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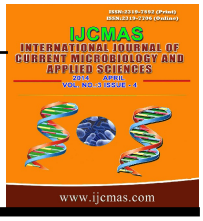

Original Research Article

Opportunistic infections among HIV patients attending Tertiary Care hospital, Karnataka, India

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A B S T R A C T

The human immunodeficiency virus (HIV) infection leading to Acquired Immunodeficiency Syndrome (AIDS) causes progressive decline in immunological response in people living with HIV/AIDS (PLWHA) making them susceptible to a variety of and opportunistic infections which are responsible for morbidity and mortality. Both Primary and Secondary data was collected using pre tested semistructured questionnaire at Tertiary care hospital, Bellary,Karnataka,India from HIV cases.The pattern of opportunistic infections in people living with HIV/AIDS (PLWHA) attending Tertiary care hospital was studied. Commonly observed were pulmonary tuberculosis (56%) and candidiasis (46%).Findings point to the importance of early diagnosis and treatment of opportunistic infections in order to improve quality and expectancy of life.

Keywords

HIV, Opportunistic infections, Tuberculosis

Introduction

Globally there are 33.3million people living with HIV and in SEAR about 3.5 million people. India also has the world's third-highest total HIV burden; the prevalence of HIV infection is estimated to be 0.34% of the population, which translates to 2.31 million people living with HIV/AIDS (PLHIV) and Karnataka is among high prevalent states (Park K., 2011).

Human immunodeficiency virus (HIV) causes progressive impairment of the body's cellular immune system leading to increased susceptibility to tumours, and the fatal conditions knows as acquired immunodeficiency syndrome (AIDS) (Cheesbrough, 2007).

People with advanced human immunodeficiency virus (HIV) are vulnerable to infections called "opportunistic infections" (OIs) because they take advantage of the opportunity offered by a weakened immune system. Since the beginning of the HIV epidemic, OIs have been recognized as common complications of HIV infection (Kanabus., et al., 2006; Centres for disease and control, 1982; Selik et al., 1984).

More than 20 specific opportunistic infections have been associated with HIV infection (CDC Classification system, 1986) and HIV-infected patients generally experience several during the course of their illness (Saag, 1994) HIV-related opportunistic infections are associated with significant morbidity and mortality and virtually none can be eradicated, necessitating life-long suppressive therapy after an acute episode. Prevention of such illness through primary prophylaxis is therefore compelling.

Globally 1/3rd of the people living with HIV/AIDS (PLWHA)are co-infected with Mycobacterium tuberculosis (Abeld, 2002). In India, 56% of AIDS patients have been reported to be suffering from tuberculosis (Sengupta et al., 1997)TB accounts for about 13% . of all HIV related deaths worldwide (Ngowi et al., 2008).

Tuberculosis is said to be the most common opportunistic infection among people living with HIV/AIDS. The interaction between HIV and TB in persons co-infected with them is bidirectional and synergistic**;** each accentuates progression of the other (Sharma et al., 2005). In persons dually infected with HIV and tuberculosis, the lifetime risk of developing tuberculosis is 50-70% as compared to a 10% risk in HIV negative individuals (World Health Organization).

A major cause of mortality and morbidity in HIV infected people is opportunistic infection (OI). Type of pathogen responsible for OI varies from region to region. Therefore, identification of the specific pathogen(s) is important for management of such cases (Ayyagari et al., 1999).

Materials and Methods

A Descriptive case series study was carried out during October 2013 to February 2014 at VIMS hospital. VIMS is a tertiary care hospital/medical college situated in Bellary district which is around 300 kms away from Bengaluru, capital city of Karnataka,India

HIV positive patients with opportunistic infections admitted to various medicine wards and those attending ART centre and Medicine OPD at VIMS hospital were the study subjects. The sampling technique adopted was non probability purposive sampling technique and totally 100 HIV positive patients with opportunistic infections were considered for the study. After obtaining written informed consent, data was collected from patients by interview technique and secondary data from case records. The study subjects who were seriously ill and did not give their consent to participate were excluded from the study. Data was entered in Microsoft excel and analyzed using SPSS

Results and Discussion

The present study revealed that the maximum number of patients who had opportunistic infections fell in the age group of 30- 39 yrs (45%), followed by the age group 20-29 yrs (26%), 40 – 49 years (20%), 50 – 59 years (5%) and 10 – 19 years (3%). No patients were found in the age group above 60 yrs. (Fig.1)

It was observed that gender distribution of male and females harbouring various opportunistic infections. There was higher proportion of males, n= 69 (69%) as compared to females, n=31 (31%). The male to female ratio was 2.8:1. (Fig.2) It is evident from the table above that

tuberculosis is the most frequent opportunistic infections accounting for 56 %(n= 56) of all opportunistic infections, followed by candidiasis in 46% (n=46) of cases.

In the present study majority of the patients were in the age group of 30-39 years and all the patients fell below the age of 60 years comparable to results of Garcia Ordonez MA et al (1998). So it was observed that the frequency of opportunistic infections was highest in the sexually active age group of the society. This indicates a trend of young and productive generation being affected; a reflection of the devastating effects India will face as the younger generation work force is affected.

In the present study it was found that the heterosexual mode of transmission was the most common mode of transmission, as observed in other studies of Uzgare R et al (2000), Kothari K et al (2001) and M Korzeniewska-Koscla et al (1992).

In the present study it was found that tuberculosis was the most frequent opportunistic infections accounting for 50% of all opportunistic infections, followed by candidiasis in 49% of cases. Pneumocystosis was seen in 16%, Cryptococcal infection in 09% and parasitic diarrhoea in 15%.

SK Sharma et al (2004) in their study found that tuberculosis (TB) was the commonest opportunistic infection (71%) followed by candidiasis (39.3%), Patel AK et al (1994) in their study have found various opportunistic infections as Oropharyngeal candidiasis (41.94%), Pulmonary and extra Pulmonary tuberculosis (25.81%), Recurrent Pyogenic infections (12.90%), generalized lymphadenopathy (12.90%), Pneumocystis Carinii pneumonia (12.90%). AIDS Dementia Complex, (9.68%) and Recurrent Herpes Zoster (9.68%).

Giri TK et al (1995) showed that among the symptomatic patients, oropharyngeal candidiasis was the most common opportunistic infection followed closely by tuberculosis (both pulmonary and extra pulmonary). Infection with Cryptococcosis, Cryptosporidiosis and Cytomegalovirus occurred only after a significant fall in CD4 to < iOO/cmm. Pneumocystis carinii pneumonia was the terminal event among the 12 deaths at a mean CD4 count of 6/cmm.

Singh A et al (2003) conferred from their study that Oral candidiasis (59.00%) was found to be the most common opportunistic infection, followed by tuberculosis (56.00%), Cryptosporidium infection (47.00%) and Pneumocystis carinii (7.00%).

M. Vajpayee et al (2003) in their study found that the predominant opportunistic infections were tuberculosis (47%, 189 cells/ul), followed by parasitic diarrhea (43.5%, 227 cells/pl) and oral candidiasis (25.2%, 189 cells/u=l).They concluded that tuberculosis was the most frequent OI in the HIV-infected patients studied.

In the present study the mean CD4 counts were Tuberculosis 237.02/ micro L_p Candidiasis 189.07/ micro L, Cryptococcosis 062.89/ micro L, Pneumocystosis 141.73/ micro L and in parasitic diarrhoea 246.67 micro L. So the results of this study were comparable to that of M. Vajpayee et al (2003).

Tuberculosis is the commonest opportunistic infection and the pattern of Opportunistic infections in a particular

Fig.1 Age wise distribution of Study subjects

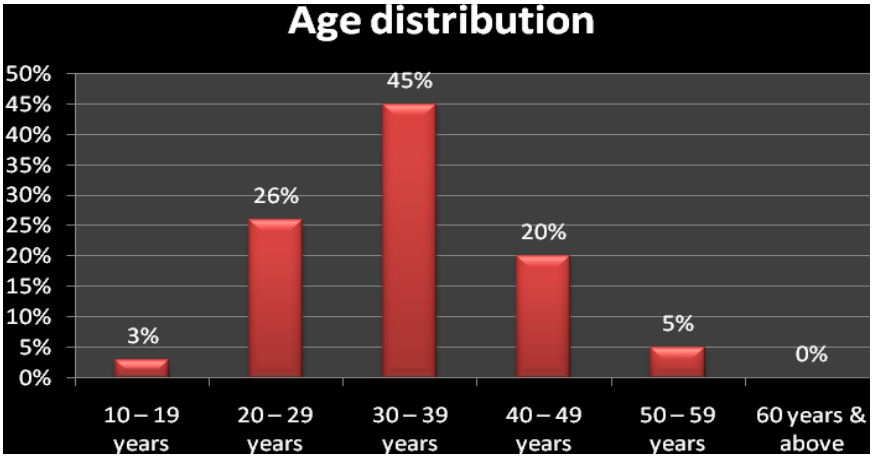
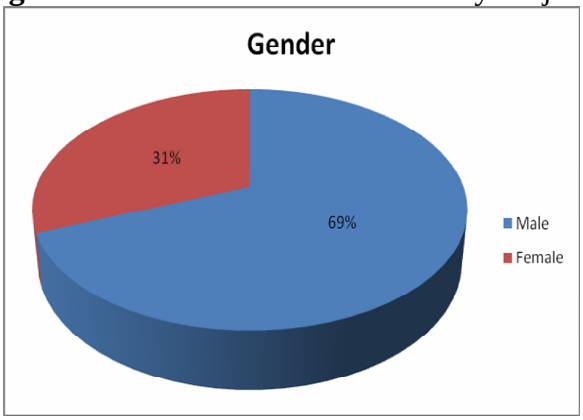


Table.1 Distribution of study subjects based on type of opportunistic infections

Opportunistic infections	No. of cases	Percent of cases
Tuberculosis	56	56%
Candidiasis	46	46%
Pneumocystosis	15	15%
Cryptococcosis	09	09%
Cryptosporidiosis	06	06%
Strongyloidiasis	03	03%
Isosporiasis	05	05%
Toxoplasmosis	04	04%
CMV retinitis	03	03%
PML	03	03%
Herpes	05	05%
Molluscum contagiosum	04	04%
Pneumococci	02	02%
Scabies	02	02%
Sebhorrheic dermatitis	01	01%

Fig.2 Gender wise distribution of Study subjects



area helps the attending physicians to be on the lookout for them and take prompt therapeutic measures. Simultaneously specific health education of PLWHA regarding early detection of opportunistic infection (OI) and importance of antimicrobial prophylaxis to reduce the morbidity and mortality can be undertaken

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