Extrapulmonary Tuberculosis in Human Immunodeficiency Virus Infection

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Abstract

Background: In view of increase in incidence of extrapulmonary tuberculosis after the epidemic of human immunodeficiency virus infection, the clinical profile of extrapulmonary tuberculosis in patients with HIV infection was studied.

Method: The study population comprised patients of HIV infection with extrapulmonary tuberculosis. Work up included history, clinical examination, sputum for acid fast bacilli, chest X-ray, ultrasonography (USG) abdomen, fine needle aspiration cytology (FNAC), transbronchial needle aspiration (TBNA) and computed tomography of chest.

Results: There were 50 cases, all males with mean age of 35 years. 24(48%) were without pulmonary tuberculosis and 26(52%) had pulmonary tuberculosis. 41(82%) had disseminated disease and 9(18%) involve one site. Fever and weight loss were the most frequent symptoms (79% and 58% respectively) in cases without pulmonary tuberculosis. The most frequent extrapulmonary site was lymph node in 46(92%), followed by spleen in 13(26%), pleura 9(18%), miliary 7(14%) and hepatic 1(2%). The diagnosis was confirmed by invasive methods in 30 out of 50(60%) cases [FNAC in 23(88%), TBNA in 2(25%) and pleural biopsy in 5(55%)].

Conclusion: In HIV infected patients, the most common extrapulmonary site is lymph node followed by spleen.

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Key Words: Extrapulmonary TB; HIV Infection

Introduction

The incidence of extrapulmonary tuberculosis has increased significantly after the epidemic of human immunodeficiency virus (HIV) infection. Extrapulmonary tuberculosis comprises 10-50% of all tuberculosis in HIV negative patients and about 35-80% in HIV infected patients [1,2]. The present study was undertaken to find out the clinical profile of extrapulmonary tuberculosis in HIV infected patients.

Material and Methods

Patients with HIV infection and pulmonary tuberculosis referred to a tertiary care respiratory centre between 01 June 2001 to 30 June 2002 were included in the study. The workup included history, clinical examination, sputum smear and culture for mycobacterium tuberculosis (MTB), chest radiography, ultrasonography (USG) abdomen, computed tomography of chest, fine needle aspiration cytology (FNAC) of peripheral lymph nodes and transbronchial needle aspiration (TBNA) of mediastinal lymph nodes. Diagnosis of splenic and hepatic tuberculosis was made on the basis of multiple hypoechoic lesions in spleen and hyperechoic lesions in liver on ultrasonography. Diagnosis of HIV infection was confirmed in all cases.

Results

There were 50 cases, all male with a mean age of 35 years (range, 22-42 years). 24 (48%) were without pulmonary tuberculosis and 26 (52%) were with pulmonary tuberculosis. 41 (82%) had disseminated disease and 9 (18%) involve one site (peripheral lymphadenopathy – 4, pleura-2, retroperitoneal lymphadenopathy-2 and mediastinal lymphadenopathy-1). The most frequent symptoms in cases without pulmonary tuberculosis were fever (79%) and weight loss (58%) (Table 1). The most frequent extrapulmonary site was peripheral lymph node in 46(92%) followed by spleen in 13 (26%) (Table 2). In lymph node tuberculosis peripheral and retroperitoneal involvement was the commonest (52% each) followed by involvement of mediastinal lymph nodes (16%). The diagnosis was confirmed by invasive methods in 30 (60%) cases [FNAC in 23 (88%), TBNA in 2 (25%) and pleural biopsy 5 (55%)].

Discussion

Extrapulmonary tuberculosis has been accepted as an AIDS-defining criteria since 1987 [3]. Extrapulmonary tuberculosis, either as sole presentation or with pulmonary involvement occurs more frequently in HIV positive than in HIV negative patients (56.5% vs. 35.7%) [4]. Lee et al in a study of sixty HIV-infected patients found extrapulmonary involvement involving one

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Table 1**Symptoms in Extrapulmonary tuberculosis without PTB(n=24)**

Symptoms	Frequency
Fever	19 (79%)
Wt Loss	14 (58%)
Cough	7 (29%)
Dyspnea	6 (25%)
Chest pain	2 (8%)

Table 2**Frequency of extrapulmonary sites involved**

Site	Frequency
Lymph nodes	46 (92%)
Spleen	13 (26%)
Pleura	9 (18%)
Miliary TB	7 (14%)
Liver	1 (2%)

site in 13% cases and extrapulmonary involvement with pulmonary tuberculosis in 50% patients which is similar to our study [5]. Because of HIV induced immunosuppression, the mycobacterium proliferates unchecked resulting like in the present study, where 41(82%) cases had disseminated tuberculosis. The presenting symptoms are nonspecific and include fever, weight loss, anorexia and weakness.

Lymphadenopathy is the commonest form of extrapulmonary tuberculosis in both HIV infected and non infected patients [2]. Lymphadenopathy was also the commonest extrapulmonary involvement in a study by Poprawski et al [6]. Intrathoracic and intra-abdominal lymphadenopathy, an uncommon finding in HIV-negative patients with tuberculosis, is common in HIV infected patients[4]. In our study, lymph node involvement was commonest, seen in 46 (92%)cases, followed by spleen in 13 (26%), pleura in 9 (18%), military in 7 (14%) and hepatic in 1 (2%). In lymph node tuberculosis, peripheral and retroperitoneal lymph node involvement was the commonest (52%) followed by mediastinal lymph nodes (16%). The finding of small multiple hypoechoic lesions in spleen in HIV-infected patients on sonography is highly suggestive of splenic tuberculosis [7] and is associated with greater immunosuppression than those

without splenic involvement [8].

Extrapulmonary tuberculosis involves inaccessible sites and invasive procedures are frequently required to establish a diagnosis [9]. In the present study, diagnosis was confirmed using invasive methods in 60% cases. In rest of the cases, diagnosis was made based on sputum smear and culture for MTB in pulmonary tuberculosis and on clinical grounds in the remaining cases.

To conclude, extrapulmonary tuberculosis in HIV infected patients occurs during advanced immunosuppression with lymph node involvement being the commonest. The involvement of spleen appears to indicate advanced immunosuppression.

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