

# Retrospective study of HIV infection in Anti Retroviral Treatment center of Mahendranagar, Nepal

Chapagain RH,<sup>1</sup> Adhikari K,<sup>2</sup> Kamar SB,<sup>3</sup> Singh DR<sup>3</sup>

<sup>1</sup>Department of Paediatrics

<sup>2</sup>Family Health International 360

Kathmandu, Nepal.

<sup>3</sup>Department of Medicine

Mahakali Zonal Hospital

Mahendranagar, Nepal.

## Corresponding Author

Ram Hari Chapagain

Department of Paediatrics

Mahakali Zonal Hospital

Mahendranagar, Nepal.

E-mail: chapagainrh2007@gmail.com

## Citation

Chapagain RH, Adhikari K , Kamar SB, Singh DR. Retrospective study of HIV infection in anti retroviral treatment center of Mahendranagar, Nepal. *Kathmandu Univ Med J* 2016;53(1):54-7.

## ABSTRACT

### Background

Being the most backward region, The Far Western Development Region has high illiteracy rate, low socioeconomic status and high migration rate contributing the progression of epidemiological status of Human Immunodeficiency Virus (HIV) towards generalized form.

### Objective

To study the demographic profile of the HIV positive patients, along with their CD4 status and tuberculosis during diagnosis.

### Method

A retrospective descriptive study carried out from May 2006 to July 2012 in 271 HIV patients registered in HIV clinic of Mahakali Zonal Hospital, Mahendranagar.

### Result

Among 271 patients enrolled, 48.30% (131) were male and 51.7% (140) were females. Thirty seven (13.7%) were less than 15 years and 76.3% (207) were of age 16-45 years. 38.7% were household workers by occupation and 34.50% were involved in agriculture and 3.70% were migrant labour. At the time of presentation, 22.4% (60) were stage I according to WHO staging and 18.5% (50), 58.5 (158) and 0.7% (2) were of stage II, III and IV respectively. Similarly, 33.0% (89) had more than 350 CD4 count at the time of presentation. 20.8% (56) of patients were infected with tuberculosis. Among 236 families, 2 or more members were found to be affected in 24 families. In most of the cases, female were diagnosed first followed by male in the families, where both the couple were infected.

### Conclusion

Most of the HIV infected patients were of productive age group. Majority of patients were uneducated and Tuberculosis was found to be common opportunistic infections associated with HIV infection.

## KEY WORDS

*HIV infection, opportunistic infection, sexual activity*

## INTRODUCTION

HIV infection directly deteriorates the body's immune system, the infected person develops several HIV related clinical features and opportunistic infections.<sup>1</sup> Being the most backward region, The Far Western Development Region has high illiteracy rate, low socioeconomic status and high migration rate contributing the progression of epidemiological status of HIV towards generalized form.<sup>2</sup> Nepal has concentrated epidemic of HIV and acquired immuno deficiency syndrome (AIDS) with national adult prevalence of HIV is at 0.23%.<sup>3,4</sup> Up to July 2013, 20538 were HIV positive and 7142 were taking Anti Retroviral Treatment (ART) national wide.<sup>3,5</sup> ART clinic was started in Mahakali Hospital, Mahendranagar since 2006. This study conducted to document the clinical and demographic profile and opportunistic infection of the HIV infected patient of Mahakali Zonal hospital (ART) site during six years period of service.

## METHODS

Retrospective study conducted in Mahakali hospital ART center far western region, Nepal from May 2006 to July 2012. All the record of the center of that duration was reviewed from January 2012 to July 2012. The age, sex, address, diagnosis, CD4 counts at diagnosis, WHO staging at time of diagnosis were recorded. Data collection was conducted after taking ethical clearance from the hospital administration. Data was recorded by medical doctors after receiving orientation. The findings were compared with the national and other related geographical area. The data were entered and analyzed with SPSS 19.

## RESULTS

Among 271 studied subjects, 140 (51.7%) were females and 131 (48.3) were males. Majority of them were from the age group 16-45 years (76.3%), and married 193 (71.2%). Majority of them were uneducated 156 (57.6%). At time of presentation, 159 (58.7%) were WHO grade 3 staging and 85 (31.5%) has CD4 less than 200. Till the time of analysis, it was found that 142 (52.4%) were under ART. The commonest route of transmission was other heterosexual 233 (86.0%). This other heterosexual route means the having sex except mans having sex with man (MSM), sex with commercial sex workers and other unusual sex like oral sex. TB was the commonest opportunistic infection and was associated with low CD4 count.

**Table 1. Socio demographic profile of HIV/ AIDS.**

Socio demographic Profile	Number	%
Sex		
Female	140	51.7
Male	131	48.3
Age distribution		
<15	37	13.7

16-45	207	76.3
>45	27	10.0
Marital Status		
Married	193	71.2
Unmarried	41	15.1
Widow	36	13.3
Divorced	1	0.4
Type of family		
Nuclear	267	98.5
Joint	4	1.5
Educational status		
No education	156	57.6
Some education	105	38.7
Class 9-10	7	2.6
SLC to undergraduate	2	0.8
Post graduate	1	0.4
Profession		
Household	105	38.7
Agriculture	96	35.4
Household+Agriculture	2	0.7
Business	4	1.5
Service	18	6.6
Migrant labour	9	3.3
Foreign employee	2	0.8

**Table 2. Risk factor, WHO grading and CD4 count during diagnosis of HIV.**

	Frequency	%
ART Therapy		
No	129	47.6
Yes	142	52.4
Year of diagnosis		
1	16	5.9
2	70	25.8
3	42	15.5
4	41	15.1
5	49	18.1
6	53	19.6
Risk factor for transmission		
CSW	2	0.7
Other heterosexual route	233	86.0
Mother to child	36	13.3
WHO grading		
0	1	0.4
1	59	21.8
2	50	18.5
3	159	58.7
4	2	0.7
CD4 count at the diagnosis		
<200	85	31.5
200-350	50	18
>350	89	33
Not done	47	18.5

**Table 3. Association of Opportunistic infection with CD4 count and WHO grading.**

CD4 count	Opportunistic infection		p- value
	No Tuberculosis	Tuberculosis	
1-200	49(57.6)	36(42.4%)	0.000
201-350	46 (90.2%)	5(9.8%)	
>351	80 (90.9%)	8 (9.1%)	
WHO grading			
0	1	0	0.000
1	58	1	
2	48	8	
3	107	52	
4	1	1	

## DISCUSSION

The study revealed that the male and female HIV patients were almost similar in number during last six years period (51.70% vs 48.30%) which is contrast to the Dhangadi study of same far western region and sex wise distribution globally.<sup>6,7</sup> This might be due to the fact that males are out of home for work and female came first in ART center for check up. It was interesting to note that when females turn out positive, they brought their husband for investigation.

This study found that 37 (13.70%) were less than 15 year and majority 207 (76.30%) were 16-45 years. This revealed that HIV infection is common in productive age group though the infection to the children is also significant. Similar type of finding was observed in other places of Nepal.<sup>2,8,9</sup> Some study showed that recruitment of HIV infections from India via seasonal labor-migrants is the key factor contributing to the HIV epidemic in Far-Western Nepal.<sup>4</sup>

The risk of HIV infection was seen to inversely proportionate to the literacy level. The highest percentage of infected were illiterate (57.60%) followed by some form of education (38.70%) the decreasing rate was found on increasing educational level. Similar finding were observed in Dhangadi study.<sup>5</sup> This might be due to increase awareness about HIV/AIDS during formal educational process of Nepal and this shows the importance of education in controlling the HIV/AIDS spreads.

When analyzing the marital status, married outnumbered to the unmarried (71.20% vs 15.1%) but it was interesting to note that 36 (13.30%) were widow and it is very important to note, because there is high possibility of the husband of widows might have died with AIDS previously due to lack of treatment and HIV information services. Among 236 families, two or more member were found to be affected on 24 families.

It was seen that 86.0% were infected through heterosexual contact and 13.30% vertical infection from mother to child and 0.7% through the client of sexual worker. The highest percentage showed the importance of safe sex for

the prevention of the HIV infection. The percentages of dependent babies were infected due to lack of awareness in their mothers about the mode of transmission of disease to their children and it also shows the importance of PMTCT for the prevention of HIV transmission to the children. When analyzing the years of diagnosis of HIV/AIDS the percentage of diagnosis per year is almost similar and it shows the case finding rate is similar for the last six years.

It was observed in the study that 58.70% were grade 3 during the diagnosis where as 18.50% were grade 2 and 21.8% were grade 1. This shows the delay of diagnosis of the HIV/AIDS in our set up in far western region. This may be due to the low level of literacy rate and illiterate person seek medical help latter but this was not statistically significant ( $p > 0.05$ ).

A recent study from India, among admitted cases reported clinical profile of 516 children affected by HIV. In this study common clinical features were fever (36.60%), respiratory infections (31.70%), lymphadenopathy (30%), hepatosplenomegaly (21.80%) and diarrhea (18.10%). A similar study in Cameroon showed that the prominent clinical manifestations were persistent fever and diarrhea, excessive weight loss, chronic cough and profound asthenia.<sup>10</sup> This study revealed that tuberculosis was the most common opportunistic infection and 20.70% person present with tuberculosis during diagnosis of HIV. The study done in other city of Nepal also found Tuberculosis was the major opportunistic infection accounting 27.30% (of which 66.60% were extra pulmonary cases).<sup>7</sup>

When analyzing the CD4 count, 31.50% (85) had less than 200, 18.0% (50) had 200-350 and 33.0% (89) had more than 350 at the time of presentation. This shows the late diagnosis of the HIV. The opportunistic infection was found to be more common with the higher WHO grading ( $p < 0.05$ ) and less CD4 count ( $p < 0.05$ ).

### Limitations:

This was the retrospective study and might not give the exact required essence of the problems to be studied.

## CONCLUSION

This study showed that most of the HIV infected patient were of productive age group. Majority were uneducated and Tuberculosis was found to be common opportunistic infections associated with HIV infection and substantial portion have low CD4 count at the time of presentation.

## ACKNOWLEDGEMENT

We would like to thank Dr. Bigyan Prajapati, Dr. Rabindra Gole Tamanag for data collection, data entry and Mr. Susan Man Shrestha for statistical analysis.

## REFERENCES

1. Salami A, Olatunji P, Oluboyo P. Spectrum and prognostic significance of opportunistic diseases in HIV/AIDS patients in Ilorin, Nigeria. *West African journal of medicine*. 2007;25(1):52-6.
2. Paudel BN, Sharma S, Singh G, Dhungana G, Paudel P. Socio-demographic profile of HIV patients at Seti Zonal Hospital. *Journal of J Nepal Health Res Counc*. 2008;6(2):107-10.
3. HIV/AIDS JUNPo. Global report: UNAIDS report on the global AIDS epidemic 2010. Geneva, Switzerland: UNAIDS; 2010:2011.
4. Vaidya NK, Wu J. HIV epidemic in Far-Western Nepal: effect of seasonal labor migration to India. *BMC Public Health*. 2011;11(1):1.
5. HIV situation of Nepal. In: Government of Nepal mohap, National center for AIDS and STI control, editor. Nepal 2013.
6. Annual HIV sentinel surveillance xcountry report 2006. In: (NACO) NACO, editor. 2006.
7. Poudel BN, Dhungana G. Scenario of HIV/AIDS patients in a government hospital of Nepal. *J Nepal Health Res Counc*. 2010 Oct;8(2):103-6.
8. Pradhan P, Bhatta G, Bam K. Cost-effectiveness of models of care quality for children affected by HIV and AIDS in Nepal. *Health Prospect*. 2013;11:19-25.
9. Sharma S, Dhungana G, Pokharel B, Rijal B. Clinical features of HIV/AIDS and various opportunistic infections in relation to antiretroviral status among HIV seropositive individuals from Central Nepal. *Kathmandu Univ Med J*. 2009;7(4):355-9.
10. Mbanya DN, Zebaze R, Minkoulou E-M, Binam F, Koulla S, Obounou A. Clinical and epidemiologic trends in HIV/AIDS patients in a hospital setting of Yaounde, Cameroon: a 6-year perspective. *International journal of infectious diseases*. 2002;6(2):134-8.