

STUDY OF HIV INFECTION AMONG PATIENTS ATTENDING ICTC IN A TERTIARY CARE HOSPITAL

Medical Microbiology

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ABSTRACT

Human immunodeficiency virus (HIV) infection is a major global public health problem. Globally it is estimated that 84.2 million people have been infected with the HIV. This prospective study conducted for a period of one year in a tertiary care hospital from July 2022 to Jun 2023. The study population includes all clients attending ICTC for HIV screening. A total of 6879 clients were undergone HIV testing by three rapid HIV test kits of different principle namely HIV TRI DOT, SD BIOLINE HIV-1/2 and CombAids and those sample showing positive test result in all three rapid test were declared HIV positive. Out of 6879 clients tested for HIV, 16 were reactive and 6863 were nonreactive. HIV seroreactivity was found to be 0.23% and is higher in males than females and more among clients belonged to sexually active age group of 31-40 years.

KEYWORDS

HIV, ICTC, TRI DOT, CombAids

INTRODUCTION

Human immunodeficiency virus (HIV) infection is a major global public health problem. Globally it is estimated that 84.2 million people have been infected with the HIV virus and 40.1 million people have died of HIV since the beginning of epidemics.¹

The Joint United Nations Programme on HIV/AIDS (UNAIDS) has reported, worldwide there are 28.7 million people living with HIV and two thirds of whom (75%, 25.6 million) are in the WHO African Region, 650 000 deaths from HIV related causes and 1.5 million new HIV infections in 2021.¹

In India, it is estimated that about 24 lakhs people are living with HIV in the year 2021. The prevalence of HIV in adults (15-49 years) is 0.21% in the year 2021 which has declined since the epidemic's peak in year 2000 where prevalence was estimated to be 0.55%.² The highest prevalence of adult HIV is seen in northeast region States (2.70% in Mizoram, 1.36% in Nagaland and 1.05% in Manipur), followed by southern States (0.67% in Andhra Pradesh, 0.47% in Telangana and 0.46% in Karnataka).²

In India, National AIDS Control Organization (NACO) estimated that in the year 2021, Annual New HIV Infections (ANI) are 62.97 thousand and annual AIDS Related Deaths (ARD) are 41.97 thousand.² There is decline of 46.3% in New HIV Infections and also a decline of 76.5% in AIDS Related Deaths at national level from 2010-2021.²

National AIDS control program (NACP) was launched in the 1990s with the purpose of reducing HIV infection rates. Integrated counseling and testing centers (ICTC) are a key component of this program for effective primary prevention, treatment and care of HIV-infected persons.³

Integrated counseling and testing centers (ICTC) are essential points connecting the persons infected with HIV to counseling and further treatment. The HIV data obtained at ICTC can be an important indicator to the prevalence of HIV infection.³

MATERIALS AND METHODS

This prospective study was conducted in the department of Microbiology, Adichunchanagiri Institute of Medical Sciences, BG Nagara, Karnataka, India, a tertiary care hospital from July 2022 to Jun 2023.

The study was approved by the Institutional Ethical committee. In the present study, a total of 6879 clients were attended the ICTC and undergone HIV testing.

The study population includes all clients attending ICTC for HIV screening on a voluntary basis or referred from various department of the institution and the pregnant women and children were excluded

from the study. The client data including name, age, sex, occupation, education, marital status, risk factor associated were collected and documented as per National AIDS control organization (NACO) guidelines strategy III. After counseling and getting written consent from the clients, their blood sample was tested for HIV antibodies as per National AIDS control organization (NACO) guidelines strategy III.⁴ Three rapid HIV test kits of different principle namely HIV TRI DOT, SD BIOLINE HIV-1/2 and CombAids rapid test were used for the purpose of diagnosis of HIV. The samples were tested initially with HIV TRIDOT for HIV antibodies. The samples tested positive in the first method were retested with two different rapid tests, that is, SD BIOLINE HIV-1/2 and CombAids rapid test. All tests were done according to manufacturer's instructions. Those sample showing positive test result in all three rapid test were declared HIV positive, and the person showing negative test result were advised to come after one month for review.

RESULTS

In the present study, a total of 6879 clients were attended the ICTC and undergone HIV testing.

Out of 6879 clients attended, 3525(51.24%) were male and 3354(48.75%) were female.(Table 1)

Table 1: Sex Distribution

Sex	No.of clients	Percentage
Male	3525	51.24%
Female	3354	48.75%
Total	6879	100%

Age distribution of the clients in the age group of 1-10 yrs were 0 (0.00%), 11-20 yrs (n=8, 0.11%), 21-30 yrs (n=1408,20.46%), 31-40yrs (n=2704,39.31%), 41-50 yrs (n=2526 ,36.73%), 51-60yrs (n=224 ,3.25%) and 61-70 yrs (n=9,0.13%) respectively. Majority of the clients were in the age group of 31-40yrs followed by age group of 41-50 yrs (Table 2)

Table 2: Age Distribution

Age	No.of clients	Percentage
< 10 yrs	0	0.00%
11-20yrs	8	0.11%
21-30yrs	1408	20.46%
31-40yrs	2704	39.31%
41-50yrs	2526	36.73%
51-60yrs	224	3.25%
61-70yrs	9	0.13%
Total	6879	100%

In this study, out of 6879 clients tested for HIV, 16 were reactive and 6863 were nonreactive, HIV prevalence among all clients was 0.23%.(Table 3)

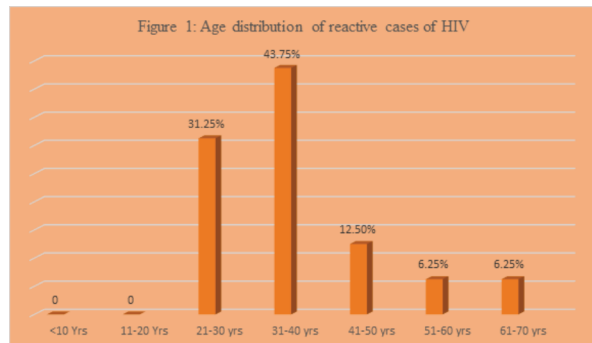
Table 3: Seropositivity For HIV

Results	Number of clients	Percentage
HIV reactive	16	0.23%
HIV Non-reactive	6863	99.76%
Total	6879	100%

Out of 16 positive cases, 10 (62.5%) were males and 6 (37.5%) were females, with seropositivity was more in males (Table 4). Majority of the clients tested reactive were in the age group of 31-40 yrs (n=7, 43.75%), followed by age group of 21-30 yrs (n=5, 31.25%), 41-50 years (n=2, 12.5%), 51-60 years (n=1, 6.25%) and 61-70years (n=1, 6.25%). (Figure 1)

Table 4: Reactive Cases Of HIV

Sex	No. of Reactive	Percentage
Male	10	62.5%
Female	6	37.5%
Total	16	100%

**Figure 1: age-wise Distribution Of Reactive Cases Of HIV**

HIV prevalence among all clients was 0.23% and prevalence of HIV –TB co-infection was found to be 12.5% (2 positive TB coinfection among 16 HIV positive cases)

DISCUSSION

In present study, of total 6879 clients attended, males were 3525 (51.24%) and females were 3354 (48.75%) which is similar to findings of other ICTC based studies conducted by ,Dutt R.et al⁵ and Arshad Ayub et al⁶. Majority of the clients were in the age group of 31-40yrs (39.31%) followed by age group of 41-50 yrs (36.73%). The other studies conducted by Navi .et al³ and Jayaram S .et al.⁷ shows similar pattern of maximum attendees from 25-49 year age group, as this is the most sexually active age group.

In this study, out of 6879 clients tested for HIV, 16 were reactive and 6863 were nonreactive. HIV prevalence among all clients was 0.23%.this finding is in comparison to rates of NACO 2021 where the prevalence of HIV in adult Indian population is 0.21%² and also other studies conducted by Noor Jahan .et al⁸ and Giri PA .et al⁹.

Among 16 reactive cases, 10 (62.5%) were males and 6 (37.5%) were females with prevalence of HIV infection being more in males than females, which is in concordance with other studies done by Dutt et al⁵, Rajender Singh et al¹⁰, Arshad Ayub et al⁶ and also in accordance with NACO data 2021.² Most of the studies conducted at various parts of the country shows male predominance and the possible reason for this higher male predominance is exposure to risk factors such as multiple sexual partners and drug use.⁶

In the present study, majority of the clients tested HIV reactive were belonged to the age group of 31-40 yrs (43.75%), followed by 21-30 yrs (31.25%) , 41-50 years (12.5%) ,51-60 years (6.25%) and 61-70years (6.25%), which is in concordance with studies done by Noor Jahan et al⁸, Sayare PC et al,¹¹ Ambhore NA et al¹² and Madkar et al.¹³ and also as per NACO, India factsheet 2021, it is observed that about 89% of the cases occurred among sexually active persons aged 20 - 49 years.³ This group is more sexually active and hence at more risk for developing HIV and other sexually transmitted infections

CONCLUSION

The present study was done to detect the seroreactivity of HIV among clients attending ICTC of our Institute. HIV seroreactivity was found to be 0.23%. HIV seroreactivity was higher in males than females and

found to be more among clients belonged to sexually active age group of 31-40 years, followed by 21-30 years. Hence, there is a need for continuous efforts in the form of creating awareness by imparting education, promotion of safe sex practice, prevention of illicit drug use and safe blood transfusion among people of this age group for the prevention and control of HIV infection.

HIV testing, diagnosis, and treatment are key strategies for HIV prevention. ICTCs have an important and crucial role in the prevention, detection and care of HIV infection. ICTC services are pre-test counseling, testing of HIV, post-test counselling and communication with ART center for treatment of positive clients. The HIV data generated in ICTC is an important indicator of the prevalence of HIV in the given region and can be used as an important tool for planning and improving the National HIV/AIDS intervention strategy.

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