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Research Article

Demographic profile; changing trends in patients with HIV/AIDS in response to anti-retroviral therapy - a study from tertiary care centre

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ABSTRACT

Background: The study was conducted to analyze previous ten-year prevalence data of HIV infection in Osmania General Hospital a tertiary care center in Hyderabad, India. Objective of the study was knowledge of demographic details such as age and sex and geographic location will help in the planning of training and resource allocation for the future health needs of PLHIV (People Living with HIV) effectively. With introduction of anti-retro viral therapy (ART) dreadful disease of human immunodeficiency virus infection (HIV)/ acquired immuno deficiency syndrome (AIDS) has changed to chronic manageable disease.
Methods: It is a retrospective hospital based observational study done on 18574 patients of HIV/AIDS who were registered in ART center, Osmania General Hospital. All the patients attending ART center, Osmania General Hospital from January 2005 to March 2016 were included and variables like age, sex, marital status, place of residence, pattern of risk behavior and HIV serostatus were studied.
Results: Initially number of male patients attending ART center were significantly more compared to females but towards end of 2014 the number was almost the same. Year wise data was providing in figure 2. There was a gradual increase in the number of people getting tested each year from 2004 with a peak in 2008 with a gradual decline from 2011 as shown in table 2.
Conclusions: The improved life expectancy on ART resulted in an increase in number of people living with HIV. Epidemiological studies should be carried out to understand the role of demographic factors to help managing the NACP (National AIDS Control Program) program. Increased emphasis is needed to evaluate behaviour change toward the end of NACP 111 and to plan for the future.

Keywords: HIV, AIDS, Anti-retroviral therapy, India

INTRODUCTION

In USA in 1981 the first cases of AIDS were described, and by 1985 worldwide HIV infection had been identified, HIV has reduced life expectancy, slowed economic growth and over 18 million children lost one or both parents.[1-4] In low socio economic countries AIDS was the leading cause of death among people 15-59 years old. According to UNAIDS WHO report 36.9 million (34.3 million-41.4 million) people globally were living with HIV (end 2014) and as of June 2015, 15.8 million people living with HIV were accessing antiretroviral therapy.[5] Reversal of the previous trends are reported after introduction of ART.[6-9]

Free accessibility to combination anti-retroviral therapy ART has resulted in a 24% decline in global AIDS related deaths since the peak in 2005.The improved life expectancy on ART resulted in an increase in number of people living with HIV (Patients Living with HIV).

According to India HIV estimations 2015 a technical report by NACO the total number of people living with HIV is estimated at 21.17 lakhs (17.11 lakhs-24.69 lakhs) in 2015. Undivided Andhra Pradesh and Telangana have the highest estimated number of PLHIV (3.95 lakhs) followed by Maharashtra (3.01 lakhs), Karnataka (1.99 lakhs), Gujarat (1.66 lakhs), Bihar (1.51 lakhs) and Uttar Pradesh (1.50 lakhs). Since 2007, when the number of AIDS-related deaths (ARD) started to show a declining trend, the annual number of AIDS-related deaths has declined by 54%. In 2015 an estimated 67.6 (46.4-106.0) thousand people died of AIDS-related causes nationally. This decline is consistent with the rapid expansion of access to ART in the country. Annual AIDS-related deaths declined by 60-70% from the baseline values of 2007 in Andhra Pradesh and Telangana, Goa, Himachal Pradesh and Nagaland. Between 2000 and 2015, new HIV infections dropped from 2.51 lakhs to 86 thousand, a reduction of 66% against a global average of 35%.[10] By 2007, AIDS-related deaths started to decline, falling by 54% from 2007 to 2015 against a global average of 41% decline during 2005-1511. UNAIDS. Press Release: UNAIDS announces that the goal of 15 million people on life-saving HIV treatment by 2015 has been met nine months ahead of schedule; July 14, 2015.

However, results of the new estimates presented in this technical report, show that there remain a number of challenges ahead. The pace of reductions in new HIV infections has decreased indicating greater prevention efforts will be required to change the epidemic trajectory further. This is a necessary condition if NACP-IV's prevention targets are to be reached by 2017. These trends and patterns in the epidemic need to be investigated at state and district level by analyzing the new estimates in conjunction with data from programme monitoring, surveillance, evaluations and research.[11]

The present study was conducted on patients attending ART center Department of Medicine Osmania General Hospital to analyze previous ten year prevalence data. As this Institute is one of the apex hospitals in the region, the information gathered from this center may throw light on the epidemiology of HIV transmission in this area.

METHODS

It is a retrospective hospital based observational study. Data was collected over a period of 10 years from January 2005 to March 2016 from the ART CENTRE, Department of Medicine, Osmania General Hospital. We included 18574 HIV/AIDS patients who were registered in ART center. All the essential information was collected including age, sex, marital status, place of residence, pattern of risk behavior and HIV serostatus.

Investigations

As per the strategy and policy prescribed by NACO, tests were performed on the serum samples. Complete blood picture, serum creatinine, Blood urea, serum electrolytes, Liver function tests, Sputum for Acid fast bacilli, Chest radiography, CD4 cell count, fine needle aspiration and biopsy, magnetic resonance imaging, computerized tomography (if, colonoscopy (if necessary).

RESULTS

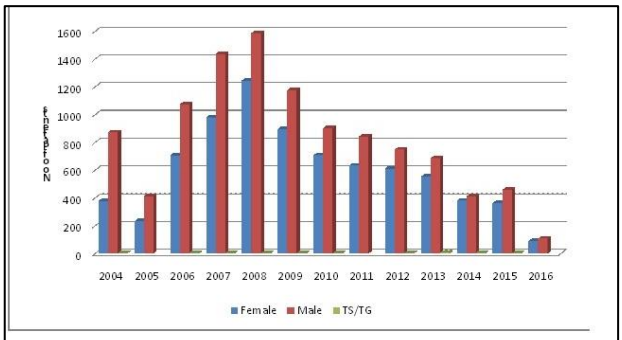

Figure :1 chart showing sex wise distribution

year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Female	380	234	707	981	1246	898	709	634	613	555	382	364	91
Male	873	415	1076	1438	1588	1176	905	844	750	688	412	460	109
TS/TG	4		6	4	3	4	3		5	8	6	3	

Figure 1: Sex wise distribution.

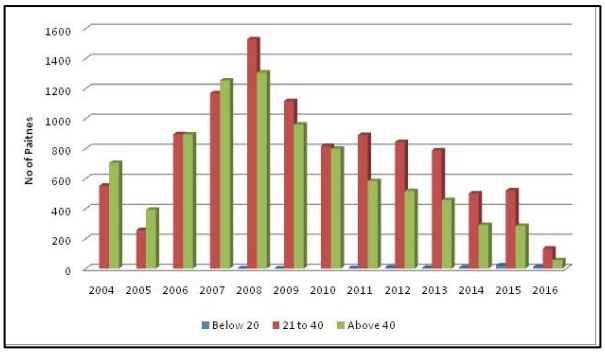

Figure 2: Age wise distribution.

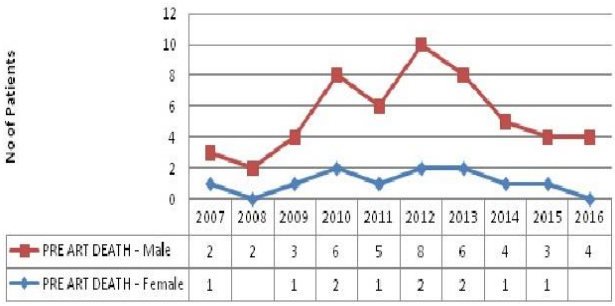

Figure 3: Deaths in Pre ART patients.

Out of 18574 patients, 10734 were male (57.79%) and 7794 (41.96%) were female, 46 (0.25%) were transgender (table 1). Majority of the patients belong to the age groups 21-40 years were 10016 (53.92%), those with age > 40 years were 8501 (45.77%) and those with age <20 years were 57 (0.31%) as shown in Figure 1.

Male patients on ART were 6578 (59.39%) and Female patients on ART were 4470 (40.36%). Male were those not on ART were 4156 (55.42%) female not on ART were 3324 (44.32%) and transgender patients on ART were 27 (0.24%) and not on ART were 19 (0.25). Initially number of male patients attending ART center were significantly more compared to females but towards end of 2014 the number was almost the same. Year wise data was providing in figure 2. There was a gradual increase in the number of people getting tested each year from 2004 with a peak in 2008 with a gradual decline from 2011 as shown in table 2. Total number of Patients registered 1257 in 2004, 649 in 2005, 1789 in 2006, 2423 in 2007, 2837 in 2008, 2078 in 2009, 1617 in 2010, 1478 in 2011, 1368 in 2012,1251 in 2013, 800 in 2014, 827 in 2015, 200 in 2016. Heterosexual transmission is the most common mode of transmission reported in our center accounting for 17854 (96.12%). More number of patients were from Hyderabad 7291 (39.1%) and Ranga reddy districts 5579 (30%) followed by other districts as shown in table 2. Total numbers of deaths were 1277. More in males (884) on ART compared to females (393) patients on ART. Mortality in both patients on ART and not on ART in both sex showed a gradual decline towards 2015 as shown in figure 3.

Table 1: Demographic profile.

Characteristics		No.	%
Gender	Male	10734	57.79
	Female	7794	41.96
	TS/TG	46	0.25
Age	Below 20	57	0.31
	21 To 40	10016	53.92
	Above 40	8501	45.77
Mode of transmission	Heterosexual	17854	96.12
	MSM	178	0.96
	Injecting Drug UseIDU	29	0.16
	Blood Transfusion	178	0.96
	Mother To Child	53	0.29
	Probable Unsafe Injection	59	0.32
	Unknown	206	1.11
	Commercial Sex-Work	17	0.09
Area district wise	Hyderabad	7271	39.5
	Rangareddy	5579	30.4
	Nalgonda	1646	8.86
	Mahaboobnagar	1024	5.51
	Other State	853	4.59
	Medak	790	4.25
	Karimnagar	378	2.04
	Nizamabad	340	1.83
	Warangal	319	1.72
	Adilabad	204	1.10
	Khammam	170	0.92

Table 2: Year wise distribution of patients.

Year	Total	Percentage
2004	1257	6.768
2005	649	3.494
2006	1789	9.632
2007	2423	13.05
2008	2837	15.27
2009	2078	11.19
2010	1617	8.706
2011	1478	7.957
2012	1368	7.365
2013	1251	6.735
2014	800	4.307
2015	827	4.452
2016	200	1.077

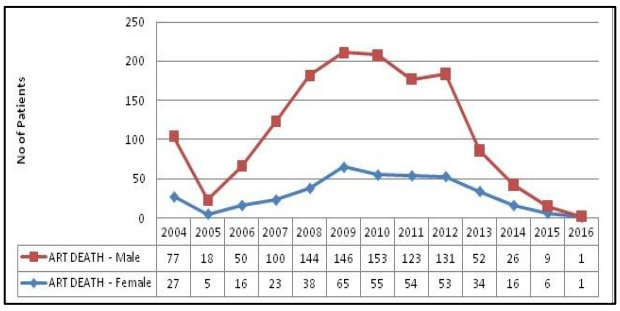

Figure 4: Deaths in patients on art.

DISCUSSION

Free ART programme was started by Govt. of India on 1st April 2004 starting with eight tertiary level government hospitals in the six high prevalent states like Andhra Pradesh, Karnataka, Maharashtra, Tamilnadu, Manipur and Nagaland. 400 ART centers functioning all around the country. Currently near 6.5 lakhs are on first line ART. Along with this 840 Link ART Centers primarily established for dispensing ARV drugs, monitoring side effects and treating minor Opportunistic Infections. Among this 154 LACS have been upgraded as LAC plus centers to provide Pre ART services additionally. Free ART saved 1.5 lakhs lives till 2011and declining trend in number of PLHIV12. The adult HIV prevalence at national level has continued its steady decline from an estimated peak of 0.38% in 2001-03 through 0.34% in 2007 and 0.28% in 2012 to 0.26% in 2015.[13,14] Increasing awareness about HIV and early initiation of ART significantly decreased HIV transmission and resulted in individual and societal prevention benefit.[15-19]

Starting antiretroviral therapy public health approach to the management of HIV and AIDS including antiretroviral therapy has been developed and continues to evolve in response to increasing scientific knowledge.[20] ART initiation guidelines used in developing countries have been based on both clinical and laboratory parameters.[21]

Earlier ART initiation is supported by recognition of lower HIV transmission from HIV-infected partners of discordant sexual relationships, with CD4 cell counts above current treatment thresholds, who are receiving effective ART and universal early initiation of ART has the potential to prevent HIV transmission at a population level.[22-25] Greater declines in estimated annual deaths are noted in states where significant scale up of ART services has been achieved. At the current pace of scale up of ART services, it is estimated around 50,000 to 60,000 deaths annually will be averted in the next five years. Ensuring good adherence to the treatment is imperative for the success of the national programme as well as for the prevention of drug resistance. To achieve this, counseling must start from the first contact visit by the clinical team and should include preparing the patient for treatment and providing psychosocial support through an identified guardian/treatment buddy and through support networks. All patients should undergo at least two counseling sessions before the initiation of ART 26.

There is a need for greater use of data for decision making, including the use of program data and epidemiological data at district and state levels to tailor the response. The epidemiological profiling of districts using data triangulation that was initiated in 2009 is a step in the right direction. This will help to ensure that a lot of the data that is being generated is adequately used for managing the program and informing policies and priorities. Increased emphasis is needed to evaluate behavior change toward the end of NACP 3 and to plan for the future, since changes in the national program key performance indicators are critical for assessing progress towards achievement of program goals 27.

CONCLUSION

In the present study male to female ratio is 59.79% to 41.96%. High incidence in the age group of 20 to 40 53.92%.Patients on ART were 59.62%, those not on ART were 40.37%. Initially number of male patients attending ART center were significantly more compared to females but towards end of 2014 the number was almost the same. Number of deaths peaked between 2007 to 2012 and there is gradual decline from 2013 to 2016.

The declining trend in number of cases registered and deaths in present study may be due to increased awareness in the public due to information, education and communication activities, earlier initiation of HAART, increased participation of NGOS and increased number of ART centers.

The national response to NACP still faces institutional constraints, both structural and managerial, to continue to scale up at the national and state levels. It is critical that these factors be addressed as the program expands its response to the epidemic.

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