|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2018: 75.71
Original Research Article
Volume 4, Issue 9; September: 2020; Page No. 129-131

HIV TRANSMISSION, CLINICAL PRESENTATION OF TUBERCULOSIS AND ADHERENCE TO ANTI-RETROVIRAL AND ANTITUBERCULAR THERAPY AMONG HIV PATIENTS ATTENDING A TERTIARY CARE HOSPITAL

Dr. Rupam Kumar Ta[1], Dr. Pronoy Sen[2]
[1]Associate Professor, Department of Pulmonary Medicine, Burdwan Medical College, Burdwan
[2]2nd Year Post Graduate Trainee, Department of Pulmonary Medicine, Burdwan Medical College, Burdwan

Article Info: Received 03 September 2020; Accepted 28 September 2020
DOI: https://doi.org/10.32553/ijmbs.v4i9.1560
Corresponding author: Dr. Pronoy Sen
Conflict of interest: No conflict of interest.

Abstract

Title: HIV transmission, clinical presentation of tuberculosis and adherence to anti-retroviral and antitubercular therapy among HIV patients attending a tertiary care hospital

Introduction: Tuberculosis is a public health challenge specially in developing countries like India. HIV infected individuals can become super spreaders of tuberculosis. Due to paucity of studies in eastern India regarding the clinical presentation of TB in HIV infected persons and adherence to therapy this study was conducted.

Materials and Methods: The study is an observational prospective study conducted on 102 HIV positive patients enrolled in ART centre of a tertiary care hospital. After taking consent detailed history and clinical examination with relevant laboratory and radiological investigations were done after fulfilling inclusion and exclusion criteria. Data was entered in excel and analysed with proper statistical methods.

Results: Most of the patients belonged to lower socio-economic status and were married. Most common mode of transmission was by heterosexual route. Fever is the most common presentation of both TB and EPTB. Majority of patients adhered to therapy however that did not reduce the risk of developing TB.

Conclusion: HIV infection mostly affects married people of lower strata of society. Awareness programmes are vital to reduce the burden of disease. Early diagnosis and treatment are essential to reduce mortality and morbidity in people living with HIV.

Keywords: Tuberculosis, HIV AIDS, HAART

Introduction

Tuberculosis in India is a major concern in the field of public health and medicine.[1] Fifteen percent of patients having HIV develop pulmonary tuberculosis.[2] HIV can also cause reactivation of latent TB particularly in countries like India where it is endemic.[3] In India Orissa, Bihar, West Bengal, Uttar Pradesh, Rajasthan, Madhya Pradesh, and Gujarat account for 41% of the new infections. When we look at our state West Bengal, as per the HIV estimation in India in 2007, 10% of the total persons living with HIV/AIDS (PLHA) of the country live in West Bengal. HIV infected individuals are unable to contain pulmonary TB due to their immunodeficient state and cause widespread infection among people.[4] The mortality is also raised in these individuals by three folds. If TB is not present, they should receive Isoniazid preventive therapy (IPT). With 24% of all TB being associated with HIV, 13% of new TB cases being among people living with HIV and 22% of HIV related deaths caused by TB.[5] TB represents a serious health risk and there are few studies investigating the mode of HIV and presentation of tuberculosis in this part of the country. Thus, due to paucity of such studies, the present study was conducted aiming at identifying routes of transmission of HIV among the people residing in this part of eastern India, the presenting clinical features of HIV patients with active tuberculosis and their adherence to treatment.

Materials and Methods:

The study is a prospective observational study conducted over a period of one year in a tertiary care medical college in Department of pulmonary medicine in collaboration with ART Centre after taking clearance from ethical committee. The study included 102 cases of newly diagnosed HIV patients by consecutive sampling who gave consent after being enrolled at ART centre of the medical college who had positive serological test for HIV, no evidence of tuberculosis, no past history of ART intake. Patients having evidence of tuberculosis or history of anti-tubercular drug intake, patients with very poor general condition and patients already taking ART were excluded from the study. After taking consent history taking and thorough clinical examination for evidence of tuberculosis or other opportunistic infections were performed. Laboratory investigations like ZN stain, histopathological demonstration of caseous granuloma were done and suggestive clinical profile and empirical response to anti-tubercular therapy were noted. Radiological investigations like Chest X-ray were performed as and when required.

Pleural fluid and ascitic fluid analysis for tuberculosis suspect were done as and when required. The data were checked and entered into Excel sheet and analysed with Microsoft Excel and SPSS version 19.

Results:

Table 1: Distribution of study population according to marital status:

Marital status	Number (n=102)	Percentage (%)
Single/Unmarried	19	18.7
Married	65	63.7
Widow	6	5.9
Widower	4	3.9
Divorced	3	2.9
Separated	5	4.9

Table 2: Distribution of study population according to socio-economic status as per modified BG Prasad scale:

Socio-economic status	Number (n=102)	Percentage (%)
Upper	2	1.9
Upper-middle	8	7.9
Lower-middle	16	15.7
Upper-lower	36	35.3
Lower	40	39.2

Table 3: Distribution of study subjects according to likely source of HIV infection:

Source of HIV	Number (n=102)	Percentage (%)
Heterosexual	88	86.3
Homosexual	1	1
IV drug abuse	2	2
Parent to child	4	3.9
Contaminated blood transfusion	4	3.9
Unknown	3	2.9

Table 4: Distribution of study subjects according to presentation of TB in HIV patients affected by active TB:

Presenting symptoms		Number (n=68)	Percentage (%)
PTB (n=8)	Fever	5	62.5
	Cough	6	75
	Haemoptysis	2	25
	Weight Loss	1	62.5
EPTB (n=4)	Gland swelling	1	25
	Meningitis	2	50
	Fever	3	75
	Pleural Effusion	1	25

Table 5: Distribution of study population according to adherence to treatment (both ATD and HAART):

Therapy		Adherence (%)	Non Adherence (%)
Only HAART (n=39)		26 (66.7)	13 (33.3)
HAART and ATD (n=10)	HAART	2 (20)	2 (20)
	ATD	2 (20)	2 (20)
	Both	3 (30)	3 (30)

Discussion:

In our study most of the patients were married (63.7%). Widowers were present mostly due to death of their partners due to HIV. Heterosexual mode of transmission was most common. Also, HIV was more common in lower socioeconomic class as per modified B.G. Prasad scale. This is similar to the study by Perkins J.M. et al where majority were married and belonged to lower socioeconomic strata.[7]

If we look at the common presenting symptoms of TB in HIV patients, we have found that a majority, 75% of PTB patients had cough, 62.5% patients had fever and same percentage had complained weight loss. On the contrary in EPTB cases 75% had fever, features of meningitis in 50% cases, glandular swelling in 25% cases. Jayral et.al. in their study at Shimla Medical College found that fever, weight loss and cough were the commonest symptoms of tuberculosis on presentation.[6]

Most of the patients adhered to treatment. An observation was made at the time of analysis of the 12 TB cases according to their timing of onset and anti-retroviral therapy. 6 cases were already on HAART when their diagnosis was made, among them 3 cases each of PTB and EPTB. In 6 other cases (5 PTB and one EPTB) HAART was given after ATD was started. This suggests that even HAART cannot protect HIV patients from developing active TB. Lawn et.al. in a long term South African study cohort among HIV patients who were receiving HAART, found that TB incidence density rate was 3.5/100 person-years in the first year and significantly reduced during follow-up reaching 1.01/100 person-years in the fifth year ($p=0.002$ for trend).[8]

Conclusion:

We can conclude that HIV is more common among people belonging to lower socio-economic strata, especially married heterosexual individuals. Strong awareness and safe sexual practices should be encouraged among these high-risk groups. It is essential that patients with diagnosed tuberculosis are screened for HIV and patients diagnosed as HIV infected be screened for TB. Detailed clinical examination is necessary to detect TB at an early stage to reduce mortality and morbidity among PLHA. Strong adherence to HAART and ATD are essential for survival.

References:

1. Herzog H. History of Tuberculosis. Respiration 1998; 65 5-15.
2. Raviglione M, Harries A et.al. Tuberculosis and HIV: Current status in Africa. AIDS 1997; 11(suppl B): S115-S123
3. Reider HI, Cauthen GM et.al. Epidemiology of Tuberculosis in the United States. Epidemiol Rev 1989; 11: 79-98
4. Annual report 2009-2010, West Bengal state AIDS prevention and Control Society: 8-12

5. Guidelines for intensified Tuberculosis case finding and isoniazid preventive therapy for people living with HIV in resource constrained setting. World health organisation 2011
6. Jayral A. Raina R. et.al. Manifestation of tuberculosis in HIV/AIDS patients and its relationship with CD4 count. J Lung India. Vol. 28. Issue 4. Oct-Dec 2011
7. Perkins JM, Khan KT, Subramanian SV (2009) Patterns and Distribution of HIV among Adult Men and Women in India. PLoS ONE 4(5): e5648. https://doi.org/10.1371/journal.pone.0005648
8. Lawn SD, Badri M, Wood R. Tuberculosis among HIV-infected patients receiving HAART: long term incidence and risk factors in a South African cohort. AIDS 2005: vol 19:2109-2116.
9. Ong CK, Tan WC et.al. Tuberculosis HIV co infection: the relationship between manifestation of tuberculosis and the degree of immunosuppression (CD4 Counts). IeJSME 2008:2 (2):17-22.
10. Affusim CC, Kesieme E et.al. The pattern of presentation and prevalence of tuberculosis in HIV – seropositive patients seen in Benin city Nigeria. ISRN Pulmonology volume 2012, Article ID 326572
11. Swaminathan S, Ramachandran R et. al. Risk of development of tuberculosis in HIV infected patients. Int J Tuberc lung disease 2000, 4(9): 839-844
12. Whalen CC, Johnson JL et.al. A trial of three recommends to prevent tuberculosis in Ugandan adults infected with the human immunodeficiency virus. NEngl J Med 1997; 337:801-802
13. Hawken MP, Meme HK et.al. Isoniazid preventive therapy for tuberculosis in HIV -1 infected adult S: results of a Randomized controlled trial. AIDS 1997-11:875-882
14. Mwinga A et.al. Twice weekly Tuberculosis preventive therapy in HIV infection. AIDS 1998; 12:2447-2457 200&
15. Ngowi BJ, Mfinanga SG pulmonary tuberculosis among people living with HIV/AIDS attending attending care and treatment in rural north Tanzania BMC PUBLIC HEALTH 2008, 8:341