



**STUDY OF OPPURTUNISTIC INFECTIONS IN HIV SEROPOSITIVE PATIENTS IN TERTIARY CARE HOSPITAL, MADHYA PRADESH ,INDIA**

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**ABSTRACT**

The present study was undertaken to know the prevalence of various opportunistic infections in HIV seropositive patients attending the Anti Retroviral Therapy centre associated with Department of General Medicine, NSCB Medical College, Jabalpur from June 2007 to July 2008. Total 75 patients were included in this study. The study included HIV patients taking ART including both males and females. Data was entered and analyzed using SPSS 16.0. The common opportunistic infections on presentation were oral candidiasis (25/75; 33%), pulmonary tuberculosis (21/75; 28%), herpes genitalis (4/75; 5.3%) and taenia infection (3/75; 4%). Molluscum contagiosum (2/75; 2.6%), pneumonia (2/75; 2.6%), herpes zoster, scabies, CMV retinitis, cryptococcal meningitis, impetigo were also noted in some patients. Since opportunistic infections are a major cause of mortality and morbidity in HIV seropositive patients, an early diagnosis and effective treatment are required to tackle them.

**KEYWORDS** : HIV/AIDS, Opportunistic infections, Candidiasis, Tuberculosis, ICTC.

**Introduction**

Human immunodeficiency virus and acquired immunodeficiency syndrome (HIV/AIDS) continues to be the major global public health problem. Globally, 35.0 million people were living with HIV at the end of 2013 (1). India has the 3rd highest number of HIV infected people in the world (2). HIV infected patients are vulnerable to a number of opportunistic infections (OIs) because of a compromised immune system. The progressive destruction of immune system by chronic HIV infection leads to progressive fall in the level of CD4 cells (<200/ $\mu$ l to <50/ $\mu$ l), responsible for the occurrence of infections by a variety of opportunistic microorganisms (3). OIs account for the majority of the mortality and the morbidity in AIDS. The type of pathogen responsible for morbidity and mortality vary from region to region. The identification of such pathogen is very important to manage such cases (4). Most of the opportunistic infections broadly correlate with CD4 lymphocyte count in majority of the cases (5). Appropriate management of OI s is as important as antiretroviral therapy (ART) in preventing mortality and morbidity among HIV-infected persons. With this background, present study was undertaken to study the spectrum of opportunistic infections in adult HIV patients.

**Material and Method**

A hospital based prospective study was carried out on patients attending the ART centre associated with Department of General Medicine, NSCB Medical College, Jabalpur from June 2007 to July 2008. Total 75 patients were included in this study. The study included HIV patients taking ART including both males and females. Complete history and physical examination, weight, clinical stage of HIV infection. Routine laboratory investigations including complete haemogram, S. bilirubin, SGOT, SGPT, RBS, B. Urea S. creatinine, HIV 1,2 by ELISA, HBsAg, stool < routine, microscopy as required, CD4 count, X-ray chest, USG abdomen, identify coexisting medical conditions and treatments that may influence the therapy. These Opportunistic infections was diagnosed on the basis of standard clinical definition and laboratory procedures.

**Results and Discussion**

Total 75 patients were included in the study. 8 patients died during follow up period. There were 53 male and 22 female patients (Table-1). Male to female ratio was 2.4:1. The mean age was 35.4 years (male, 36 and female 33.9 years). The maximum 42.6 percent of studied patients were in the age group of 35-44 years followed by 34.6% in the age group of 25-34 years (Table-2). The incidence of symptomatic infection was more in married (68/75; 90.6%) as compared to unmarried (7/75; 9.3%) patients. Most common mode

of transmission of HIV infection (Table-3) both in males and in females was by sexual contact (69/75; 92), followed by blood and blood products (2/75; 2.6%), and through vertical transmission (1/75; 10.3). In three patients (4%) the mode of transmission was not known. The common opportunistic infections (Table-4) on presentation were oral candidiasis (25/75; 33%), pulmonary tuberculosis (21/75; 28%), herpes genitalis (4/75; 5.3%) and taenia infection (3/75; 4%). Molluscum contagiosum (2/75; 2.6%), pneumonia (2/75; 2.6%), herpes zoster, scabies, CMV retinitis, cryptococcal meningitis, impetigo were also noted in some patients.

Candidiasis was the most common OI noted in our study followed by tuberculosis. The prevalence of Oral Candidiasis is 33% in our study. It correlates well with the reports of Ayyagari et al. (27.8%) (6) and Takalkar et al. (39.0%) (7).

Prevalence of Tuberculosis in our study is 28% among the opportunistic infections. It is found close with study 33% by Sandhu (8) but 57% by Chakrabarty (9).

It is found that the patients with CD4 Cell count  $\leq$  200 cell/ $\mu$ l were affected more by opportunistic infections rather than CD4 Cell count in between >200 cell / $\mu$ l. This is found same with study by Agarwal (10). The pattern of Opportunistic infections in a particular area helps the attending physician to be on the lookout for them take prompt therapeutic measures.

**Conclusion:**

Early diagnosis and prompt treatment of opportunistic infections is important before development of severe immunodeficiency to prevent serious and fatal outcome.

**Table 1 Distribution of patients According to Sex**

Total No.	Male		Female	
	No.	Percentage	No.	Percentage
75	53	70	22	30

**Table 2 Age Distribution of the patients**

Age Group	Male		Female		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
14-24	3	5.6	3	13.6	6	8
25-34	18	40	8	36	26	34.6
35-44	23	43.3	8	36	32	42.6
45-54	8	15	3	13.6	11	14.6
>54	1	1.8	0	0	1	1.3

**Table -3 Modes of Transmission of HIV Infection**

Modes of Transmission	Male		Female		Total	
	No.	%age	No.	%age	No.	%age
Sexual Method	47	88.6	22	100	69	92
By Blood and blood products	02	3.7	0	0	02	2.6
Vertical Methods (Mother to child)	01	1.8	0	0	01	1.3
Undetermined	03	5.6	0	0	03	04

**Table -4 Opportunistic Infection on Initial Presentation**

Opportunistic Infection	Male		Female		Total	
	No.	%age	No.	%age	No.	%age
Tuberculosis	17	32	04	18	21	28
- Pulmonary	11	20.7	02	09	13	17.3
- Extra Pulmonary	04	7.5	02	09	06	8
- Disseminated	02	3.7	0	0	02	3.7
Oral Candidiasis	18	34	07	32	25	33
Herpes genitalis	03	5.6	01	4.5	04	5.3
Herpes zoster	01	1.8			01	1.3
Scabies			01	4.5	01	1.3
CMV retinitis	01	1.8			01	1.3
Cryptococcal meningitis	01	1.8			01	1.3
Taenia infection of nails	03	5.6			03	04
Molluscum Contagiosum	01	1.8	01	4.5	02	2.6
Pneumonia	01	1.8	01	4.5	02	2.6
- Bacterial			01	4.5	01	1.3
- PCP	01	1.8			01	1.3
Impetigo			01	4.5	01	1.3

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