ORIGINAL RESEARCH

Cross sectional study to find of burden of HIV positive client from ICTC centre of a tertiary care Hospital

[1]Dr. Anita Mutha, [2]Dr. Manish Purohit, Ashish Kumar Joshi

[1]Professor and Head, Department of Microbiology, MGMMC, Indore, Madhya Pradesh, India
[2]Associate Professor, Department of Microbiology, MGMMC, Indore, Madhya Pradesh, India

Corresponding Author
Dr. Anita Mutha
Professor and Head, Department of Microbiology, MGMMC, Indore, Madhya Pradesh, India

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Abstract
A Tertiary Care Hospital Study in Madhya Pradesh delves into the evolving landscape of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) in India, exploring patterns, prevalence, and associated risk factors. Despite a 66% reduction in new infections since 2000, India grapples with the second-highest global HIV burden. This study highlight burden of HIV in our region among different age group associated with sexual practices and high risc behavior responsible for transmission of HIV. A significant no of HIV positives were found in this study 490 in different groups, highest number of positives were from Heterosexual group of individuals.
Keywords: HIV, ICTC, routes of transmission

Introduction

In India, the Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) were first reported in 1986. There has been 66% reduction in new infections since 2000 and 54% reduction in AIDS-related deaths since 2007 [1]. The annual new HIV infections in India have declined by 48% against the global average of 31% (the baseline year of 2010). The annual AIDS-related mortalities have declined by 82% against the global average of 47% (the baseline year of 2010). The HIV prevalence in India continues to be low with an adult HIV prevalence of 0.22%.The annual number of new infections among adults has declined by 48% since2010, but still has a long way to go to achieve a 90% decline by 2030.National AIDS and STD Control Program (NACP) was launched in 1992 [2].

Even with low prevalence, India has the second highest HIV burden globally with an estimated 23.19 lakh PLHIV in 2020. In view of this burden, HIV/AIDS continues to be a public health challenge in India [3].

Dr. Kabita Choudhury *et al*.conducted a study at ICTC of a tertiary care hospital in south eastern region of Assam and concluded that out of the 18,763. ClientstestedintheSpanofthis3years, 774(4.12%; 3.61%in2013,4.61% in 2013 & 4.36% in 2014) were positive for HIV. Prevalence in male clients amounted to 2.824% and in female clients was 1.3%. Majority of the sero positive clients fell in the age group of 15-45 years (80%), precisely in 30-45years (47.67%), of which 69% were married males and & 76% married females. The predominant occupation were drivers, skilled/unskilled labour (range10% to16%), and housewives (23%). 88.5% of them exhibited heterosexual behaviour, parent to child transmission was 5.37%, 3.58% were IDU. Most had only primary level education (70%) or were illiterate (18.63%) [4].

Aim: Aim of our study was to find out the proportion of HIV positivity among heterosexual population.

Methodology

Inclusion Criteria

All individuals visit to our ICTC centre during study period and giving written consent after pre-test councelling.

This was a prospective cross-sectional study conducted in the Department of Microbiology of a tertiary care hospital over a period of 1 year from April 2019 to March 2020.

All individuals attended our ICTC were tested for HIV antibody as per the Strategy IIIofNACO. According to this strategy all samples were tested

with one rapid test.If test result was Non-reactive then the sample was reported as Negative.If test result was Reactive then 2nd and 3rd test was performedby different system (different antigen/ different principle/ different generation kit). If result was Reactive with second & third antigen test then it was reported as Positive for HIV antibody. If result was Non-reactive with second antigen test & Reactive with third antigen test then sample was reported as Indeterminate and the individual was called for follow up after 45 days for repeat testing. Complete Clinico demographic details and his/her history of sexual practices was collected.

Results and Discussion

A cross-sectional study to detect proportion of HIV infection, and to detect various risk factors among these patients from a tertiary health care centre was conducted in the Department of Microbiology at MGM Medical College, Indore.

A total of 4592 subjects were tested for HIV infection during the study period among which 490 HIV infection positive subjects were included in the study. Mean age of clients in our study was 38.2 yrs. keeping in mind objectives of the study, statistical analysis was carried out. Salient results of the study are discussed.

In our study, out of 4592, 490 individuals tested positive for HIV antibodies. This comprises 10.67% of the total tested.Sherwal, B. *et al*.[5] reported from their study that out of the total 25,413 clients HIV-1 infection was found in963 (3.78%) clients. In other words, we found that almost 9 per100 individuals were HIV positive. This is in higher from a study conducted in a tertiary care hospital in South eastern region of Assam by Dr. Kabita Choudhury *et al*.whoreported HIV positivity rate to be 4.12%, 4.61% & 4.36% in 2012, 2013 and 2014 respectively[4].

In our study, the mean age of HIV patients was 38.2±12.51 years, similar tothe study conducted by Agarwal Anil *et al*.[6] who found mean age of HIV patients to be 35±11.5 years and another study by Jain C *et al*.[7] at SMS Hospital, Jaipur, who reported mean age of HIV patients was 36±13 years.

In this study majority 394 (33.6%) of HIV positive individuals belong to the age group of 15-49 years, mainly 35-49 years (18.3%). Kabita *et al*. reported majority of the HIV positive clients fell in the age group of 15-45 years (80%), precisely in 30- 45years (47.67%) in their study conducted in a tertiary care hospital in south eastern region of Assam by [4]. Nabukenya AM *et al*.[8] reported that new HIV infection among adults aged 15 to 64 was 6.2% in their study. Our study reported 11.5% HIV positivity among Heterosexual group.

In our study, 187(15.3%) of patients were in the age group of 15-35years, while the study conducted at Gwalior by Agarwal Anil *et al*.[6] showed that 101 (72.1%) of patients were in that age group. The study conducted at the SMS hospital Jaipur by Jain C *et al*.[7], and Institute of Medical Sciences, Banaras Hindu University, Varanasi by Chakravarty J *et al*.[9] concluded that 51.0% and 78.0% of patients were in this age group of19-40 years respectively.

In the present study we have tested samples for HIV from 2603 (13.4%) males, 1989 (7%) females and 1 transgender.We found 490 positive from all tested samples. Out of total 490 positives, 349 were male and 141 were female HIV infected individuals we found. Li Wei Ang *et al*.[10] studied a total of 701 newly-diagnosed HIV-infected persons among which the majority were men (94.2%). Sherwal B.*et al*.[5]. Found that HIV positivity was higher in male clients i.e. 625(64.4%) than female i.e. 336 (34.8%) followed by transgender (TG), i.e., 2 (0.2%). Among 140 HIV patients 88 (62.9%) were males in the study by Agarwal, Anil *et al*.[6]. Adult females (age15+) account 61.5% of the HIV cases in a study by Girum T *et al*.[11]. Which reflected gender disparity in epidemiological trend of HIV/AIDS infection. In the current study, out of 490 HIV positive patients, 1 (4.3%) had history of multiple blood transfusion, 6 (12.24%) had parent to child transmission, 42(30%) were MSM. Dr. Kabita Choudhury *et al*. reported that among 774 HIV positive individuals, the predominant occupation were drivers, skilled/unskilled labour (range 10% to16%), and housewives(23%). 88.5% of them exhibited heterosexual behaviour, parent to child transmission was 5.37%. In our study also, 439 out of 490 HIV patients had heterosexual mode of transmission. Li Wei Ang *et al*.[10] also concluded sexual route as the predominant mode of HIV transmission (98.3%) among701newly diagnosed HIV-infected persons.

The commonest mode of HIV transmission was heterosexual 114 (81.4%) in the study by Agarwal Anil *et al*.[6]also. The proportion of men having sex with men who were recently infected with HIV was 23.4%.Thienkrua W *et al*. mention that young MSM are vulnerable,and at risk for HIV well before 18 years of age. In this study, HIV positivity among MSM was about 30%.

Conclusion

This study underscores the enduring public health challenge of HIV/AIDS in India, despite significant reductions in new infections. Proportion of HIV among different age and risk group was found 10.6% that is quite high despite of widespread awareness camp and preventive measures available.Highest rate of transmission was found among Homosexual group in this study i.e. 30.4% As India strives for a 90% reduction in new infections by 2030, sustained efforts, informed by local epidemiology, are imperative for effective prevention, testing, and management strategies to mitigate the impact of this persistent public health issue.

Table1: Age wise distribution of HIV positive Clients

S.No.	Age	No. of Testing	HIV+ Clients	Percentage
1.	0-14	325	4	1.20%
2.	15-24	1075	52	4.80%
3.	25-34	1278	135	10.50%
4.	35-49	1128	207	18.30%
5.	50-70	786	92	11.70%
	Total	4592	490	10.60%

Table2: Gender wise distributions of HIV positiveClients

S.No.	Gender	No. ofTotal Testing	No. of Positive	Percentage
1.	Male	2603	349	13.4%
2.	Female	1989	141	7%
3.	Transgender	1	0	0%

Table3: Various routes of transmission in HIV positiveclients

S. No.	Name of Route	No of Test	No.of Positive	Percentage
1.	Hetero Sexual	3809	439	11.50%
2.	Homo Sexual	138	42	30.40%
3.	Parent to Child Transmission	49	6	12.20%
4.	Blood Tranfusion	23	1	4.30%
5.	Infected Needle	17	2	11.70%
	No Risk	556	0	29.9%
	Total	4592	490	10.67%

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