

CLINICAL PROFILE OF PATIENTS ATTENDING ANTIRETROVIRAL THERAPY (ART) CENTRE OF MEDICAL COLLEGE HOSPITAL OF GWALIOR CITY: A CROSS SECTIONAL STUDY

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Abstract

Background: The Human Immunodeficiency Virus (HIV) infection is a global pandemic. HIV/AIDS continues to be a public health challenge in India, even with low prevalence (0.22% in 2020), India has the second highest HIV burden globally with an estimated 23.19 lakh PLHIV in 2020. Becoming knowledgeable about these health risks is the first step in protecting against them. The objective is to identify the risk factors, socio-demographic and clinical determinants of patients attending ART centre of Gwalior. **Materials and Methods:** The present study was a hospital based observational cross-sectional study. The study was conducted from March to August 2019 among HIV positive patients newly registered at ART Centre of tertiary care hospitals of Gwalior city. A predesigned, pretested semi-structured, interview-based questionnaire was used to collect the required information and patient's data on CD4 counts, staging of disease and opportunistic infection was collected from their treatment record card. **Result:** A total of 140 participants were enrolled in the study, out of them 62.9% were male. The mean age was 35.63±10.22 years. Majority of the participants (50.7%) had CD4 count between 201-501 while only 17.9% had CD4 count >500. **Conclusion:** More than half participants were having any opportunistic infection, most common was Tuberculosis. To reduce the burden, awareness programme should be initiated focused for deprived and high-risk group. Lowering stigma and more social support could be useful in availing early medical care to detect cases early, prevent further transmission and complications.

INTRODUCTION

The Human Immunodeficiency Virus (HIV) infection is a global pandemic. Forty years passed since the first cases of AIDS was reported, this pandemic is at a critical inflection point that is still far from over. ^[1]

There were an estimated 37.7 million [30.2–45.1 million] people living with HIV at the end of 2020. In 2020, 680 000 [480 000–1.0 million] people died from HIV-related causes and 1.5 million [1.0–2.0 million] people acquired HIV. ^[2]

HIV/AIDS continues to be a public health challenge in India, even with low prevalence (0.22% in 2020), India has the second highest HIV burden globally with an estimated 23.19 lakh PLHIV in 2020. ^[3]

HIV/AIDS is no longer just a public health issue in India but become one of the most serious socioeconomic & developmental concerns, because

maximum number of reported cases are occurring in sexually active & economically productive age group (15-44 years). It not only costs huge sums of money as to managing the opportunistic infections such as TB, pneumonia, diarrheal diseases etc., but also seriously affect individuals in their prime productive years causing enormous economic loss to them, to their families and to the country. ^[4]

Human immunodeficiency virus (HIV) is a retrovirus known to attack the CD4+ T lymphocytes. In individuals with chronic HIV infection not on treatment with antiretroviral agents, as the CD4+ count drops they are vulnerable to a multitude of infections which rarely occur in an immunocompetent host, hence the term opportunistic infections (OIs). ^[5] Becoming knowledgeable about these health risks is the first step in protecting against them.

There is a need to work out on the profile of patients who register in ART center and relate their clinical and socio-demographic variables for the management. Moreover, it is important to understand the presentation of HIV/AIDS in the geographical population of this region. The present study is aimed at identifying the socio-demographic characteristics, clinical profile, opportunistic infections and the possible risk factors among HIV/AIDS patients, attending ART centre of tertiary care hospitals of Gwalior.

MATERIALS AND METHODS

The present study was a hospital based observational cross-sectional study. The study was conducted from March to August 2019 among HIV positive patients newly registered at ART Centre of tertiary care hospitals of Gwalior city.

The ART centre is affiliated to National AIDS Control Organisation (NACO). A total of 140 patients, more than 18 years of age, who visited OPD on Monday, Wednesday and Friday were enrolled in the study using convenience sampling method. Those who were seriously ill, debilitated and not willing to take part in the study were excluded.

A predesigned, pretested semi-structured, interview-based questionnaire was used to collect the required information, which consists of socio-demographic detail of the patients such as age, sex, place of living, place of working, religion, caste, marital status, type of family, per capita income, socio-economic status, education, occupation, alcohol and tobacco intake, smoking, family members with HIV, mode of transmission. Also, patient's data on CD4 counts, staging of disease and opportunistic infection was collected from their treatment record card. The data was then entered in Microsoft Excel 2019, analysed and expressed in percentage.

Written consent was taken from each patient prior to interview. Confidentiality and privacy were maintained throughout the study. The study was approved by the Institutional Ethics Committee. We have also taken written permission from the State AIDS Control Society of M.P. state to conduct the study.

RESULTS

A total of 140 participants were enrolled in the study, out of them 62.9% were male. Age wise majority of them were in the age group of 18-30 years. The mean age was 35.63±10.22 years. Nearly two third participants residing in the rural area and 95.7% were Hindu by religion. According to their education status 30% participants were illiterate and 30% educated up to middle school. As per the modified B.G. Prasad's socio-economic classification 33.6% participants belonged to middle class followed by upper middle (25%). Majority of them were married (76.4%) and 70.7% were living in nuclear family.

According to the route of transmission of infection, nearly half of study participants were heterosexual, 9.3% had more than one risk factor whereas one-fourth were included in others (Blood transfusion, Mother to child, Migrant, Trucker. 41.4% spouses of the study participants were found to be suffering from HIV/AIDS.

Majority of the participants (50.7%) had CD4 count between 201-501 while only 17.9% had CD4 count >500. On the basis of WHO BMI classification, majority of participants were within normal range (51.4%) followed by underweight (45.7%). As per WHO clinical staging it was observed that majority (61.4%) of the subjects belonged to stage I followed by stage III (22.1%). 54.2% participants had any opportunistic infection. Out of which majority (32.9%) had Tuberculosis.

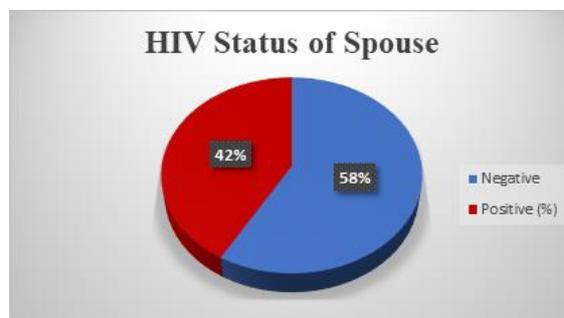


Figure 1: Spouses of study participants suffering from HIV/AIDS.

Table 1: Sociodemographic characteristics of the study subjects.

Variables		Number(N=140)	Percentage (%)
Age (Years)	18-30	52	37.1
	31-40	49	35.0
	41-50	29	20.7
	>50	10	7.1
Gender	Male	88	62.9
	Female	52	37.1
Place of living	Urban	44	31.4
	Rural	96	68.6
Caste	UR	57	40.7
	SC	20	14.3
	ST	10	7.1
	OBC	53	37.9
Religion	Hindu	134	95.7
	Others	06	4.3
Education	Illiterate	42	30.0
	Primary school	37	26.4

	Middle school	42	30.0
	High School	11	7.9
	Intermediate	05	3.6
	Graduate/Post graduate	03	2.1
Occupation	Unemployment	46	32.9
	Unskilled worker	21	15.0
	Semiskilled worker	18	12.9
	Skilled worker	29	20.7
	Shopkeeper/Farmer	26	18.6
Socioeconomic status (Modified BG Prasad)	Upper	07	5.0
	Upper-middle	35	25.0
	Middle	47	33.6
	Lower-middle	26	18.6
	Lower	25	17.9
Marital status	Married	107	76.4
	Unmarried	18	12.9
	Widowed/ Divorced/Separated	15	10.7
Type of Family	Single	08	5.7
	Nuclear	99	70.7
	Joint	33	23.6

Table 2: Route of transmission of HIV/AIDS among study participants.

S. No.	Risk factor for HIV/AIDS	Number (N)	Percentage (%)
1.	Heterosexual	68	48.6
2.	Homosexual	15	10.7
3.	Injection Drug User	09	6.4
4.	More than one risk factor*	13	9.3
5.	Others**	35	25.0
Total		140	100.0

*More than one risk factor- Heterosexual/Homosexual/Injection drug users

**Others- Blood transfusion, Mother to child, Migrant, Trucker

Table 3: Clinical determinants/ characteristics of the study subjects

Variables		Number (N=140)	Percentage (%)
CD4 Count	<200	44	31.4
	201-500	71	50.7
	>500	25	17.9
BMI (Kg/m ²) *	< 18.50 (Underweight)	64	45.7
	18.50-24.99 (Normal Range)	72	51.4
	>25.00 (Overweight/Obese)	04	2.9
W.H.O clinical staging.	Stage I (Asymptomatic)	86	61.4
	Stage II (Mild symptoms)	10	7.1
	Stage III (Advanced symptoms)	31	22.1
	Stage IV (Severe symptoms)	13	9.3

* W.H.O. classification of BMI.

Table 4: Distribution of study population according to the opportunistic infection.

S. No.	Opportunistic infection	Number (N)	Percentage (%)	
1.	Present (n=76) (54.2%)	Tuberculosis	46	32.9
		Candidiasis	8	5.7
		Chronic diarrhoea	14	10.0
		Tuberculosis and Candidiasis	04	2.9
		Tuberculosis and Chronic diarrhoea	02	1.4
		Candidiasis and Chronic diarrhoea	02	1.4
2.	Absent (n=64) (45.7%)	64	45.7	

DISCUSSION

In our study the mean age (+SD) of the study participants was 35.63+10.22 years, which was 38.5 (+8.5) years for males and 33.8 (+8.4) years for females. It reflects the majority were in sexually active age group. Peerapur S et al., [6] reported that 50% participants were in the age group of 21 to 40 years and in the study done by Samson-Akpan PE et al. [7] 40.8% study population belonged to 35-45 years age group. It is evident that HIV/AIDS is more

prevalent among the sexually active and economically productive people who were responsible for bearing children and earning livelihood for the family, which could be economically detrimental for a country.

We included 62.9% male and 37.1% female participants in the present study which was similar to the study done by Jha AK et al. [8] A study done by Ingole N et al, [9] in Mumbai reported that males had 1.6 times more chance of being positive as compared to females (CI 1.321-2.022).

In the present study majority of study population belongs to rural area (68.6%) and rest to urban area (31.4%) which is consistent with the findings of Gebremichael DY et al, [10] in their study done in Ethiopia and Peerapur S et al. [6] This might be due to presence of relatively poor infrastructures, more financial constraints as well as high social stigma and discrimination in rural areas.

In the present study 30% of our study participants were illiterate, 26.4% and 30% educated upto primary and middle school respectively, while very less (3%) participants were educated above intermediate level. This indicate that higher educational levels offer some protection against HIV. This was in accordance with the findings of the study which was conducted by Peerapur S et al. (2018). [6] Among the total patients included from ART centre, 32.9% were unemployed, 20.7% were skilled workers. This reflects that high-risk behaviour is more among the unemployed who usually belong to the low socioeconomic status. Majority of females (81%) in study were housewives and 95% of them had educated below intermediate level. In another research also observed a statistically significant relationship between sero-concordant couples (same HIV status) and employment status as housewives. [11] Majority of the patients lived with their family, 99 (70.7%) of participants in nuclear and 33(23.6%) in joint family this finding was supported by Lodhi et al. [12]

In our study 41.4% of spouse of study participants were suffering from HIV/AIDS while E. Thiruvalluvan et al. (2016) reported in their study that 56% of spouses were HIV positive. [13] As evident in the study that more than half spouses were still having Negative HIV status, so they should be targeted promptly to interrupt transmission of HIV. Heterosexual route was found to be the most common mode of transmission. This finding is similar to a study conducted by Sahoo SS et al. and Peerapur S et al. [6,14] These high-risk people along with their affected spouse need to be educated regarding all levels of prevention of HIV infection. We observed that nearly half of the patients had CD4 count between 201-500 cells/ μ l. The mean CD4 count was 326 cells/ μ l. This was consistent with the findings of Buchacz K et al. where mean CD4 count was 339 cells/ mm^3 and 58% of participants had CD4 count <350 cells/ mm^3 . [15]

In our study mean CD4 count is lower in those having Opportunistic infections (mean \pm SD=286 \pm 185) still lower in HIV-TB patients (mean \pm SD=246 \pm 181) and still lower in cases with WHO clinical stage III & IV (mean+SD=220+195). With lower value of CD4 counts patients are at high risk of developing opportunistic infections. This finding of opportunistic infections and CD4 count is supported by the study conducted by Chavan VR et al. [16]

More than half (54.2%) of subjects had opportunistic infection. Out of which majority (32.9%) had tuberculosis. Other OIs found in this study were Candidiasis, Chronic diarrhoea, Tuberculosis and

Candidiasis etc. Similar findings were noted by study done by Chavan VR et al where around half of the cases had OIs and Tuberculosis was the dominant co-infection. [16]

CONCLUSION

In the present study we found nearly two third participants residing in the rural area. Age wise majority were belonged to 18-30 years age group. More than half participants were having any opportunistic infection, most common was Tuberculosis. To reduce the burden, awareness programme should be initiated focussed for deprived and high-risk group. Employment policies that promote job security to HIV/AIDS patients should be started as soon as possible to offer financial security to these patients which can improve their mental as well as physical health. There should also be provision for improving the spiritual health of HIV/AIDS patients in health facilities as it is an integral part of their overall health & well-being. Social support from family & community goes a long way in boosting the morale of patient & also helps in overcoming the stigma & psychological impact associated with HIV/AIDS. Lowering stigma and more social support could be useful in availing early medical care which aims to detect cases early, prevent further transmission and complications.

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