## **Original Research Article**

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# Clinico demographic profile of newly diagnosed HIV sero positive patients attending an ART centre: a cross sectional study

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#### **ABSTRACT**

**Background:** India faces a high burden of HIV. An understanding of the determinants of this disease is of vital importance in curtailing this epidemic. The objective was to study the clinico-demographic profile of the study subject.

**Methods:** This is a cross sectional study done on 142 patients which includes all newly diagnosed (diagnosed on or after 1<sup>st</sup> January 2012), sero positive, adult patients, enrolled at ART centre, Nalgonda and started on treatment during the months of December 2012, January 2013, February 2013. A pre designed, pre tested questionnaire was used. Data regarding their demographic characteristics and various clinical aspects was obtained.

**Results:** Out of a total of 142 study subjects, majority (78.88%) belonged to economically productive age group (16-45 years). Married individuals constituted a majority (79.57%). A majority of the subjects were skilled laborers, belonged to lower middle class of BG Prasad classification, hailed from rural areas and belonged to nuclear families. Very few had high educational attainment. A majority (95.78%) reported not using condoms during their last sexual act and 9.16% subjects reported being previously diagnosed with an STD. Most common presenting complaint was fever and most common opportunistic infections were candidiasis and tuberculosis. Majority were found to belong to stage 1 HIV. Participants were mostly underweight and had severe anaemia. Majority had CD4 count between 201-350 cells/mm<sup>3</sup>.

**Conclusions:** Interventions targeting improvement in socio economic status, education levels, nutritional status as well as awareness about condom use must be built into the national HIV programme.

**Keywords:** Clinico demographic profile, HIV patients

### INTRODUCTION

HIV/acquired immunodeficiency syndrome (AIDS) epidemic represents a serious public health problem in India. It puts a strain on the already meager healthcare resources in the country.

With a high case fatality rate, significant impact on health and society, lack of definite curative treatment or vaccine, HIV/AIDS pandemic is one of the most frightening health problems of this century. As the number of people living with HIV/AIDS (PLHA) continues to rise, (due to initiation of Highly Active Anti Retro Viral Therapy which prolongs life) the demands on the healthcare systems are also increasing.<sup>2</sup>

The Government of India demonstrated its commitment to combat HIV with the launch of National AIDS Control Programme (NACP-1) in 1992.<sup>3</sup> The programme has evolved over a period of time and the present programme (NACP-IV) aims to accelerate the reversal of the HIV epidemic through key strategies of preventive, promotive

and curative aspects of HIV care. Provision of uninterrupted quality and free first- and second-line Anti-Retroviral Treatment (ART) to all eligible PLWHA through ART, Link ART, ART-plus centers and Centers of Excellence are some of the pillars of NACP-IV.<sup>3</sup> If we are to keep the trend of this epidemic in decline mode, then we need to intensify our efforts and understand the varied demographic and social aspects related to HIV so as to know the various points at which intervention maybe helpful.

Telangana state ranks 7<sup>th</sup> in the prevalence of HIV in India.<sup>4</sup> Studies in this newly formed state are very few. This study endeavors to study the clinico-demographic profile of the study subjects.

#### **METHODS**

This is a cross sectional study done on 142 patients which included all newly diagnosed (diagnosed on or after 1<sup>st</sup> January 2012), sero positive, adult patients, enrolled at ART centre, Nalgonda and started on treatment during the months of December 2012, January 2013, February 2013. Pregnant women and acutely ill patients and those unwilling to participate in the study were excluded.

This study was conducted at ART centre, Nalgonda which is a government-owned facility attached to the district hospital where ART drugs are provided free of charge.

A pilot study was conducted from 1st to 15th of October on 30 patients to assess feasibility of the research project, refine questionnaire and establish content validity. The interview and clinical examination was conducted from 1st December 2012 to 28th February 2013. The questionnaire used was semi structured with questions about socio demographic data, relevant anthropological, behavioral, clinical and laboratory variables. The above data was collected after acquiring written informed consent from the patient. The research study was approved by the Institution Ethics Committee of Kamineni institute of medical sciences, Nalgonda. Permission to conduct the study was also obtained from the Medical Superintendent of district hospital, Nalgonda and the district coordinator of hospital services (DCHS). Data obtained was entered in excel sheet and percentages were calculated. Mean and standard deviation were also calculated using Microsoft excel.

#### **RESULTS**

Out of a total of 142 study subjects, 92 subjects (64.8%) were males and 50 (35.2%) were females.

It was observed that 78.88% belonged to economically productive age group (16-45 years). Smaller proportion of the study subjects (21.13%) were seen in more than 45 years age group. The mean age was  $39.33 \pm 10.29$  SD and the range is 18 to 70 (Table 1).

Majority of the study subjects (79.57%) were married, followed by individuals who were widowed, divorced or separated (14.8%). Only a small proportion (5.63%) was found to be unmarried (Table 1).

Proportion of subjects who acquired education between classes 6 and 10 was found to be highest (40.1%). This was followed by individuals who studied up to class 5 and illiterate individuals both representing 28.2% of study subjects respectively. It was found that a very small proportion of individuals studied up to intermediate (1.4%) and graduation (2.1%) (Table 1).

A majority of the subjects were skilled laborers (57%) followed by unskilled laborers who constituted 28.9%. Semiskilled laborers contributed 11.3% to the study subjects whereas professionals were only 2.8% of the total study subjects (Table 1).

Most of the study subjects belonged to lower middle class (32.4%). Majority of the study subjects resided in rural areas (74.6%) and most of the study subjects (88%) belonged to nuclear families (Table 1).

A majority of the patients (95.78%) reported not using condoms during their last sexual act. A proportion of 9.16% of the study subjects reported being previously diagnosed an STD. All the subjects in the present study are heterosexual individuals (Table 2).

Most common presenting complaint found in the present study were fever (51.41%), fatigue and malaise (41.55%) and weight loss (12.68%) (Table 3).

A total of 71 study subjects presented with opportunistic infections. The most common opportunistic infection found was Candidiasis and Tuberculosis both contributing 19.72% respectively (Table 4).

Most of the study subjects were found to belong to the stage 1 HIV (51.4%), followed by stage 3 (36%). Stage 2 contributed 7.7% followed by stage 4 (4.9%) (Table 5).

Majority of the patients were found to be under weight (55%). The mean BMI was found to be  $18.02 \pm 2.72$  SD, with a range of 12 to 24.6 kg/m<sup>3</sup> (Table 5).

Majority of the patients had CD4 count between 201-350 cells/mm<sup>3</sup> (69%), followed by patients with CD4 count less than 200 cells/mm<sup>3</sup> (25.4%). Only 5.6% had CD4 counts above 350 cells/mm<sup>3</sup>.Mean CD4 count value was 260.24±77.45 SD with a range of 80 to 429 cells/mm<sup>3</sup> (Table 6).

Majority of the patients (95.1%) had severe anemia, followed by moderate and mild at 2.8% and 2.1% respectively. None of the patients were non anemic. Mean hemoglobin value was  $6.5\pm1.04$  SD, with a range of 4 to 11.2 gm/dl (Table 6).

Table 1: Distribution of study subjects based on socio demographic characteristics (n=142).

Variable	Males n=92 (%)	Females n=50 (%)	Total n=142 (%)
Age (years)			
15- 25	4 (2.817)	4 (2.817)	8 (5.63)
26-35	33 (23.24)	23 (16.2)	56 (39.44)
36-45	34 (23.94)	14 (9.86)	48 (33.8)
≥46	21 (14.79)	9 (6.34)	30 (21.13)
Marital status			
Married	72 (50.7)	41 (28.87)	113 (79.57)
Unmarried	4 (2.817)	4 (2.817)	8 (5.63)
Widowed/ divorced/separated	16 (11.27)	5 (3.52)	21 (14.8)
Education			
Illiterate	32 (22.53)	8 (5.63)	40 (28.2)
Upto 5 <sup>th</sup> class	27 (19)	13 (9.2)	40 (28.2)
6 <sup>th</sup> to 10 <sup>th</sup> class	29 (20.4)	28 (19.7)	57 (40.1)
Intermediate	1 (0.7)	1 (0.7)	2 (1.4)
Graduate	3 (2.1)	0 (0)	3 (2.1)
Occupation			
Unskilled	33 (23.2)	8 (5.6)	41 (28.9)
Semi skilled	6 (4.2)	10 (7)	16 (11.3)
Skilled	50 (35.2)	31 (21.8)	81 (57)
Professional	3 (2.1)	1 (0.7)	4 (2.8)
Socio economic status(Modifie	d B.G prasad classification)		
Upper high	2 (1.4)	5 (3.5)	7 (4.9)
High	20 (14.1)	23 (16.2)	43 (30.3)
Upper middle	23 (16.2)	7 (4.9)	30 (21.1)
Lower middle	36 (25.4)	10 (7)	46 (32.4)
Poor	11 (7.7)	5 (3.5)	16 (11.3)
Place of residence			
Rural	67 (47.2)	39 (27.5)	106 (74.6)
Urban	25 (17.6)	11 (7.7)	36 (25.4)
Type of family			
Nuclear	82 (57.7)	43 (30.3)	125 (88)
Joint	8 (5.6)	5 (3.5)	13 (9.2)
3 generation	2 (1.4)	2 (1.4)	4 (2.8)

Table 2: Distribution of study subjects based on sexual history (n=142).

Variable	Males n=92 (%)	Females n=50 (%)	Total n=142 (%)
Use of condom during last sexual act			
No	3 (2.11)	3 (2.11)	6 (4.22)
Yes	89 (62.68)	47 (33.1)	136 (95.78)
Previous history of STDs			
No	12 (8.46)	1 (0.7)	13 (9.16)
Yes	80 (56.34)	49 (34.5)	129 (90.84)

Table 3: Distribution of study subjects according to presenting complaints (n=142)\*.

Complaints	Number (%)
Fever	73 (51.41)
Fatigue and malaise	59 (41.55)
Weight loss	18 (12.68)
Cough	12 (8.45)
Routine visit	12 (8.45)

Diarrhea	10 (7.04)
Skin lesions	5 (3.52)
Nausea and vomiting	4 (2.82)
Discharge from ear	2 (1.41)
Ulcers in oral cavity	1 (0.7)
Hydrocele	1 (0.7)

<sup>\*</sup>Multiple responses were obtained for this question.

Table 4: Distribution of study subjects according to opportunistic infections at the time of presentation (n=71)\*.

Opportunistic infections	Number (%)
Tuberculosis	28 (19.72)
Oral candidiasis	28 (19.72)
Cryptococcal diarrhea	7 (4.93)
Dermatitis	5 (3.52)
Bacterial infections	2 (1.4)
Herpes zoster	1 (0.7)

<sup>\*</sup>Multiple responses were obtained for this question.

Table 5: Distribution of study subjects based on clinical parameters (n=142).

Variable	Males n=92 (%)	Females n=50 (%)	Total n=142 (%)
WHO clinical staging for HIV			
Stage 1	45 (31.7)	28 (19.7)	73 (51.4)
Stage 2	4 (2.8)	7 (4.9)	11 (7.7)
Stage 3	36 (25.4)	15 (10.6)	51 (36)
Stage 4	7 (4.9)	0 (0)	7 (4.9)
BMI			
Under weight	53 (37.9)	24 (17.1)	77 (55)
Normal weight	38 (27.1)	25 (17.9)	63 (45)

Table 6: Distribution of study subjects based on laboratory parameters (n=142).

Variable	Males n=92 (%)	Females n=50 (%)	Total n=142 (%)
CD4 count (in cells/mm <sup>3</sup> )			
Upto 200	28 (19.7)	8 (5.6)	36 (25.4)
201-350	59 (41.5)	39 (27.5)	98 (69)
>350	5 (3.5)	3 (2.1)	8 (5.6)
WHO grading of anemia			
No anemia	0	0	0
Mild	2 (1.4)	1 (0.7)	3 (2.1)
Moderate	3 (2.1)	1 (0.7)	4 (2.8)
Severe	87 (61.3)	48 (33.8)	135 (95.1)

#### **DISCUSSION**

Our study found that a majority of the subjects (78.88%) belonged to economically productive age group (16-45 years). This finding was corroborated by study done by Sood et al, where 85.2% patients belonged to 24 to 44 years of age.<sup>5</sup> Similar findings were found by studies done by Zaheer et al and Verma et al.<sup>6,7</sup>

Married individuals were found to constitute a majority in the present study (79.57%). Similar findings were obtained by studies done by Zaheer et al and Verma et al where 74.59% and 77.1% of study subjects were married respectively.<sup>6,7</sup> Therefore there is an urgent need to

emphasize on barrier methods of contraception and encourage voluntary testing in this population.

The study showed very few patients with higher educational background with graduates representing a slim minority of 2.1%. This was in agreement with the findings of Kumawat et al, where only 4% of study subjects studied till college or above. Hence stressing on education and its importance would have a beneficial role in reducing risk behavior and increasing of disease awareness.

A majority of the subjects were skilled labourers (57%) for example plumbers, carpenters, drivers etc. This

finding was corroborated by study done by Sood et al, where 85.2% patients belonged were skilled workers. Most of the study subjects belonged to lower middle class of BG Prasad classification. This was in agreement with study done by Kumawat et al, where 34.66% of the study population belonged to class 4 socio economic status of BG Prasad. Majority patients belonged to rural background which was in agreement with study done by Sood et al, where 86.2% study population were from rural areas. A majority of the subjects (88%) belonged to nuclear families as corroborated by studies done by Kumawat et al and Sood et al. These populations must be reached in all the education campaigns and must be targeted for behaviour change communication.

A majority of the patients (95.78%) reported not using condoms during their last sexual act and a proportion of 9.16% subjects reported being previously diagnosed an STD. This is in agreement with the results of National Family Planning Programme which reported that condom use in India was only 5.2%. This shows high prevalence of high risk sexual behaviour in this population which is amenable for intervention.

#### Clinical profile

Most common presenting complaints found in the present study were fever followed by fatigue and malaise. These findings were comparable with those of study done by Takalkar et al and Chakravarty who also found that fever was the most common presenting complaint contributing 82.2% and 70.6% respectively. <sup>10,11</sup>

The most common opportunistic infections found in the present study were Candidiasis and Tuberculosis both contributing 19.72% respectively. Our study findings were consistent with other studies done by Mulla et al, Iroezindu et al, where Candidiasis was found to be the most common opportunistic infection contributing 19.44%, 8.6% and 59% respectively. However TB was the most common opportunistic infection in study done by Sood et al. 5

Most of the study subjects were found to belong to the stage 1 HIV (51.4%), followed by stage 3 (36%). Majority of the patients were found to be under weight (55%). Majority of the patients had CD4 count between 201- 350 cells/mm³ (69%). A significant proportion of 95.1% patients were found to have severe anemia. Low BMI and high prevalence of anemia shows poor nutritional status in the study subjects. Therefore nutritional education must be taken up actively in HIV infected patients and must be incorporated as an important program objective.

#### **CONCLUSION**

This study highlights the social background of HIV patients from Nalgonda district of Telangana. These factors could act as possible barriers for patients to remain in care and maintain their adherence to anti-

retroviral therapy (ART). Interventions targeting improvement in socio economic status, education levels, nutritional status as well as awareness about condom use must be built into the national HIV programme to make qualitative improvements in HIV care.

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