

## **Socio demographic and clinical profile of HIV patients attending ART centre of Susheela Tiwari Hospital, Haldwani, Uttarakhand.**

S.S. BAGHEL and S. SRIVASTAVA

*Department of Foods and Nutrition, College of Home Science, G.B. Pant University of Agriculture and Technology, Pantnagar-263145 (U.S. Nagar, Uttarakhand)*

**ABSTRACT:** The study was conducted at Anti Retroviral Therapy (ART) centre of Susheela Tiwari Hospital, Haldwani, Distt. Nainital, Uttarakhand. The data for the study was collected by personal interview and case study. The study revealed that majority of the subject, 41.84 and 55.45 per cent were in the age group 18-30 and 30-60 years, respectively. A 77.28 per cent subjects were literate but only 10.92 per cent subjects were graduates. Majority of subjects were married (56.36 per cent), living in nuclear family (80.90 per cent) and had family size of 1-4 members (70.90 per cent). A 66.74 per cent subjects were working and majority (30 per cent) of them had private job. Heterosexual transmission was observed in 82.73 per cent. Majority of subjects were on ART and only 1.81 per cent subjects were not on ART. Majority of the subjects (56.37 per cent) were diagnosed HIV infection within a period of one year while 60.18 per cent subjects ART was initiated in that period. Majority (73.64 per cent) of the subjects were in I stage of infection with a mean CD4 count and Hb of  $303.05 \pm 133.5$  cells  $\text{mm}^3$  and  $10.88 \pm 2.15$  g/dl, respectively.

**Key words:** ART, AIDS, CD4, HIV

India has the third largest number of people living with HIV/AIDS (NACO, 2011) and is one of the largest and most populated countries in the world. In India over one billion population have a prevalence rate of 0.3 percent which equates to around 2.4 million people living with HIV (UNAIDS, 2011). The epidemic is affecting all sectors of Indian society, not just the groups such as sex workers and truck drivers who were originally associated with it. In a country where poverty, illiteracy and poor health are rife, the spread of HIV presents a daunting challenge.

HIV is the cause of the spectrum of disease known as HIV/AIDS. HIV is a retrovirus that primarily infects components of the human immune system such as CD4+ T cells, macrophages and dendritic cells. It directly and indirectly destroys CD4+ T cells (Thorne and Newell, 2000). There are three main stages of HIV infection: acute infection, clinical latency and AIDS. Acute infection and clinical latency are asymptomatic stages and with drugs, diet and healthy habits results in prolonged survival, decreased opportunistic infection, slower disease progression, decreased mortality and improved quality of life (Lazzaretti *et al.*, 2012; Shievitz and Knox, 2001). AIDS (acquired immunodeficiency syndrome) is symptomatic and end stage of disease is defined in terms of either a CD4+ T cell count below 200 cells per  $\mu\text{L}$  or the occurrence of specific diseases or

opportunistic infection in association with an HIV infection. ([www.cdc.gov](http://www.cdc.gov)).

In Uttarakhand more than 270 full-blown AIDS cases have been detected, prompting authorities to launch a vigorous anti-pandemic campaign in the hill state. Dehradun district has the maximum number of HIV positive cases totalling 944, followed by Nainital with 264, while Haridwar has 114 HIV positive patients (<http://www.outlookindia.com>).

Socio demographic profile is important to understand the role of socio economic status to control the transmission and treatment of HIV/AIDS. Many studies show a positive trend among components of socio economic status (SES) (income, education, occupation/employment) and adherence to antiretroviral therapy (Peltzer and Pengpid, 2013). There is profound effect of social and economic inequality on health outcome viz. mortality, morbidity and life expectancy. Strong association was also found between income and mortality (Wilkinson, 1992 and Kaplan, 1996).

ART (Anti Retroviral Therapy) is vital in the management of patients with HIV and its widespread use has marked decline in the incidence of AIDS defining condition in the developed and developing countries. ART suppresses HIV replication in the body and thus

prevent HIV associated morbidity and mortality thus improving the quality of life in patients with HIV infection (Palella *et al.*, 1998 and Kumarasamy *et al.*, 2005).

The present study was aimed to study socio demographic and clinical profile of HIV/AIDS patients attending at ART centre of STH, Haldwani.

## MATERIALS AND METHODS

The study was conducted from August 2013 to October 2013 at ART centre of Susheela Tiwari Hospital, Haldwani. The ART centre started in 2010, funded by NACO. A 110 non-pregnant, non-lactating and asymptomatic adult HIV/AIDS patients were randomly selected for the study. A written consent was obtained from the patient for their willingness to participate in the study. The data for the study was collected by:

**Personal Interview:** Personal interview was carried out by the researcher with the help of pre designed semi structured questionnaire which contained questions regarding socio demographic and clinical information.

**Case Record:** Individual case record was used to get the information about mode of transmission of infection, stage of illness and routine blood examination for CD4 count and Hb.

## RESULTS AND DISCUSSION

The investigation was done to study the socio-demographic and clinical profile of HIV/AIDS patients attending ART centre of Susheela Tiwari Hospital, Haldwani. Data related to socio demographic profile of the subjects has been given in Table 1. The per cent of male and female subjects were 47.27 and 52.73, respectively. The per cent of the subjects in the age groups 18-30, 30-60 and above 60 years were 41.82, 55.45 and 2.73, respectively.

Many studies have reported that most of the HIV/AIDS patient were in the age group 20-50 years of age thus affecting the economically productive and socially active group and thus having a tremendous impact on the livelihood of the affected family (Sonani *et al.*, 2011; Deshpande *et al.*, 2012 and Mandal *et al.*, 2000).

The literacy level of the subjects revealed that 77.28 per cent of subjects were literate and 22.72 per cent of subjects were illiterate. Among literate only 10.92 per

**Table 1: Socio-demographic profile of the subject**

	N 110	
	Number	Per cent
Sex		
Male	52	47.27
Female	58	52.73
Age (years)	46	41.82
18-30	61	55.45
30-60	3	2.73
>60		
Educational status	25	22.72
illiterate	16	14.55
Primary	18	16.36
Middle	23	20.90
High School	16	14.55
Intermediate	8	7.27
Graduate	4	3.65
Post graduate		
Religion	53	48.18
Hindu	50	45.45
Muslims	7	6.37
Sikh		
Marital status		
Married	62	56.36
Unmarried	10	9.09
Widow/widower	35	31.82
Separated	3	2.73
Type of family		
Nuclear	89	80.90
Joint	21	19.1
Family size		
0-4	78	70.90
5-8	21	19.09
Above 8	1	10.01
Occupation		
House wife	35	31.81
Private job	33	30
Government job	2	1.81
Labour	13	11.81
Self employed	10	9.90
Farmer	17	15.45
Retired	2	1.81
Activity		
Sedentary	69	62.7
Moderate	41	37.3
Per capita income (Rs/month)	2125±1512	
Mean ± SD	(300-7500)	

cent were graduates and the majority of the subjects (66.36 per cent) had education up to intermediate. Deshpande *et al.* (2012) and Jayaram *et al.* (2008) reported that the low educational status of seropositive

patients and less awareness regarding safe sex can be the reason for high prevalence among this group of people.

The religion wise distribution shows that 48.18 per cent of subjects were Hindus and 45.45 and 6.37 per cent were Muslim and Sikh respectively. Majority (56.36 per cent) of subjects were married and 9.09, 31.82 and 2.73 per cent were unmarried, widow/widower and separated, respectively. A large per cent of subjects (80.90) were from nuclear family and only 19.1 per cent of subjects were living in joint family. Majority (70.90 per cent) of subjects had small family size (0-4) while 19.09 and 10.01 per cent subjects had family size of 5-8 and above 8 members, respectively.

A 62.7 per cent of subjects were engaged in sedentary activity and rest 37.3 per cent were moderate worker. Per cent of working subjects were 68.19 while non working subjects were 31.81 per cent. Among nonworking all were females and housewives. Among working subjects majority of subjects (30 per cent) had private job and 15.45, 11.81, 9.90, 1.81 and 1.81 per cent subjects were farmers, labourer, self employed, government job and retired respectively. The per capita income per month of the subjects was Rs. 2125±1512, ranged (300-7500). Deshpandey *et al.* (2012) found that patients were from the lower middle and lower socio-economic classes. Most of them were working as laborers/farmer (55%), housewife (14.2%) and drivers (4.8%). Mandal *et al.* (2000) found that the main risk groups were truck drivers and labourers.

The study shows that the majority (52.73 per cent) were located in plain where as 39.09 and 8.18 per cent of subjects were located in hill and bhabhar region, respectively.

Clinical profile of the subjects has been presented in Table 2. The most common mode of transmission of virus was heterosexual transmission in 82.73 per cent subjects followed by unsafe needles, blood transfusion, unknown and ID user in 5.45, 4.55, 6.36 and 0.91 per cent of subjects, respectively.

In 56.37 per cent subjects the HIV positive status was diagnosed within 1 year period where as in 15.4 and 28.23 per cent subjects the HIV status was diagnosed in 1-2 and more than 2 years, respectively. Only 1.81 per cent subjects were not on ART and of those already on ART 60.18 per cent of the subjects ART started within 1 year and remaining 13.89 and 25.93 per cent of the subjects ART started from a period of 1-2 and more than 2

**Table 2: Clinical Profile of subjects**

	N 110	
	Number	Per cent
<b>Mode of transmission</b>		
Heterosexual transmission	91	82.73
Unsafe needles	6	5.45
Blood transfusion	5	4.55
Unknown	7	6.36
ID user	1	0.91
<b>Period of illness/ diagnosis</b>		
<1 year	62	56.37
1-2 Years	17	15.4
>2 years	31	28.23
<b>Period of ART</b>		
< 1 year	65	60.18
1-2 years	15	13.89
> 2 years	24	25.93
<b>Stage of disease (WHO)</b>		
I	81	73.64
II	11	10
III	10	9.09
IV	8	7.27
<b>CD4 cell count( cells mm<sup>-3</sup>)</b>		
Mean±SD	303.05±133.5	
Ranged	(39-983)	-
<b>Hb (g/dl)</b>		
Mean±SD	10.88±2.15	
Ranged	4.4-16.2	

years, respectively. Majority of subjects (73.64 per cent) were in I stage of infection and rest 10, 9.09 and 7.27 per cent of subjects were in II, III and IV stage of infection, respectively.

Sexual, especially the heterosexual, transmission is the main driver of the epidemic in most of India. Many studies reported heterosexual transmission in 80.4, 90 and 92.3 per cent of subjects (Chakravarty *et al.*, 2006; Deshpande *et al.*, 2012 and Kothari and Goyal, 2001)

The mean CD4 count and Hb of the subjects was 303.05±133.5 cells mm<sup>-3</sup> with a range of 39-983 and 10.88±2.15 g/dl with a range of 4.4-16.2, respectively. Haemoglobin and the CD4 count tells how strong the immune system is. As a response to pathogens, haemoglobin releases free radical, which kills the pathogen by break down of its cell wall and membrane (Iang, 2007) and CD 4 cells are T cells of WBC that play a central role in cell-mediated immunity and indicate how far the disease has advanced and helps predict the risk of complications and debilitating infections (Bonilla *et*

al.,2010). Significant positive correlation was observed between Hb and educational status.

## CONCLUSION

The study concluded that majority of the subjects had low level of education, were socially and economically reproductive age group and majority of the subjects were engaged in unskilled job. The clinical profile of the subjects revealed that they were in I stage of the infection. Adequate treatment includes drug, diet and counselling at this stage of infection helps them to maintain health and slower progression of disease.

## REFERENCES

- Bonilla, F.A. and Oettgen, H.C. (2010). Adaptive immunity, *Journal of Allergy Clinical Immunology*, 125: S33S40.
- Chakravarty, H., Mehta, A., Parekh, SVS., Attili, NR., Agrawal, S.P. and Singh, S.S. (2006). Study on clinico-epidemiological profile of HIV patients in eastern India, *Journal of Association Physicians of India*, 54:554-557.
- Deshpande, J. D., Giri, P. A. and Phalke. D. B. (2012). Clinico-epidemiological profile of HIV patients attending ART centre in rural western Maharashtra, India, *South East Asia Journal of Public Health*, 2(2):16-21.
- Iang, N., Tan, N.S., Ho, B. and Ding, J.L. (2007). Respiratory protein-generated reactive oxygen species as an antimicrobial strategy, *Nature Immunology*, 8(10): 1114-1122.
- Jayaram, S. Shenoy, S. Unnikrishnan, B. Ramapuru, J. and Rao M. (2008). Profile of attendees in voluntary counseling and testing centers of a medical college hospital in coastal Karnataka, *Indian Journal of Community Medicine*, 33:43-46.
- Kaplan, G., Pamuk, E., Lynch, J.W. and Cohen, R.D. (1996). Inequality in income and mortality in the United States: Analysis of mortality and potential pathways. *British Medical Journal*, 312:996-1103.
- Kothari, K. and Goyal, S. (2001). Study of clinical presentation, spectrum of systemic involvement and opportunistic infections in AIDS patients. *Journal of Association Physicians of India*, 49: 435-438.
- Kumarasamy, N., Solomon, S., Chauguturu, S., Cecelia, A., Flanigan, T. and Mayer, K.H. (2005) The changing natural history of HIV disease before and after the introduction of generic antiretroviral therapy in Southern India, *Clinical Infectious Disease* 41, 1525-1528
- Lazzaretti, R. K., Kuhmmer, R., Sprinz, E., Polanczyk, C. A. and Ribeiro, J. P. (2012). Dietary intervention prevents dyslipidemia associated with highly active antiretroviral therapy in human immunodeficiency virus type 1-infected individuals. *Journal of the American College of Cardiology*, 59(11): 979-988.
- Mandal, A.K., Singh, V.P. and Gulati, A.K. (2000). Prevalence of Human Immuno deficiency virus infection in and around Varanasi, Uttar Pradesh, *Journal of Association Physicians of India*, 48: 288-289.
- NACO (2011). Annual Report. Department of AIDS control. National AIDS control organisation. Ministry of health and family welfare, Government of India.
- Outlookexpress(2013).<http://www.outlookindia.com/news/article/AIDS-Cases-Rising-in-Uttarakhand/656079>. Accessed on 22.6.2014.
- Palella, F.J Jr., Delaney, K.M., Moorman, A.C., Loveless, M.O., Fuhrer, J. and Satten, G.A. (1998). Declining morbidity and mortality among patients with advanced human immunodeficiency virus infection. HIV Outpatient Study Investigators, *The New England Journal of Medicine and Surgery*, 338: 853-60.
- Peltzer, K. and Pengpid, S. (2013). Socioeconomic factors in adherence to HIV therapy in low- and middle-income countries. *Journal of Health Population and Nutrition*, 31(2):150-170.
- Shievitz, A. and Knox, T. A. (2001). Nutrition in the era of highly active antiretroviral therapy. *Clinical Infectious Disease*, 32(12), 1769-1775.
- Sonani, H. P., Undhad, A. M. and Savani, G. T. (2011). Clinical and social-demographic profile of patients registered at ART centre, SMIMER, Surat. *National Journal of Community medicine*, 2(1):130-132.
- Thorne, C. and Newell, M.L. (2000). UNAIDS. HIV-Seminars in Fetal and Neonatal Medicine 12 (3): 174181.
- UNAIDS, (2011) UNAIDS. 2010-2011. UNAIDS report on the global AIDS epidemic. Geneva 2010-11. Report No. ISBN 978-91-9173-771-7.
- Wilkinson, R.G. (1992). Income distribution and life expectancy. *British Medical Journal*, 304:165-168.
- [www.cdc.gov/hiv/topics/basicinformation](http://www.cdc.gov/hiv/topics/basicinformation) about HIV and AIDS /CDC 2012. Accessed on 24.6.2014.

Received: August 6, 2014  
Accepted: April 1, 2016