

Recent trend of HIV infection at ICTC in a tertiary care hospital in North India

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Abstract

HIV (Human Immunodeficiency virus) infections are being reported worldwide, with 33.3 million affected population overall and estimated 23.9 lacs people in India at the end of 2009. There has been reduction in HIV prevalence and HIV incidence in India. HIV prevalence has declined from 0.41% in 2000 to 0.31% in 2009 and new cases have declined by 56% over the past decade from 2.7 lacs new infections in 2000 to 1.2 lacs in 2009. The aim of the present study was to determine the HIV prevalence among persons reporting to ICTC (Integrated counseling and testing centre for HIV) from 1 January 2009 to 31 December 2013 in a tertiary care hospital in North India. All persons reported (excluding pregnant females) were provided pre- and post-test counseling, which included awareness about safe sexual practices, drug abuse blood transfusion, HIV and its modes of transmission etc. and written consent was taken for performing test. Antibody testing was done using rapid kits and declared reactive as per National AIDS control organization (NACO) guidelines strategy III. Among 53091 serum samples tested, 3341 (6.3%) were positive for HIV antibody. The number of clients increased in each year, with decrease in the overall seropositivity. Maximum sero-reactivity was found in 35–49 years age group (39.1%) followed by 25–34 years age (34.3%) and male : female ratio was 2.12:1. The route of transmission was heterosexual in 2858 (85.8%) cases. Among discordant couples, the prevalence of HIV in males was 78.4% in our centre. In conclusion, the HIV prevalence was in declining trend in 5 years, indicating the effectiveness of NACP – III (National AIDS control program) interventional programs. ICTC data can be important tool for planning and improving the national HIV/AIDS intervention strategy.

Keywords: HIV prevalence, NACO, ICTC

Introduction

HIV infections are being reported worldwide, with 34.2 million affected population worldwide as per Joint United Nations Programme on HIV/AIDS (UNAIDS) organization in 2012 [1]. Though India is categorized as a low HIV prevalence nation, it has the third largest number of PLHAs (people living with HIV and AIDS). In India, 2.39 million PLHAs, of which 39% are females and 3.5% are children with an adult prevalence of 0.31% among general population (2009) [2]. HIV prevalence has declined from 0.41% in 2000 to 0.31% in 2009 and new cases have declined by 56% over the past decade from 2.7 lacs new infections in 2000 to 1.2 lacs in 2009 [2]. Delhi has an estimated 51,818 PLHAs with an adult prevalence of 0.25% [3]. Integrated counselling and testing centre (ICTC) is the key component in preventing spread of HIV, promote behavioural changes to range of intervention in prevention and care ensuring availability of professional, client-

centered counselling and testing services in an easily accessible, non-discriminating environment where clients are treated with dignity and respect. Data generated in ICTC may provide important clues to understand the epidemiology of disease in a particular region [1]. Therefore, this study was undertaken to study the incidence of HIV and to explore the pattern of socio-demographic and epidemiological distribution among HIV seropositive patients at ICTC centre in a tertiary care hospital in New Delhi.

Materials and Methods

A retrospective study was conducted from available records of all the clients who attended ICTC of our hospital between January 2009 and December 2013. The counselors provided pre-test and post-test counselling and collected their anonymous and unlinked data in registers and logbooks as per National AIDS Control Organization (NACO) guidelines under strict confidentiality after

taking informed consent. The data assessed included age, sex, behavioural pattern and HIV status among couples (concordant and discordant couples). The samples were considered as positive when found reactive by all three different methods. HIV (1 and 2) antibody testing using rapid kits were done in those who gave written consent and declared reactive as per National AIDS control organization (NACO) guidelines strategy III [4]. Antibodies to HIV were tested initially with a CombAids rapid test (Span Diagnostics). The samples tested positive in the first method were subjected to tests with two different rapid tests, that is, SD BIOLINE HIV-1/2 3.0 rapid test (Standard Diagnostics, Inc. Korea) and Signal HIV rapid test (Span Diagnostics). All tests were done according to manufacturer's instructions. Strict External quality assurance program was followed with state reference laboratory (SRL) where quarterly samples were sent from our hospital to SRL and samples were received twice in a year from SRL. HIV infected persons were referred to antiretroviral therapy (ART) centre of our hospital for further management. All the data was entered in the Microsoft Excel sheet and the percentages were calculated.

Results

Total clients provided counseling and testing services in ICTC centre of our hospital during 2009–2013 were 53,091 and among

Table 1. Distribution of clients attending ICTC centre for HIV testing.

Year	Client Initiated	Provider Initiated	Total Tested	Total Positive
2009	2420	5222	7642	643
2010	2109	7496	9605	696
2011	3345	7428	10773	811
2012	3308	8854	12162	698
2013	946	11963	12909	493
Total	12,128 (22.8%)	40,963 (77.2%)	53,091	3341 (6.3%)

Table 2. Sex-wise distribution of clients tested and diagnosed HIV positive.

Year	Total Tested	Total Positive	Male Tested	Male Positive	Female Tested	Female Positive
2009	7642	643 (8.4%)	4740	433 (9.1%)	2896	207 (7.1%)
2010	9605	696 (7.2%)	6145	445 (7.2%)	3453	243 (7%)
2011	10773	811 (7.5%)	6725	540 (8%)	4005	258 (6.4%)
2012	12162	698 (5.7%)	7365	489 (6.6%)	4757	191 (4%)
2013	12909	493 (3.8%)	8171	334 (4%)	4729	158 (3.3%)
Total	53091	3341 (6.3%)	33146	2241 (6.8%)	19840	1057 (5.3%)

*105 transgender clients were tested and 33 of them were found HIV reactive.

them 22.8% clients attended voluntarily i.e. client initiated while 77.2% clients were referred by other doctors i.e. provider initiated. Among clients reporting to ICTC, 33,146 (62.4%) were males, 19,840 (37.4%) were females and 105 (0.2%) were transgender clients. 6.3% of the clients were HIV reactive and the positivity was 6.8% among males, 5.3% among females and 31.4% among transgender clients (Table 1). It is observed that the number of clients attended the ICTC has increased every year for both males and females, however the HIV positivity decreased from 8.4% in 2009 to 3.8% in 2013 as shown in table 2. Maximum seroreactivity was found in 35–49 years age group (39.2%) followed by 25–34 years age (34.4%) (Table 3). The most common route of transmission was heterosexual (85.8%), followed by parent to child transmission (4.9%) and homosexual (4%) as shown in Table 4. Out of 1512 positive clients living with their spouse, 860 (56.9%) clients had HIV positive spouse (concordant couples) and 652 (43.1%) clients had HIV negative spouse (discordant couples). Among discordant couples, the prevalence of HIV in males was 78.4% (i.e. male partner positive and female partner negative) while 21.6% in females (i.e. female partner positive and male partner negative) in our centre (Table 5).

Discussion

Since there is no vaccine or cure available for HIV, counseling and

Table 3. Age wise distribution of HIV patients.

Year	<15 yrs	15–24 yrs	25–34 yrs	35–49 yrs	>50yrs	Total
2009	35	71	234	259	44	643
2010	38	78	230	275	75	696
2011	45	78	260	319	109	811
2012	26	59	246	261	106	698
2013	13	41	178	196	65	493
Total	157 (4.7%)	327 (9.8%)	1148 (34.4%)	1310 (39.2%)	399 (11.9%)	3341

Table 4. Pattern of risk behaviour among HIV positive clients.

Mode of transmission	2009	2010	2011	2012	2013	Total
Heterosexual	586	610	665	551	454	2866 (85.8%)
Homosexual	7	6	41	75	7	136 (4%)
Blood transfusion	15	23	36	6	-	80 (2.4%)
Infected needles/syringe	1	9	5	8	4	27 (0.8%)
Parent to child	34	37	48	33	14	166 (4.9%)
Unknown	-	11	16	25	14	66 (1.9%)
Total	643	696	811	698	493	3341

Table 5. Status of HIV in spouse in couples.

Year	Concordant couples	Discordant couples	Discordant couples	
			Male positive	Female positive
2009	206	187	142	45
2010	199	159	123	36
2011	236	124	93	31
2012	137	104	85	19
2013	82	78	68	10
Total	860 (56.9%)	652 (43.1%)	511	141

testing becomes an important tool of intervention and control of HIV which is managed by ICTC centres in hospitals. Counseling for HIV especially pre-test counseling plays an important role in improving the acceptability for HIV testing. The overall prevalence of HIV in our ICTC centre was found to be 6.3% in five years and it varies from 8.4% in 2009 to 3.8% in 2013. However the remarkable decrease was seen in the prevalence rate from 2009 to 2013 and regular increase in the number of clients for HIV testing was observed each year from 2009 to 2013. This is because of intense health education and awareness campaign regarding HIV and its modes of transmission and improved pre-test counseling thereby promoting more clients to undergo HIV testing and thus improving early diagnosis and treatment of HIV. The HIV prevalence among states in India ranges from 1.5% to 18.5% and the prevalence in Delhi ranges from 3.7 to 4.1% as per the report of NACO [5]. In our study, it was seen that 77.2% of the clients attending ICTC were referred i.e. provider initiated rather than voluntarily thereby explaining high prevalence in our hospital compared to NACO report. The prevalence was higher in males than females and was highest among transgender clients (31.4%) which are in accordance with other studies from India [6,7] and it also in accordance with national data [2]. However yearly analysis showed declining trend of HIV prevalence among both males and females which indicates that the current strategies helped to reduce the HIV prevalence in both sexes. In our study, HIV prevalence was maximum in 35–49 years age group (39.2%) followed by 25–34 years age (34.4%) which is similar to results obtained in other studies from India [6,7]. As per NACO, India factsheet 2012, 82.4% of HIV reactive clients were among adults aged 15 to 49 years [8]. This group is more sexually active and hence more prone for developing HIV and other sexually transmitted infections. Also it is a serious cause for concern as this is the child bearing age group and hence increased risk of parent to child transmission of HIV.

In the present study, unprotected heterosexual contact was the most common mode of transmission of HIV (85.8%). Parent to child transmission (4.9%), homosexual route (4%) and blood transfusion (2.4%) were less common modes of HIV transmission which is similar to other studies [6,9] and with national figure [2]. Education of people with high risk behaviour and their partners regarding modes of transmission and prevention of disease is necessary. Also HIV patients should be educated regarding the antiretroviral therapy (ART) which will prolong the survival of patients by decreasing the viral load and thereby reducing the transmission rate of the disease. Only among 1.9% of clients, the mode of transmission was not known. This is highly dependent on the skill of counsellors working in our ICTC centre as the clients were comfortable in disclosing such facts in front of counsellors.

Couple counselling and partner notification is an important tool

in prevention and transmission of HIV. Once the couple status is known, spouse can decide to access available HIV prevention, counselling, and testing services. In our study, 56.9% were concordant couples, while 43.1% were discordant couples. Among discordant couples, 78.4% were male partner/husband positive, female partner/wife negative and 21.6% were male partner/husband negative, female partner/wife positive similar to other study from India [10]. Early diagnosis of HIV cases is necessary to prevent transmission of HIV especially in serodiscordant couples [11]. This is because males are more aware of the risk of HIV and their preventive measures and visit ICTC in early stage of disease thereby preventing spread of infection to their female partners, while females are illiterate and do not visit ICTC due to social stigma. Project Leonardo is a team-based approach for chronic disease management with care managers, physicians, and specialists working together as “partners” of the patient. The role of care managers is to work directly with individual patients and helping them to make lifestyle changes, monitoring their conditions, and providing the necessary information and advice to promote patient empowerment and enhance self-management skills [12]. Hence appointment of care managers will help in better management and follow up of HIV patients.

However, the present study has certain limitations. This is a retrospective study and hence the results are based on reporting and data collection by counsellors employed in the ICTC and hence bias may occur. This data is from ICTC in a tertiary care hospital and is not a true representation of the community. Additionally, this study excludes antenatal care participants which reflect general population; however this might dilute the study participants and significantly decrease the prevalence of HIV among the high-risk group. This study can however help in local planning and contribute data for policy makers to improve the existing national HIV/AIDS intervention strategies.

In conclusion, HIV testing, diagnosis, and treatment are key strategies for HIV prevention. ICTC plays a key role in the diagnosis, management and prevention of spread of disease. The data generated in ICTC is an important indicator of the prevalence of HIV, and its mode of transmission in the given region. In our study, HIV threatens the most productive segment of the society in the prime of their working life which is a serious cause of concern. This emphasizes the need of increased awareness and sex education to high school and college students.

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