ORIGINAL ARTICLE

A CROSS SECTIONAL STUDY ON CLINICO-EPIDEMIOLOGICAL PROFILE OF HIV POSITIVE PATIENTS ATTENDING ART CENTRE AT A TERTIARY CARE HOSPITAL OF WESTERN UTTAR PRADESH

Mukesh Kumar Yadav[1], Jayesh Sharma[1], Arya S Tungvir[2], Arvind Trivedi[2], Bhoomika Khosya[3]

Authors Affiliation: [1]Senior Resident, Dept. of Medicine, Muzaffarnagar Medical College, Muzaffarnagar (U.P.); [2]Professor, Dept. of Medicine, LLRM Medical College, Meerut (U.P.); [3]Postgraduate, Department of Periodontics, MGDCH, Jaipur
Correspondence: Dr Mukesh Yadav, Email: drmukki@gmail.com

ABSTRACT

Background: Acquired immunodeficiency syndrome (AIDS) is a disease caused by the retrovirus human immunodeficiency virus (HIV) and characterised by profound immuno-suppression that leads to opportunistic infections. The present study was conducted with an objective to study demographic and clinical profile of PLWHA attending ART Centre SVBP Hospital Meerut.

Methodology: This cross sectional study was conducted on HIV positive cases registered in ART Centre or admitted in the medicine department of LLRM Medical College, Meerut. A pre-tested semi-structured questionnaire was prepared and information regarding demographic and clinical profile of the cases was collected.

Results: Out of 800 cases, 534 cases (66.75%) were male and 266 cases (33.25%) were female. Mean age of male was 34.62±10.2 years and 32.12 ± 9.62 for female. As many as 54 (6.99%) patients were sputum positive for AFB, 492 (61.48%) patients were anaemic, 276 (34.53%) patients had macrocytic, 182 (22.75%) had microcytic anemia. Physical examination showed 426 (53.29%) febrile, 443 (55.37%) prostration, oral ulcers 81 (10.17%), pigmentation 268 (33.53%), 295 (36.92%) pallor, jaundice was present in 33 (4.19%), Lymphadenopathy 138 (17.36%), genital and skin involvement was 19(2.39%) and 27 (3.39%) respectively.

Conclusion: The present study suggests that HIV/AIDS have highest prevalence in sexually active and economically productive age group, person with low socio-economic status and rural area, more in illiterate and person having lack of knowledge for HIV/AIDS. Fever and prostration was predominant clinical features on presentation.

Keywords: HIV, AIDS, Positive , CLinico-epidemiological profile

INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is a disease caused by the retrovirus human immunodeficiency virus (HIV) and characterised by profound immunosuppression that leads to opportunistic infections, secondary neoplasm, and neurologic manifestation. The magnitude of this modern plague is truly staggering.[1]

By the end of 2006, more than a million cases of Acquired immune deficiency syndrome had been reported in the united states, where Acquired immune deficiency syndrome is the second leading cause of death in men between ages 25 and 44,and third known leading cause of death in women in this age group.[2]

Though initially recognized in the United States Acquired immune deficiency syndrome is a global problem. It has now been reported from more than 190 countries around the world and pool of HIV-infected persons in Africa and Asia is and expanding.

There are about 33-million people living with HIV, of whom 65% are in Africa and over 20% in Asia, the prevalence rate in adult in sub-Saharan Africa is about 8%. It is estimated that 2.5 million people

were newly infected with HIV during 2006 and 2.1 million deaths were caused by AIDS.[3]

At present no cure is available for the person living with HIV/AIDS. Apart from physical symptoms, Stress of being HIV positive and Fear of death further deteriorate quality of life. In HIV positive patients, stress whether chronic or acute produces neuroendocrine and other biological changes that are damaging to immune system.[4] The present study was conducted with an objective to study demographic and clinical profile of PLWHA attending ART Centre SVBP Hospital Meerut.

MATERIALS AND METHODS

This cross sectional study was conducted in the department of Medicine, Lala Lajpat Rai Memorial Medical College, Meerut during May 2011 to July 2012. This study included all the HIV positive cases registered ART Centre or admitted in the medicine department of LLRM Medical College, Meerut. A pre-tested semi-structured questionnaire was prepared and information regarding demographic and clinical profile of the cases was collected. The facts collection sheet are also included detailed evaluation of any complaints and history, detailed clinical examination, Laboratory investigations like Hemoglobin (Hb), Total Leucocyte Count (TLC), DLC, ESR, Platelet count, Blood Sugar, urea, creatinine, S. bilirubin. The radiological investigation included chest X-ray, USG, CT scan. The participants were given the understanding of the study and risk/benefits associated with the study. After that the voluntary informed written consent was taken from the patient before enrolment in the study.

RESULTS

In the present study 800 cases of HIV/AIDS attending the ART centre as well as indoor patients of medical wards were studied for demographical and clinical profile.

Out of 800 cases, 534 cases (66.75%) were male and 266 cases (33.25%) were female. Out of these 800 cases 36 (4.51%) were below 10 years. Maximum 329 cases (41.12%) were between the age group of 30-40 years while only 15 cases (1.87%) were more than 50 years in which most of them are males. In all age groups males are more than females. Male to female ratio was 2:1and mean age of patients was 33.73±10 years. Mean age of male was 34.62±10.2 years and 32.12 ± 9.62 for female. The oldest patient was 80 years old male.

Table 1: **Age and sex distribution, marital status and educational level (n=800)**

	Male (%)	**Female** (%)	**Total (%)**
Age (yrs)			
<10	30 (5.63)	6 (2.25)	36 (4.51)
10-20	16 (2.99)	6 (2.25)	22 (2.75)
20-30	121 (22.65)	68 (25.56)	189 (23.62)
30-40	204 (38.20)	125 (46.99)	329 (41.12)
40-50	151 (28.27)	58 (21.80)	209 (26.10)
>50	12 (2.24)	3 (1.12)	15 (1.87)
Marital Status			
Married	358 (67.02)	145 (54.86)	503 (62.87)
Unmarried	151 (28.30)	35 (13.15)	186 (23.25)
Deceased spouse	25 (4.70)	80 (29.80)	105 (13.5)
Divorced	0 (0)	6 (2.25)	6 (0.75)
Education			
Illiterate	53 (9.92)	65 (24.4)	118 (14.75)
Middle	185 (34.64)	69 (25.94)	254 (31.75)
Primary	139 (26.03)	101 (37.97)	240 (30.0)
Secondary	126 (23.76)	27 (10.16)	153 (19.12)
Graduate	31 (5.80)	4 (1.50)	35 (4.37)

Table 2: **Distribution of HIV/AIDS patients according to socioeconomic status, religion and residence (n=800)**

	Total	**Percentage**
Socioeconomic status		
Low	388	48.5%
Middle	320	40%
Upper	92	11.5%
Religion		
Hindu	543	67.82%
Muslim	239	29.95%
Sikh	18	2.34%
Urban/rural		
Rural	606	75.75%
Urban	194	24.25%

Table 3: Clinical examination finding in HIV/AIDS patients (n=800)

Clinical finding	**Number**	**Percentage**
Fever	426	53.29
Prostration	443	55.37
Oral ulcers / Candidiasis	81	10.17
Pigmentation	268	33.52
Pallor	295	36.92
Cyanosis	0	0
Jaundice	33	4.19
Lymphadenopathy	114	14.36
Genital involvement	19	2.39
Skin involvement	27	3.39

Among 800 cases studied 503(62.87%) were married, 186 (23.25%) unmarried, 80 (10%) widow, 25 (3.12%) widower, and 6 (0.75%) divorced.

Table 4: **Proportion of anemia, MCV and TLC in HIV/ AIDS patients (n=800)**

	Number (%)
Hemoglobin	
Less than 11 gm%	492 (61.48)
More than 11 gm%	308 (38.52)
MCV	
Macrocytic (MCV >98 Femtolitre)	276 (34.53)
Normocytic (MCV 75-98 Femtolitre)	342 (42.71)
Microcytic(MCV <98 Femtolitre)	182 (22.75)
TLC count	
< 4300 cells/cumm	268 (33.53)
>10000 cells/cumm	38 (4.79)
Normal TLC count	494 (61.68)

Table 5: proportion of sputum positivity for AFB in HIV / AIDS patients (n=800)

Sputum AFB	**Total**	**Percentage**
Negative	744	93.01
Positive	56	6.99

According to the education status, 35 (4.37%) were graduate, 118 (14.75%) Illiterate, 254 (31.75%) middle, 240 (30.0%) primary and 153(19.12%) was educated up to secondary. Infection was more common in less educated and illiterate patients.

In 229 (28.64%) cases chest X-Ray was suggestive of tuberculosis, 5 cases showed cardiomegaly, in 5 cases there was pleural effusion and 3 cases were showed bilateral pneumonia. In 558 (69.76%) cases x-ray chest were normal.

DISCUSSION

This is a cross sectional study of 800 patients infected with HIV (in various stages of disease) to determine demographical, clinical, biochemical and haematological profile.

In the present study, female to male ratio was 1:2 and majority of cases 72.03% were in the <40years age group in the both sexes. In the study by Lakshmi et al[5] the female to male ratio was 1:2.33 and majority of cases were <40 years. In the Kumarsamy's study[6] the female to male ratio was 1:2.69 and 91.75% of patients were below 45 years. Singh et al[7] found the female to male ratio1:6.69 in their study. 925 of patients were in the age group 21-40 years. Mean age of patient in our study was 33.73±10 years. During a study of HIV cases at Aligarh by MS Zaheer[8] mean age of patient was 29 ±2 years and M:F ratio was 2.4:1. Maximum incidence was seen in age group 30-40 years (41.12%). The gender distribution in our study was similar to most of studies.

In the present study majority of patients was married 62.87% followed by unmarried 23.25% and those with deceased spouse were 13.50%. In MS Zaheer study[8] from Aligarh, 77.1% was married and 22.09% was unmarried. Ghate et al[9] from Maharashtra reported a study of 137 patients in which 66% was married and 21% unmarried. These results are similar to most of studies.

In the present study most of patients was educated upto middle 31.75% followed by primary 30% illiterate was 14.75% and patients educated upto graduate was 4.37%. Effective Literacy rate of UP is 71.2% (Rural-68.4% and Urban-81%). Literacy rate of female is 60.3% and male is 81.3%[10]. Sircar et al[11] finds 74% illiterate and only 4% were educated upto graduation. In a study by Lakshmi et al[5] 68% patients was educated upto primary and 13% upto secondary and only 3% were graduate. This finding indicate that literacy rates had increased from previous level and most of patients had low education and lack knowledge about HIV/AIDS.

In our study majority of patients belong to middle class 320/800 (40%) and low 388/800 (48.5%) and only small number was seen in upper class 92/800 (11.5%). In SK Agrawal's study[12] from Delhi 54% cases was from middle class whereas 36% from low socioeconomic status.In Lakshmi et al[5] study 80% cases were from lower class. This finding reflects that economic standard of population had raised from low to middle as sources of income had increased due to industrialization and multinational companies are providing job opportunities.

In our study 606/800 (75.75%) cases were from rural areas and 194/800 (24.25%) from urban areas. In India rural population is 74.2%.[10] In Lakshmi et al[5] 86%cases were from rural and 14% from urban areas. In MS Zaheer's[8] rural patients was 58.3% and rest of them urban. In SK Agrawal's[12] study 56% patients was rural and 44% urban this indicates that HIV/AIDS is changing trends as increased from rural to urban and lower class to middle class.

In our study of 800 cases 443 (55.37%) had toxic look, 426(53.3%) were febrile and pallor was seen in 295(36.9%) followed by lymphadenopathy, oral ulcers / candidiasis and genital ulcers in 114 (14.36%), 81 (10.17%) and 19 (2.39%) cases respectively. Ghate et al[9] observed oral ulcers /candidiasis in 11.6% (16/137) of cases and lymphadenopathy in 34.3% (47/137). Chacko et al[13] observed oral ulcers in 41% cases and Sircar et al[11] found oral ulcer seen in 40.3% cases.

Table 6: Prevalence of TB and Oral Ulcer in HIV disease in different studies

Study	Patients	TB	Oral Ulcer
Chacko et al (1995) [13]	61	52%	44%
Sircar et al (1998)[11]	74	54.8%	48.3%
Lakshmi et al (1998)[5]	643	25%	6%
Ghate et al(2000)[9]	137	21.1%	11.6%
Kumarsamy(2003)[6]	594	60.4%	54.5%
Singh(2003)[7]	100	56%	65%
Rupali(2003)[17]	100	69%	37%
Present Study	800	29%	10.1%

In our study 61.48% patients had Hb. less than 11 gm%, leucopenia in 268 (33.5%) and 38 (4.7%) cases showed leucocytosis. Most of the cases of macrocytic anaemia were due to ART (Zidovudine). In a study conducted by Robert R Rich[14] anaemia was observed in 70% of cases. The incidence and severity increases with progression of disease, and anaemia characteristically normocytic in most cases. Similar results found in our study.

In a study in Australia, leucopenia is common entity in 38% of cases and independent risk factor for bacterial infections. According to Robert R. Rich[14] leucopenia occurs in approximately 50% of HIV patients.

As per NACO guidelines sputum examination is mandatory even if X- ray chest is normal. In our study only 56/800 (6.9%) cases were positive for AFB and 229 (28.6%) had evidence of tuberculosis on X-ray chest. Five cases had cardiomegaly and five case of tubercular pleural effusion were found. In SK Agrawal's[12] study (2003) sputum for AFB was positive in 30% cases and 57% patients showed evidence of tuberculosis on radiology. In a study by Andrade et al[15] from Bolivia sputum positivity for AFB was 56% and X-ray evidence of TB seen in 38.5% cases. In another study from Brazil by Selig L et al[16] the median age was 35 years, 78.5% were male, 60.7% patients had evidence of pulmonary TB and 64% had oral thrush.

CONCLUSION

The present study suggests that HIV/AIDS have highest prevalence in sexually active and economically productive age group, person with low socioeconomic status and rural area, more in illiterate and person having lack of knowledge for HIV/AIDS. Fever and prostration was predominant clinical features on presentation.

REFERENCES

1. Robbins and cotran Pathologic basis of Disease, 8th Edition,Elsevier publication.2010.235-238.
2. UNAIDS (2006). Report on the global AIDS epidemic'.
3. UNAIDS (2010). Global Report, UNAIDS report on the global AIDS epidemic.
4. Leserman J, Eric D et al. Progression to AIDS: Th effects of stress, Depressive symptoms and socid support. Psycho Somatic Medicine 1999; 61: 397-406.
5. Lakshmi V, Teja VD, Sudha Rani T, Subhadha K, Upadhyaya AC, Shantaram V. HIV infection in a tertiary care hospital clinical and microbiological profile. J. Assoc. Phy. Ind. 1998: 46, 363-67
6. Kumarasamy N, Soloman S, Flanigan TP, Hemalata R, Thyagrajan SP, Mayer KH, Natural history of human immunodeficiency virus disease in southindia. Clin Inf Dis 2003;36:79-85
7. Singh A, Bairy I, Shivanada PG. Spectrum of opportunistic infections in AIDS cases. Indian J Med Sci2003; 57:16-21.
8. M Shoaib Zaheer, Zuber Ahmad. Lower lung field tuberculosis – A clinical study. JIACM 2003; 4(2): 116-20.
9. Ghate MV, Mahendale SM, Mahajan BA, Yadav R, Brame RG, Divakar AD,et al Relationship between clinical condition and CD4+ count in HIV infected persons in Pune, Maharashtra, India. Nat Med J India2000;13:183-7.
10. www.censusindia.gov.in assessed on 15 oct.2012.
11. Sircar AR, Tripathi AK, Choudhary SK, Mishra R. Clinical profile of AIDS: study at referral hospital. J Assoc Phy India 1998;48:775-8.
12. S.K. Agarwal, Aman Makhija, N.P. Singh, Anupam Prakash and U.K. Baveja. Tuberculosis in hiv/aids patients in a tertiary Care hospital in delhi. Ind. J.Tub., 2003, 50,163.
13. Chacko S, John TJ, Babu PG, Jacob M, Kaur A, Mathi D. Clinical profile of AIDS patients in India; A review of 61 cases. J Assoc Physicians India 1995;43:535-38
14. Robert R, Rich:Clinical immunology vol. 1 Pg. 717-18.
15. Andrade et al. Incidence of TB in AIDS in Bolivia –Int. conf. AIDS1994 Aug 7-12.
16. SELIG L, et al int. conf. AIDS 1998:12:290 "Clinical aspect of TB in adult AIDS patients in Brazil
17. Rupali P, Abraham OC, Zachariah A, Subramanian S, Mathi D, Aetiology of prolonged fever in antiretroviral-naïve human immunodeficiency virus infected adults. Nat Med J India2003;16:193-96.