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Original Research Article

Functional status and CD4 count of patients living with HIV AIDS attending ART centre at tertiary care hospital of central India

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ABSTRACT

Background: The present study was retrospective record based, conducted with the aim of assessing the functional status and CD4 count of patients living with HIV/AIDS attending the ART Centre in special reference to gender difference at tertiary care hospital of central India.
Methods: Study subjects were people living with HIV/AIDS registered at ART centre at tertiary care hospital of central India in the past three years (1 Jan. 2011 to 31 Dec. 2013). The study duration was from September 2013 to January 2015. This study was conducted on 2042 PLHIV subjects whose records were available for study.
Results: In our study there were 58.37% males, 42.4% female and 0.15% transgender. Majority of male 42.45% were between 35-44 years of age group whereas 36.95% females were between 25-34years of age group. Majority of males 22.16% were non agricultural labourer whereas females 78.32% were homemaker. Majority of males 37.41% were in the WHO clinical stage 3 whereas majority of females 36.70% were in stage 1 at the start of ART treatment. About 84.30% females and 76.9% male were working at the start of ART. Majority of males 31.12% and 38.79% had CD4 count between 51-150 at the time of ART registration and at the time of ART treatment respectively. Majority of males 42.62% and 29.34% had CD4 count >350 and between151-250 respectively. About 16.53 % males and 8.97% female were died at the time of data collection.
Conclusions: In the study there were male preponderance with 75.26% males and 57.39% females were having CD4 count less than350/cumm at the time of registration respectively. Majority of our study subjects were working at the time of start of ART. The deaths among males were significantly more as compared to females.

Keywords: ART, CD4 count, Functional Status, Gender difference, HIV

INTRODUCTION

AIDS, the Acquired Immuno Deficiency Syndrome, also known as 'slim disease', is a life-threatening illness caused by HIV primarily attacking immune system in the body. According to WHO globally, there were approximately 36.7 million people living with HIV at the end of 2016, 1.8 million people was newly infected with HIV AIDS and 1.0 million people died from HIV related causes.[1]

In 2017, 20.9 million people living with HIV were receiving ART by mid-2017 and 7 out of 10 pregnant women living with HIV received antiretroviral treatment worldwide.[2]

According to NACO in the year 2015, there were estimated 2.1 million cases, 1.4 million were diagnosed as having HIV, 747,175 were on ART and an estimated 67.6 thousand people died of AIDS-related causes nationally. As per annual report 2016-2017, national

adult (15-49 years) HIV prevalence was estimated to be 0.26%.[3]

In Nagpur also known as 'Orange City', as of 2012 ICTC data, HIV prevalence was low among male and female attendees i.e. 3.33% and 3.25% respectively as well as among referred 3.05% attendees and direct walk ins 3.62%.[4]

Having succeeded in achieving the MDG6 NACO has now worked to reach 'last mile' in order to ensure a more effective, sustained and comprehensive coverage of AIDS related services with the articulation of National Health Policy and will be implemented through a Seven Year National Strategic Plan on HIV AIDS and STI from 2017-2024. Next coming seven years are therefore critical in substantive gains towards "Ending of AIDS".[5]

Aim and objectives of the study was to assess the functional status and CD4 count of patients living with HIV AIDS attending ART centre with special reference to gender difference at tertiary care hospital of Central India.

METHODS

Our study was cross sectional record based, among the people living with HIV/AIDS registered at ART centre of tertiary care hospital of Central India from 1st January 2011 to 31 December 2013. At the ART center, CD4 count is one of the parameter is used for initiation of Anti-retroviral therapy. Data was collected from record at ART and analyzed using Microsoft excel 2007 and statistical software Epi Info 7.

RESULTS

There were 2042 PLHIV subjects in our study with 1192 (58.37%) males, 847 (42.48%) females and 3 (0.15%) were transgender. Maximum 506 (42.45%) males were in 35-44 years of age group whereas 313 (36.95%) females were in 25-34 years of age group. Majority 734 (74.07%) males and 513 (67.41%) females were married. Majority of females were homemaker 589 (78.32%) whereas Majority of males were non-agricultural laborer 220 (22.16%) (Table 1).

Table 1: Distribution of study subjects according to socio demographic status.

Age group (years) and sex of study subject	Male 1192(58.37%)	Female 847(42.48%)
	***3 (0.15%) subjects were transgender. One was in 15-24 years and two were in 25-34 years age group.**	
< 15	47 (3.94)	30 (3.54)
15 -24	46 (3.86)	95 (11.22)
25 -34	307 (25.76)	313 (36.95)
35-44	506 (42.45)	264 (31.17)
45 -54	207 (17.37)	112 (13.22)
≥55	79 (6.63)	33 (3.90)
Marital status	***3 transgender was single.**	
Married	734 (74.07)	513 (67.41)
Widow/widower	43 (04.34)	171 (22.47)
Single	169 (17.05)	44 (05.78)
Divorced/separated	40 (04.04)	33 (04.34)
Live in relationship	5 (00.50)	0 (0.00)
Occupational status	***3 transgender subject was in business group.**	
Homemaker	0 (00.00)	589 (78.32)
Non agri. Labourer	220 (22.16)	26 (03.46)
Service(govt./private)	192 (19.34)	35 (04.65)
Agri. Labourer	174 (17.52)	30 (03.99)
Business(small/large)	102 (10.27)	8 (01.06)
Unemployed	61 (06.14)	37 (04.92)
Driver	80 (08.06)	0 (0.00)
Student	33 (03.32)	16 (02.13)
Rickshaw puller/local transport worker	44 (04.43)	1 (0.13)
Skilled /semiskilled worker	42 (04.23)	3 (0.40)
Agri. Land cultivator /land owner	18 (01.81)	0 (0.00)
Hotel staff/domestic servant	120 (01.21)	6 (0.80)
Retired	13 (01.31)	0 (0.00)
Female sex worker	0 (0.00)	30 (0.40)
Prisoner	2 (0.20)	1 (00.13)

Table 2: Distribution of study subjects according to referral point for ART registration.

Referral point for art registration	Study subjects	
	Number	Percentage
ICTC	834	41.43
Private practitioner	389	19.32
IPD	157	7.80
Self referred	148	7.35
Transferred in	107	5.32
PPTCT	104	5.17
OPD	77	3.83
TB/RNTCP	72	3.58
NGO	68	3.38
Other	57	2.83
Total	2013	100.00
Note-information on referral point for registration was not available for 29 subjects.		

In our study 41.43% of study subjects referred for ART registration via ICTC followed by 19.32% from the private practitioner.

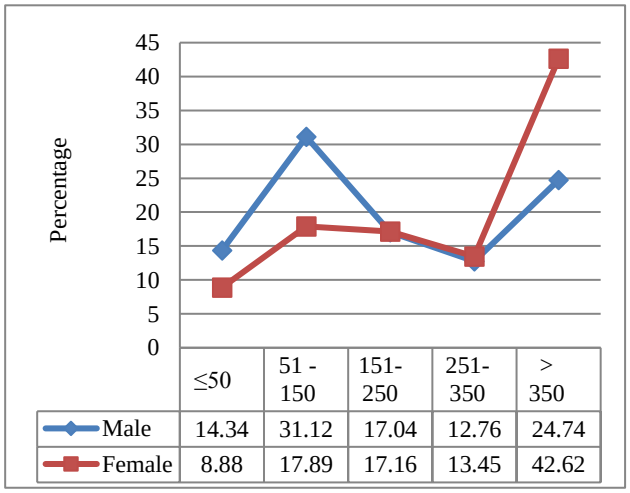

Figure 1: Distribution of study subjects as per CD4 count (cells/cumm) at the time of ART registration.

Figure 1 reveals that 42.62% female and 24.74 % males had CD 4 count >350 (cells/cu mm) whereas 8.88% female and 14.34 % males had CD 4 count ≤50 (cells/cu mm) at the time of ART registration.

Figure 2 reveals that 38.79% of male and 28.93% female had CD4 count between 51-150 (cells/cu mm) at the time of ART treatment.

The present study reveals that 646 (76.90%), 174 (20.71%), 20 (02.38%) males and 408 (84.30%), 66 (13.64%) and 10 (02.07%) females were working, ambulatory and bedridden respectively.

Out of total 1192 records of male subjects included in study 197 (16.53 %) subjects were died at the time of data collection, similarly out of 847 records of female subjects 76 (8.97%) were died at the time of data collection. The deaths among males were significantly more as compared to females. (chi square 23.71 odds ratio 2.00, CI 1.51-2.65, P < 0.01).

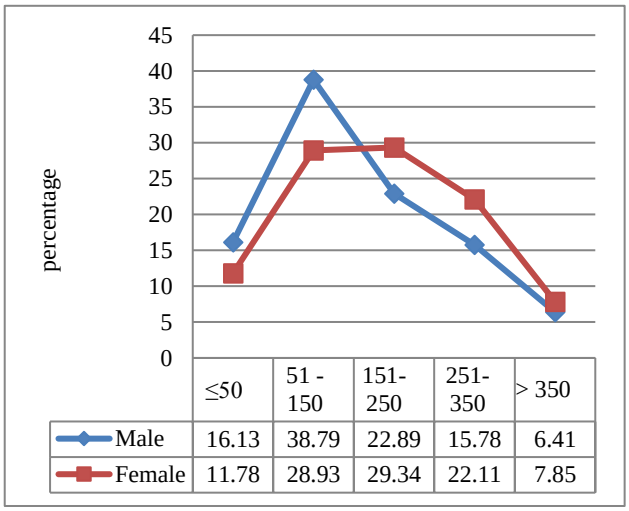

Figure 2: Distribution of study subjects as per CD4 count (cells/cumm) at the time of ART treatment.

Table 3: Distribution of study subjects according to functional status at the start of ART treatment.

Functional status	Study subjects			
	Male		Female	
	Number	%	Number	%
Working	646	76.90	408	84.30
Ambulatory	174	20.71	66	13.64
Bedridden	20	02.38	10	02.07
Total	840	100.00	484	100.00
Note-one transgender subject, functional status-working. Out of 1331 study subjects on art treatment, information on functional status was not available in records of 6 subjects.				

Table 4: Distribution of study subjects as per living status.

Gender	Living status			
	Dead	Alive	Total	
Male	197 (16.53%)	995 (83.47%)	1192 (100%)	Chi square 23.71 Or 2.00 (1.51-2.65) P value <0.01
Female	76 (8.97%)	771 (91.03%)	847 (100%)	
Total	273	1766	2039	

DISCUSSION

In the present study," Functional status and CD4 count of patients living with HIV AIDS attending ART centre at tertiary care hospital of central India" there were 2042 PLHIV. Majority 58.37% study subjects were males out of them 42.45% were in the age group of 35-44 years, 42.48% were females out of them 36.95% were in the age between 25-34 years and 0.15% were transgender, one

was in 15-24 years and two were in 25-34 years age group. About 74.07% and 67.41% of males and females were married respectively, 4.34% were widower and 22.47% widow, 17.05% and 5.78 % males and females were single, approx. 4% each male and female were divorced/ separated, and 0.5% males were in live in relationship. Majority 22.16% males were non-agricultural labourer whereas 78.32% females were homemaker.

Similarly, in the study by Sunita Kuwait they found that out of 300 patients, the male 173 (57.66%) out numbered the female 126 (42%) and intersex 1 (0.33%). Maximum number of patients 248 (82.67%) were in the age group of 15-49 years. 32 (10.66%) patients were ≥50 years of age while 20 (6.66%) of patients belonged to the pediatric (<15 years) age group. Occupation wise distribution of the patients depicts that most common occupation group, which harboured the HIV infection, was laborers group 79(26.33%) of total study population and 102 (34%) were house wives.[6]

In the study by Vishal Malhotra et al almost 65% patients were aged between 30 to 50 years with the males constitute 63.87% and female 36.13%. Majority of patients were married i.e. 72.45%, followed by widowed 13.14%, single/unmarried patients 12.77%, divorced 1.64% and no patient was in live- in relationship, drivers constitute 11.31%, govt. employees constituted just 1.28%, Army/paramilitary and grain market workers constituted 0.73% each of the total patients.[7]

In the present study 41.43%, 19.32%, 7.80%, 7.35%, 5.32%, 5.17%, 3.58%, 3.38% and 2.83% subjects were referred via ICTC, private practitioner, IPD, self, transferred in, PPTCT, OPD, TB/RNTCP, NGO and other respectively. Ghosh S et al found that almost all (99%) patients from ICTC were referred to ART centre.[8] Vishal Malhotra et al found that majority of patients (87.41%) were referred from VCTC, followed by another NGO (5.84%), PPTCP (1.28%), private practitioner (1.64%), TB/RNTCP (0.36%), and STI clinic (0.73%).[7]

The maximum number of patients referred from ICTC is due to linking of ICTC to nearest ART centre. All those who found positive for HIV are to be registered with ART centre by ICTC to utilize services of ART centre. The subjects who required ART drugs, because of stigma and inaccessibility avails the services of private practitioner, after some duration when they can't afford the treatment they had to come to ART centre and this could be reason for referral from private practitioner. The IPD patients are referred to ART centre for ART drugs as this is tertiary care centre also number of PLHIV with advanced disease are admitted to this institution. Self-referred patients are those who were aware of facility but seek some other treatment modality and eventually come to ART centre. PPTCT was later merged with ICTC but previously they were separate services. TB-RNTCP and HIV has cross referral services with HIV facility.

In our study at the time of ART registration male subjects with CD4 count ≤50 and CD4 count 51 to 150 were more as compared to female subjects; whereas the percentage of female subjects with CD4 count more than 350 were higher than male subjects. At the time of ART treatment percentage of male subjects with CD4 count ≤50 and CD4 count from 51 to 150 were more than female subjects; whereas the percentage of male and female subjects with CD4 count more than 350 was almost equal.

The finding of present study is similar with finding of study by Kumar S et al that median CD4 count of male patients was significantly lower as compared with female.[9] Singh K et al found that CD4 count below 250/cumm was found in 115 (45.45%) patients and above 250/cumm in 138 (54.54%) patients.10 Mir MA et al found that patients with CD4 count <50/cumm were 6, (23.07%), 51 to 100/cumm were, 4 (15.38%), with 151 to 200/cumm CD4 count were 2 (7.6%), and 201 to 300/cumm were 6 (23.%) while >350/cumm were 3 (11.5%).[11]

In the present study functional status as working was in 1054 (79.61%), in ambulatory status was in 240 (18.13%) and bed-ridden status was in 30 (2.27%) subjects. These finding were similar to study by Singh K et al with status of patients working status 193 (76.28%), ambulatory, 45 (17.79%) and in bed-ridden were15 (5.93%) subjects.[10] Sonani HP et al found that patients in working status were 2090 (89.9%), ambulatory 194 (8.3%), bed-ridden 41 (1.8%).[12]

In our study out of total males and females, 16.53 % and 8.97% males and female died at the time of data collection respectively. The deaths among males were significantly more as compared to females. (P value ‹0.01).

CONCLUSION

In the present study of functional status and CD4 count of patients living with HIV AIDS attending ART centre at tertiary care hospital of central India, there were male preponderance. Majority of female 42.64% as compare male 24.74 has CD4 count > 350 at the time of registration whereas majority of male 38.79% as compare female 28.93% has CD4 count between 51-150 at the time of treatment. Maximum males (76.90%) and females (84.30%) were working at the time of treatment.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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