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A Descriptive study on clinical profile of patients with HIV in a Tertiary care hospital

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A B S T R A C T

HIV virus, causative agent in AIDA, is fast becoming a major threat in Indian subcontinent with an estimated 3.7 million persons being infected with HIV. HIV infection is complicated by various opportunistic infections such as TB, candidiasis, herpes zoster, pneumocystid carinii, cytomegalovirus. A hospital based case series study was conducted among 200 HIV patients admitted to various wards as well attending OPD during Jan 2013 to Dec 2013. GPE and systemic examination was done and also HIV status was confirmed by ELISA. Other investigations were also carried out to know type of opportunistic infections. Among 200 patients, 31% were females and 69% males. High proportion of patients was observed in 30 - 39 years of age group and heterosexual route was more common mode of transmission. TB (50%) is the most frequent opportunistic infection followed by candidiasis (49%), Pneumocystosis (16%) and others. Respiratory system was the most common system involved by opportunistic infections.

Introduction

The first case of HIV/AIDS in India was identified in Chennai in 1986¹. And 24 years later, around 2.4 million Indians are HIV positive². According to the National AIDS Control Organization HIV prevalence rate in India is 0.34% (0.25%-0.43%)³. It is estimated that 90% of HIV infected persons live in the developing countries with Indian estimates being 5.1 million^{4,5}.

Opportunistic Infections (OI) have been recognized as common complications of

HIV infection^{6,7,8}. A decrease in CD4+ count is at least partially responsible for the profound immunodeficiency that leads to various OIs in HIV-infected persons⁹. The introduction of antiretroviral therapy (ART) has dramatically reduced the incidence of OI among HIV-positive people who have received ART; however, around the world, millions of people living with HIV in resource-poor communities have no access to ART⁶. Even where ART drugs are available, they do not entirely remove the

need for preventing and treating OI. In addition, measures to prevent and treat OIs become essential if ART stops working because of poor adherence, drug resistance or other factors. Providing prevention and treatment of OIs not only helps HIV-positive persons to live longer, healthier lives, but it can also help to prevent tuberculosis (TB) and other transmissible OIs from spreading to others. At present, the initiation of primary prophylactic therapies for OIs is based chiefly on the absolute CD4+ count, which has been shown to be an excellent predictor of the short-term overall risk of developing AIDS among HIV-infected patients¹⁰. The relative frequencies of specific opportunistic diseases may vary in different countries and even in different areas within the same country¹¹. The identification of such pathogen is very important for HIV and AIDS case management.

Human immunodeficiency virus (HIV) causes progressive impairment of the body's cellular immune system leading to increased susceptibility to tumours, and the fatal conditions known as acquired immunodeficiency syndrome (AIDS)¹². The unique feature in the pathogenesis of HIV/AIDS is that the primary target cell for HIV is immune cells bearing CD4 marker at their surface. With the infection of HIV, there will be gradual decrease of human immune cells bearing CD4 antigen receptor, the most important being T helper cells (CD4 T cells), B lymphocytes, macrophage and natural killer cells leading to development of wide varieties of OIs i.e. severe infections induced by agents that rarely cause serious diseases in immune competent individual. In this way AIDS related mortality and morbidity, which is significantly higher in number as compared to other diseases, is actually due to opportunistic infections (OIs) rather than

HIV itself¹³. So, success of any HIV/AIDS care and management project relies on effective diagnosis and treatment of opportunistic infections. In the era of effective antiretroviral therapy (ART), diagnosis and treatment of OIs is an integral part of this treatment strategy because some OIs regimens (for e.g. Anti tuberculosis drugs) and ART regimen should not be administered at the same time to prevent drug induced toxicity¹⁴. CD4 cell count is best validated predictors of likelihood of developing OIs. Besides, it has great utility in clinical consideration of HIV disease classification and AIDS definition, assessment of prognosis and designing of clinical trials, for e.g. making decision about initiation of ART/prophylaxis¹⁵. Selection of appropriate CD4 cut off for initiating ART/appropriate prophylaxis can be made on a regional basis depending on OIs incidence and availability of antimicrobials. There are wide range of OIs affecting different system, for example, respiratory tract infection, gastrointestinal tract infection, urinary tract infections, sexually transmitted infection and disseminated infection¹⁶.

The CD4 cells co-ordinate a number of immunological functions and as these cells are decreased (due to HIV), the risk and severity of OIs increases, resulting the death of the patients. So, CD4 count is an important parameter to initiate OIs prophylaxis e.g. co-trimoxazole preventive therapy (CPT) before the agent deteriorates the body, and conversely, observation of specific OIs gives the predictive value of CD4 counts in blood suggesting the initiation of treatment for e.g. ART. Once the standard value of CD4 count and the OIs incidence rate at that stage is obtained, this can be used as a model for other resource limited settings (where CD4 count facilities are not available) to take decision about the

initiation of in relation to CD4 status were done in a local setting with limited sample size but specific studies aimed at making standard profile of different OIs according to CD4 were lacking¹⁷.

So, this study is conducted with a general objective to know the different types of opportunistic infections which may be helpful for the development of guidelines regarding the initiation and monitoring of ART/prophylaxis. Furthermore, the result of the findings will be helpful in the prognosis of different OIs in HIV/AIDS patients

Methodology

A descriptive case series study was carried out in a tertiary care hospital from January 2013 to December 2013. A pre tested semi structured questionnaire was prepared to collect the information of clinical profile of HIV patients. The study subjects were the patients with HIV attending tertiary care hospital. Totally 200 study subjects were selected for the study and these patients were selected based on non probability sampling technique with a purpose. After obtaining written informed consent from patients, primary data was collected by interview technique and secondary data was gathered from case records. The data was compiled in Microsoft excel and was analysed using SPSS by descriptive statistics.

Result 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. There was higher proportion of males, (69%) as compared to females, (31%). The male to female ratio was 2.8:1.

Most of the occupants, who harbored opportunistic infections were unskilled laborers (43%), followed by Semiskilled (15%), skilled (11%) and rest of business, professional & others constituted 31%. Of all the cases maximum number of HIV positivity with opportunistic infections were seen in the married group (58%), followed by people who were un married (23%), and least in those who were separated (12%), Widow group constituted 7%.

The table.2 shows that the heterosexual mode of transmission was the commonest mode of transmission, accounting for 94%. In the present study, no cases could be attributed to IV drug abuse, or Needle stick. 2% of the cases accounted for the transmission due to transfusion of the blood or blood products and 2% to Materno-fetal transmissions. Homosexuals route of transmission was found in 2% of cases also

In the present study as depicted by the table, the most common symptoms at presentation were fever (78%), loss of appetite (76%), weight loss(74%), cough (58%), where as diarrhea was seen in only 18% of the cases.

On general examination, the most common signs found were emaciated built (73%), fever (60%), tachycardia (94%), tachypnea (62%) and pallor (76%). Genital lesions and skin lesions constituted 18%.

Table.1 Distribution of study subjects based on age

Age group	Frequency	Percentage
10 – 19 years	08	03%
20 – 29 years	52	26%
30 – 39 years	90	45%
40 – 49 years	40	20%
50 – 59 years	10	05%
60 years & above	00	0%
Total	200	100%

Table.2 Distribution of study subjects based on mode of transmission of HIV

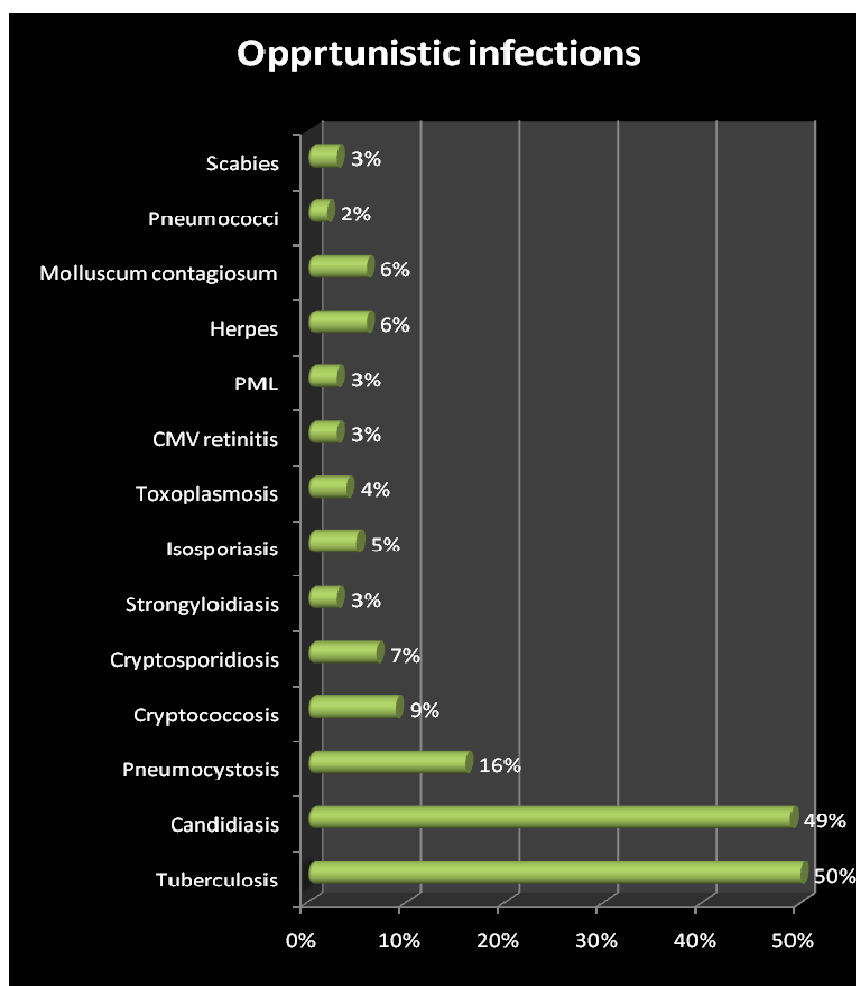
Mode of transmission	Frequency	Percentage
Heterosexual	188	94%
Homosexual	04	02%
Blood transfusion	04	02%
Materno-fetal, infant	04	02%
Total	200	100%

Table.3 Distribution of study subjects based on symptoms

Svmptoms	Frequency	Percentage
Fever	156	78%
Weight loss	148	74%
Diarrhoea	36	18%
Cough	116	58%
Loss of appetite	152	76%
Dysphagia	96	48%
Dyspnoea	94	47%
Tachypnoea	46	23%
Genital lesions	20	10%
Body swelling	24	12%
Headache	58	29%
Convulsions	40	20%
Abdominal pain	30	15%
Abdominal distension	06	3%
Chest pain	52	26%
Visual blurring	32	16%
Vomiting	66	33%
Altered sensorium	36	18%

Table.4 Distribution of study subjects based on clinical signs on general examination

Important Signs	No of cases	Percentage of cases
Emaciated built	146	73%
Fever	120	60%
Tachycardia	196	94%
Tachypnoea	124	62%
Pallor	152	76%
Icterus	06	03%
Cyanosis	32	16%
Clubbing	18	09%
Edema	10	05%
Lymphadenopathy	26	13%
Genitals	20	10%
Skin lesions	16	08%
Thrush	90	45%



It is evident from the table above that tuberculosis is the most frequent opportunistic infections accounting for 50 % of all opportunistic infections, followed by candidiasis in 49% of cases.

In the present study it was found that fever was the most frequently occurring symptom present in 78% of the cases. Loss of appetite was present in 76% cases and 89% of the cases were febrile for >1 month duration, weight loss in 74 % (62.2% had weight loss >10%), cough in 58 % (83.3% had those > 1 month duration) and diarrhoea in 18% (83.3% had those > 1 month duration) of the cases were evident from the present study. M Kor/eniewska-Kosela et al¹⁸ in their study found that symptoms at presentation included weight loss (in 80% of the cases), fever (in 75%), cough (in 70%) and night sweats (in 55%).

Patel AK et al¹⁹ in their study noticed that the common modes of presentation were fever more than 1 month (80.65%) weight loss more than 10% of body weight (77.42%) and Diarrhoea more than 1 month (41.94%).

Kothari K et al²⁰ in their study found that the commonest presentation was fever in ninety six per cent. Significant weight loss (1.5%+/-9.76%) was present in patients having associated Candida infection.

Hence, in the present study also there were high incidences of patients presenting with fever, cough, weight loss and diarrhoea.

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 al²¹ in their study found that tuberculosis (TB) was the commonest opportunistic infection (71%) followed by candidiasis (39.3%), Pneumocystis jiroveci pneumonia (7.4%), cryptococcal meningitis and cerebral toxoplasmosis (3.7%).

Patel AK et al¹⁹ 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 al²² 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 < 100/cmm. Pneumocystis carinii pneumonia was the terminal event among the 12 deaths at a mean CD4 count of 6/cmm.

Singh A et al²³ 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 al²⁴ 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.

Conclusion

All the patients with HIV should be screened for TB and other opportunistic infections

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