar
Senior Resident, Department of Medicine, GR Medical College, Gwalior, Madhya Pradesh, India

Dr. Praveen Thakurai
Ex-Resident, Department of Medicine, GR Medical College, Gwalior, Madhya Pradesh, India

Clinical and epidemiological profile of people living with HIV/AIDS: A prospective study from Gwalior region Madhya Pradesh

Dr. Anvesh Singh Parmar and Dr. Praveen Thakurai

Abstract

Background: HIV infection represents a major public health problem for both developing and developed countries as its prevalence is rising worldwide. Spectrum of clinical presentation of HIV can vary with geographical distribution, socioeconomic and cultural environment.

Aims and Objectives: To evaluate the clinical and epidemiological profile of HIV positive patients in the study cohort.

Materials and Methods: One hundred and fifteen HIV positive patients were studied at the ART Center Medicine Department, GR Medical College, Gwalior between Aug. 2014 to Nov. 2015. Detailed history regarding the socio-demography and epidemiological aspects of the disease (HIV infection) were recorded.

Results: Most common age group was 31-40 years (42.60%). HIV infection was more common in male population (68.69%). Most of the patients were manual laborers (48.69%), belong to urban population (74.78%) and belong to lower income group (59.13%). Majority of the patients (38.26%) had primary education. Most of the HIV patients were married (88.69%). Most of the patients (90.43%) acquired the infection through hetero-sexual route of transmission, followed by (1.73%) through homosexual route.

Conclusion: Most of our participants were male, belonged to the sexually active and economically productive age group and were from low socioeconomic status coming from urban area.

Keywords: HIV infection, route of transmission, ART center, HIV seropositivity

Introduction

Recent reports have suggested that an estimated 34 million people were living with HIV (PLHA) worldwide^[1]. As per the NACO annual report 2012-13, there are an estimated 2.09 million people living with HIV/AIDS in India with an adult prevalence of 0.27 percent^[2]. India's HIV epidemic, at national level, is concentrated amongst female sex workers, men who have sex with men and injecting drug users. The adult HIV prevalence was estimated at 0.25% for women and 0.36% for men^[2].

Amongst intervention strategies applied to curtail the HIV epidemic, reduction of viral load by efficient antiretroviral therapy has been considered to be a powerful tool. In India, an introduction of inexpensive and generic antiretroviral therapy (ART) has been initiated National AIDS Control Organization (NACO)^[3].

Now it is almost three decades since the HIV/AIDS epidemic is evolved. The hospitalization has markedly decreased in HIV-infected who have access to ART^[4]. Increased access to ART, even in rural area, care and support programs, community mobilizations activities has changed the face of epidemic. The prevalence of HIV in India is almost stagnant, and fewer new infections are coming up. More and more people with HIV are living longer due to increased access to care, support and treatment programs^[4].

There is also the likely possibility that the clinical profile and reason for hospital visits may have been changed over last decade due to all these developments. However, very few studies have been conducted recently that studied the clinical profile of people living with HIV^[5, 6]. The present study is conducted to find out sociodemographic characteristics, clinical profile of people living with HIV/AIDS attending the tertiary care hospital located in central India. The study will add to our understanding if there is any change in the clinical presentation and reason for hospital visits for people with HIV from rural area.

Correspondence
Dr. Praveen Thakurai
Ex-Resident, Department of Medicine, GR Medical College, Gwalior, Madhya Pradesh, India

Materials and Methods

Present study was performed on 115 HIV positive patients attending the ART Center Medicine Department, GR Medical College, Gwalior between Aug. 2014 to Nov. 2015. Institutional Ethics Committee approval and written informed consent was obtained from each patient before starting the study.

Diagnosis of HIV seropositivity was done using Bioline HIV 1/2 Rapid Test Procedure, COMBAIDS HIV 1+2 Immunodot Test and Qualpro HIV-Qualitative Sandwich Immunoassay.

In all selected patients, detailed history regarding the epidemiological aspects of the disease (HIV infection) was obtained. All the collected data was analyzed using IBM SPSS ver.20 software. Cross tabulation and frequency distribution was used to prepare tables. Data is expressed as percentage and mean \pm SD.

Results

Out of the total 115 cases, majority of the cases were in the age group 31-40 years (49, 42.60%) followed by 21-30 years (36, 31.30%) and 41-50 years (24, 20.86%). Five patients (4.34%) were aged < 20 years and 1 patient (0.86%) were aged > 50 years in the study group.

Out of 115 cases, males were more commonly associated with HIV infection (79, 68.69%) than females. Male to female ratio in the present study was 2.1:1.

Out of 115 cases, 56 (48.69%) patients were manual

laborers, followed by 33 (28.69%) patients who were housewives, 12 (10.43%) patients were doing clerical jobs, 13 (11.30%) were drivers and 1 (0.86%) was a commercial sex worker.

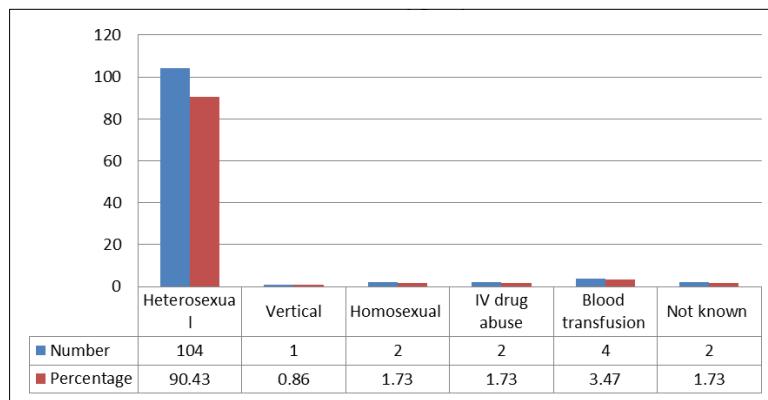
Majority of the patients were from urban population (74.78%) followed by rural population (25.22%). Out of the 115 patients majority of the patients were from the lower income group (68, 59.13%) followed by medium income group (47, 40.86%) and no patients was from high income group.

Majority of the patients (44, 38.26%) had primary education followed by 20(17.39%) patients who were educated up to mid school, 34(29.56%) patients were illiterate.

Out of the 115 patients, 102 (88.69%) were married, 7 (6.08%) patients were unmarried, whereas 6 (5.21%) were widow/widowers.

Table 1: Showing Spouse HIV status in the study group

Parameters	N	%
Spouse HIV status(n=115)	Positive	68
	Negative	42
	Not tested	5
Spouse HIV status of male patients(n=85)	Positive	48
	Negative	29
	Not tested	8
Spouse HIV status of female patients (n=40)	Positive	15
	Negative	11
	Not tested	4



Graph 1: Showing possible routes of transmission of HIV infection in the study group

Discussion

The present study was conducted to understand the social determinants and clinical characteristics of the HIV positive patients attending a tertiary care hospital in Gwalior, Madhya Pradesh.

The incidence of HIV positive patients attending the outpatient department in our study was 0.72% which is lower as comparison to 3.24% in the study done by Jindal *et al*.⁷ The reduced incidence of HIV patients may be due to the demographic variation and probably due to lesser number of patients with high risk behavior in the region. It may also be dependent on the less health seeking behavior of the HIV positive patients due to fear of social stigma in the current study.

The highest incidence of HIV positive patients was in the age group of 21-40 years (73.90%) which is similar to the study done by Sen *et al* (73.7%).^[8] The study done by Zancanaro *et al*,^[9] (51.45%) and Jing *et al*,^[10] (66.3%) also reported 21-40 years as the most common age group. This shows that majority of the patients affected by HIV belong

to the most sexually active group of the population and also it is major part of the working population. Baig *et al*^[11] in Jaipur, Joge *et al*,^[12] in Maharashtra and Bhandarkar *et al*,^[13] in Andhra Pradesh also observed that productive age group was most commonly involved.

In present study, male preponderance was observed (68.69%) with male to female ratio of 2.1:1. This ratio goes with the study done by Kumarswamy *et al*,^[14] (2.4:1) and Sen *et al*,^[8] (1.6:1) with marginal difference. But Gaidhan *et al* in a similar study on 225 participants reported female preponderance.^[15] The variation in sex ratio may be due to the fact that men being more exposed to high risk behavior in comparison to females. The incidence of infection with HIV in females is increasing gradually as the changing life style trends are making the women more vulnerable to HIV infection.

Education and occupation are important determinants for spread of HIV/AIDS. Illiterate people are less likely to have adequate knowledge to protect themselves from STD's including HIV/AIDS. Migration for work takes people away

from the social environment of their families and community. This can lead to an increased likelihood to engage in risky behavior^[16]. Concerted efforts are needed to address the vulnerabilities of the large migrant population. The mobility of workers is likely a major factor contributing to HIV transmission by connecting high-risk sexual networks. The incidence of HIV infection in the unskilled workers in the present study (48.69%) is similar to that of Jindal *et al.*^[7] (47%). Housewives make up for 28.6% of the patients in the present study which is lower in comparison to 47.4% in the study done by Jindal *et al.*^[7]. Drivers are considered to be a higher risk of developing HIV infection in the present study but in Jindal *et al.*^[7] 5.3% patients were drivers which was lower as compared to present study. Joge *et al.*^[12] and Bhandarkar *et al.*^[13] reported that 51% and 42% participants respectively were laborers. It can be concluded that people from all walks of life are susceptible to HIV infection; it is not exclusive one group of population. Gaidhan *et al* in a similar study reported that most of the patients were laborers (41.78%)^[15].

The results of the present study (74.7%) and Jindal *et al.*^[7] (71%) study revealed that HIV infection is spreading rapidly even among the rural areas of India. The factors responsible for this are probably illiteracy, lack of awareness about the disease and delay in diagnosis because of inadequate laboratory facilities in rural areas when compared to urban areas.

A total 29.5% of the patients in the present study group were illiterate in comparison to 52.6% in the study done by Jindal *et al.*^[7]. Majority of patients (38.2%) in this study have received primary education, in comparison to 18.4% in the study done by Jindal *et al.*^[7]. This indicates that formal education is not sufficient but knowledge of STDs and HIV infection is essential for the control of HIV and the paradoxical incidence in the present study on comparing with Jindal *et al.*^[7] study clearly shows an increase in promiscuity of the population irrespective of literacy. In study by Gaidhan *et al*, literacy rate was very high i.e. 95.56% with most of them i.e. 71.55% being educated up to middle school^[15]. Since HIV is not a curable disease, it is very important to prevent its spread by educating the people and increasing awareness regarding various aspects of diseases especially about modes of transmission and means to prevent transmission.

In present study 88.69% of the patients were married, which is higher (63.15%) then the study done by Jindal *et al*^[7] and Jing *et al*^[10] (46.2%). Gaidhan *et al* also reported that most participants were married (85.78%)^[15]. The incidence of unmarried patients was 6.08% in the present study when compared to 51.0% in Jing *et al*, (Jing W 1999) and 18.4% in Jindal *et al*^[5]. This decreased incidence was probably due to awareness of HIV among younger generation in the present study. About 5 % of the patients in our study group were either widow/widower or separated from their spouses in comparison to 18.4% in the study done by Jindal *et al.*^[7] and 2.8% in the study done by Jing *et al*,^[10]. This discrepancy in the route of transmission is mainly because females are usually infected through heterosexual contact with their husbands and females also indulge in extramarital sexual relationship like men.

In the present study, among the spouses of HIV positive individuals 59.13% were positive in comparison to 47.2% in Jindal *et al.*^[7] study. 36.52% of the spouses were negative as opposed to only 13.9% in Jindal *et al.*^[7]. The HIV status

of 4.35% of the patient's spouses was not known which was 38.9% in the Jindal *et al.*^[7] study. Majority of the patients in our study were male in comparison to the female predominance in Jindal *et al.*^[7] study. This difference between the two studies can be possibly due to good counseling as a result of which transmission to partner has not occurred.

Heterosexual mode is the most common route of transmission of HIV infection. In 90.43% patients, heterosexual route was the possible route of infection, which is almost similar to 85.6% in the study by Jing *et al* and 86.8% in the Jindal *et al.*^[7] study. Homosexuality is more common in western population. Thus the incidence was more in Jing *et al* study (5.8%). The study done by Jindal *et al*^[7] had no homosexual patients. Homosexuality is prevailing in lesser extent in India as shown in the present study. Similar findings can be seen in pattern of intravenous drug abusers, that is more prevalent in western studies (6.7%)^[10] and nil in Jindal *et al.*^[7]. Regarding vertical transmission, there were no cases seen in Jing *et al* study, whereas Jindal *et al* study showed 5.3% and 0.86% in the present study. Although blood transfusion is one of the known modes of transmission of HIV infection, these cases were not found in Jindal *et al.*^[7] and Jing *et al*,^[10] studies. In the present study, 3.47% patient acquired HIV through blood transmission. The route of transmission of HIV could not be determined in 1.73% of the patients in present study, which is lower when compared to the study by Jing *et al*,^[10] (1.9%) and Jindal *et al.*^[7] (7.9%). This is probably due to inadequate sexual history given by the patients and denial of sexual promiscuity by them and also could be attributed to their ignorance about the modes of spread of HIV. Sexual mode is the most common route of transmission of HIV infection. Therefore proper information regarding safe sexual practices should be disseminated, starting from adolescents and young adults as they are the most vulnerable part of population.

Conclusion

Present study data revealed that most of the HIV patients were male belonging to productive age group, were laborers and housewives. Most of them were from the urban area. HIV was more common among literates, showing that formal education is not sufficient for creating awareness among people regarding modes of transmission of STDs. Majority of the patients were married and most of the spouses were positive. Sexual transmission was the major route of transmission of infection of which heterosexual being the commonest.

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