

Clinical and Socio demographic profile of attendees at ART centre in a tertiary care hospital in Mangalore, India

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ABSTRACT

Introduction: India has the third largest number of people living with HIV/AIDS. There is a need to study the profile of patients who come to ART centers and link their clinical and socio-demographic variables in the management. Moreover, it is important to understand the presentation of HIV disease in the local context and culture. The present study is aimed at identifying the socio-demographic characteristics, clinical presentations of HIV/AIDS patients, opportunistic infections and the possible risk factors for acquiring HIV infection at an ART centre of Government Wenlock hospital, situated in Karnataka state of India. **Materials and Methods:** In this study 102 HIV patients attending the HIV clinic were enrolled and they were followed for a period of one year with relevant investigations. **Results:** Of 102 patients 69 were males and 33 were females. The mean age of the study subjects at the time of diagnosis was 38.06. Heterosexual contact was the commonest mode of transmission in 96 (94.12%) patients. History suggestive of a risk factor for HIV transmission could not be elicited in 4 (3.92%) patients. Fever (71.5%), weight loss (62.74%), cough (51.96%) and chronic diarrhea (43.9%) were the common presenting symptoms. The most common opportunistic infection was oral candidiasis (66.67%) followed by tuberculosis (22.54%) and pneumocystis pneumonia (13.72%). Significant number of patients (30.37%) developed Zidovudine induced anemia and females were more prone for Zidovudine induced anemia as compared to males. CD4 counts of the patients were significantly inversely correlated with the number of symptoms and the number of opportunistic infections. **Conclusion:** Majority of patients were of low socioeconomic status and in productive age group with heterosexual contact being commonest mode of transmission. Significant number of patients developed Zidovudine induced anemia and females were more prone.

Keywords: HIV, ART Centre, sociodemographic profile

INTRODUCTION

India has the third largest number of people living with HIV/AIDS. There are an estimated 23.9 lakh people currently living with HIV/AIDS in India with an adult prevalence of 0.31 percent in 2009 as per the 2008-09 HIV estimates.¹ HIV has become the first truly international epidemic easily crossing the oceans & borders. Despite the improved access to antiretroviral therapy (ART) & care in many regions of the world AIDS has killed millions of people.² HIV/AIDS is no longer just a public

health issue in India but become one of the most serious socioeconomic & developmental concerns, because maximum no of reported cases are occurring in sexually active & economically productive age group (15-44yrs). Deaths of young adults have an especially damaging impact on their families and communities, skills are lost, work force shrinks & children's are orphaned.³ Though, ART does not cure HIV/AIDS, but effective ART regimens inhibit the efficient replication of the HIV virus, and reduce viremia to undetectable levels. The Government of India launched the free ART programme on 1 April

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2004, since then more and more patients are put on ART treatment with rapid expansion of the programme.⁴ Spread of HIV in India is heterogeneous. Most infections occur through heterosexual transmission.¹ The HIV prevalence among the High Risk Groups, i.e., Female Sex Workers, Injecting Drug Users, Men who have Sex with Men and Transgender is higher than the general population. Adult HIV prevalence at national level has declined from 0.41% in 2000 to 0.31% in 2009.

There is a need to study the profile of patients who come to ART centers and link their clinical and socio-demographic variables in the management. Moreover, it is important to understand the presentation of HIV disease in the local context and culture. The present study is aimed at identifying the socio-demographic characteristics, clinical presentations of HIV/AIDS patients, opportunistic infections and the possible risk factors for acquiring HIV infection at an ART centre of Government Wenlock hospital, situated in Karnataka state of India.

MATERIALS AND METHODS

The present study was a prospective study conducted at the Government Wenlock hospital, Mangalore. HIV positive patients qualified to be enrolled into the study were those who were newly started on ART between August 2011 and August 2013. Total 102 patients were followed for one year. A written informed consent was taken from all the patients. History and physical examination was done and recorded on a pre-designed schedule which included the socio-demographic profile of the patients, mode of transmission, presenting symptoms, opportunistic infections etc. Patients were offered antiretroviral therapy if their CD4 lymphocyte count was less than <350 cells/ml. Trimethoprim-Sulphamethoxazole prophylaxis was given to prevent *Pneumocystis Carinii* pneumonia in all patients with a CD4 lymphocyte count of <200 cells/ml. The patients were followed up every 3-6 months during which their weight, hemoglobin level and CD4 lymphocyte count were determined. Relevant investigations were done during the follow up period. Data was entered and analyzed using a statistical software package (SPSS version 17.0). Ethical approval was obtained from the Institutional Ethics Committee.

RESULTS

The distribution of patients according to the age showed that, the maximum number of males 38 (55.07%) as well as females 28 (84.84%) were in the age group of 20-39 years. Maximum patients i.e. 69 (67.64%) were residing in rural area while 33 (32.35%) in urban area. In the present study,

out of 102 patients, 19 (18.62%) were illiterate while 83(81.37%) were literate. Maximum numbers of illiterate patients were females (57.9%) as compared to males (42.1%). Among the patients studied 77 (75.49%) were married. Most of them were working as laborers/farmer (50%), housewife (15.6%) and drivers (8.82%). Laborers include the agricultural as well as nonagricultural laborers (Table 1). The most common presenting complaints were fever, weight loss, cough and chronic diarrhea (Table 2). As expected majority of the patients belonged to the sexually active age group of 20 to 40 years, commonest mode of acquiring the infection was through heterosexual contact (94.12%) (Table 3). None of the patients gave a history of drug abuse or mother to child transmission in present study. Out of the 102 patients, 62 (60.78%) were on ZDV+3TC+NVP combination and 17 (16.66%) were on ZDV+LMV+EFV (Table 4).

Oral candidiasis (66.7%) was the most common opportunistic infection. Other presentations like tuberculosis, pneumocystis carinii pneumonia, cryptococcal meningitis, esophageal candidiasis, herpes zoster

Table 1: Distribution of patients by Occupation

Occupation	Number	Percentage
Skilled	11	10.78
Unskilled	51	50
Semiskilled	8	7.84
House wives	16	15.68
Drivers	9	8.82
Business man	2	1.96
Commercial sex worker	2	1.96

Table 2: Presenting complaints

Presenting complaints	Number	Percentage
Fever	73	71.5
Weight Loss	64	62.74
Cough	53	51.96
Weakness	32	31.37
Anorexia	28	27.4
Diarrhoea	22	21.56
Breathlessness	17	16.6
Lymphadenopathy	17	16.6
Headache	12	11.76
Pain abdomen	9	8.8
Myalgia	4	3.92
Seizure	4	3.92
Odynophagia	8	7.84
Jaundice	3	2.94

Table 3: Mode of transmission

Mode of transmission	No. of patients	Percentage
Heterosexual	96	94.12
Homosexual	1	0.98
Blood transfusion	1	0.98
Not specified	4	3.92

and toxoplasmosis were noted (Table 5). As the number of CD4 count decreased, incidence and the number of opportunistic infections per patient increased. As per the WHO staging 49 (48.03%) patients were in stage 3 (Table 6). Of the 79 patients on Zidovudine based regimens 24 (30.37%) patients developed Zidovudine induced anemia. Out of 24 patients who developed Zidovudine induced anemia 14 were males and 10 were females (Table 7). Of the 78 patients on Nevirapine based regimens 6(5.88%) developed allergic reactions and 3(2.94%) patients developed Steven Johnson syndrome for which regimens were changed.

DISCUSSION

The overall male patients (67.64) outnumbered female (32.35%) patients and male to female ratio is 2.09:1. In the NACO annual report 2011-12 sex distribution shows 56.6% males and 39% females. Male preponderance was also observed in the study conducted by Ahmad et al⁵

Table 4: Regimens initiated

Regimens initiated	Frequency	Percentage
ZDV+LMV+NVP	62	60.78
ZDV+LMV+EFV	17	16.66
STV+LMV+NVP	16	15.68
STV+LMV+EFV	7	6.86

Table 5: Opportunistic infections

Opportunistic Infections	Number	Percentage
Oral candidiasis	68	66.7
Tuberculosis	23	22.54
Pcp	14	13.72
Cryptosporidiosis	12	11.76
Toxoplasmosis	3	2.94
Oesophageal candidiasis	11	10.78
Herpes zoster	7	6.86
Molluscumcontagiosum	2	1.96
Bacterial pneumonia	14	13.72

Table 6: Number of patients in different WHO clinical stages

WHO stage	Number	Percentage
Stage 1	14	13.72
Stage 2	21	20.58
Stage 3	49	48.03
Stage 4	18	17.64

Table 7: Zidovudine induced anemia and gender distribution

Gender	Not developed ZIA	Developed ZIA
Males	55	14
Females	24	10
Total	79	24

and Singh et al.⁶ In this study age distribution showed highest incidence in the age group 18-49 (90.2%) which was similar to NACO annual report 2011-12 which states that incidence is highest in 15-49 (83%) age group which indicates that maximum were in sexually active and productive age group. Similar results were seen in study done by Sonani et al.⁴

In the present study out of 102 patients, 83(81.37%) were literate while 19(18.62%) were illiterate. Among literate maximum number of patients i.e.49 (48.04%) were educated upto secondary school. These findings were more or less similar to study conducted by Joshi et al⁷ and Joge et al.⁸

Maximum patients i.e.69 (67.64%) were residing in rural area while 33(32.35%) in urban area. Similar findings were reported by Joardar et al⁹ and Joge et al.⁸ With regard to marital status majority of patients were married (75.49%). High number of married persons having HIV/AIDS was also reported by Jayrama (70.3%).¹⁰ Of the 69 male patients, only 3(4.34%) had circumcised penis. According to Scabo and Short¹¹ male circumcision provides two fold to eight fold protective effect against HIV. The present study shows very less percentage of HIV cases are having circumcised penis.

The predominant mode of transmission was through unprotected heterosexual intercourse (94.12%). More or less similar findings were reported by Gupta¹² (97%) and Kothari.¹³ But findings were not in accordance with Singh et al⁶ who reported intravenous drug abuse (53.71%) as the predominant mode of transmission. Chakravarty et al¹⁴ also found that the most common mode of transmission was heterosexual (80.04%). As far as risk factors are concerned, two female patients were Commercial sex workers (CSW), and only one male patient gave history of men having sex with men (MSM), the reason could be the social taboos associated with the practice of these risk factors.

Out of 102 patients 62(60.78%) were started on ZDV+LMV+NVP regimen followed by 17(16.66%) on ZDV+LMV+EFV regimen,16(15.68%) on STV+LMV+NVP regimen and 7(6.86%) on STV+LMV+EFV regimen. In a study done by Deshpande et al¹⁵ 47.26% patients were started on ZDV+LMV+NVP, 31.51% were started on STV+LMV+NVP, 10.28% were started on ZDV+LMV+EFV and 10.95% were started on STV+LMV+EFV regimen. In a study done by Bachani et al¹⁶ 71% of patients were started on STV+3TC+NVP and ZDV+3TC+NVP was prescribed to 28% of the patients. In present study 49 (48.03%) patients were in WHO clinical stage 3 which was similar to a study done by Deshpande et al¹⁵ where 42.77% patients were in stage 3.

Oral candidiasis (66.7%) was the commonest opportunistic infection followed by tuberculosis (22.54%) in our study which was different from the study done by Deshpande et al¹⁵ where tuberculosis (62%) was the commonest opportunistic infection. Chakravarty et al¹⁴ also reported tuberculosis (38.8%) to be the most common opportunistic infection, followed by candidiasis (20.3%) and diarrhea (12.7%) which does not match our observation. As the number of CD4 cells decreased, incidence and the number of opportunistic infections per patient increased and a highly significant inverse correlation has been observed between the two variables ($p < 0.001$). Similar results were seen in study done by Chakravarty et al.¹⁴

We found that fever was the most common presenting complaint followed by weight loss and cough and was comparable with previous studies done by Boruah et al¹⁷, Tsega¹⁸ and Deshpande et al.¹⁵ Though numerous other studies have reported about some other complaints like problem in conception¹⁹, fertility²⁰ and neurological disorders²¹ we did not note any such problems in our patients.

Out of total 79 patients on Zidovudine based regimens 24(30.37%) developed Zidovudine induced anemia which was statistically significant($p < 0.001$). Similar results were seen in a study done by Rajesh R et al²² where it was 34.54% but, Agarwal et al²³ in his study found Zidovudine induced anemia in only 16.2% of patients. The mean time for the development of anemia was comparable to other studies. In majority of our patients, anemia developed within 6 months of start of therapy as reported in other studies.²⁴⁻²⁶

Zidovudine induced anemia developed in 14 out of 55 males and 10 out of 24 female patients who were on Zidovudine based regimens. Maximum number of female patients (41.67%) on Zidovudine based regimens developed anemia when compared to males (25.45%) and results were comparable to study done by Agarwal et al.²³ Out of total 78 patients who were on Nevirapine based regimens 3(2.94%) patients developed Nevirapine induced Steven Johnson syndrome and 6(5.88%) developed Nevirapine induced allergy which was not statistically significant. Majority of patients presented with an initial CD4 count of less than 300cells/ μ l which was consistent with the studies done by Sharma et al²⁷ and Deshpande et al.¹⁵ We found that CD4 count increased after 6 months and 1 year which was statistically significant ($p < 0.001$) and more or less similar to the results of Chakravarty et al.¹⁴

CONCLUSION

Our study found that most of the affected population was from reproductive age group which increases the economic

burden and affects the overall development of the family, community and country. Labourer, which was the most common occupation found to be affected acts as a link population between high risk groups to general population and between urban and rural areas. Heterosexual route was the commonest mode of transmission. Fever, weight loss and cough were the most frequent presenting symptoms and oral candidiasis was the most common opportunistic infection. Significant number of patients (30.37%) ($p < 0.001$) developed Zidovudine induced anemia. Females were more prone for Zidovudine induced anemia when compared to males. Most of the patients developed anemia within 6 months of start of therapy.

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UBN- Concept, Design, Review of Manuscript; SN- Data Collection, Analysis of results; BA- Concept, Design of study, Preparation of Manuscript, Revision & Edition

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