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Original Research Article

Prevalence of Extrapulmonary TB in FNAC in Tertiary Care Centre in 2 Year Duration

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Abstract:

Aim: The aim of the present study was to find out the prevalence of extra-pulmonary tuberculosis among tuberculosis patients visiting a tertiary care centre in 2 years.

Methods: This was a descriptive cross-sectional study conducted among the tuberculosis confirmed adult patients visiting the Department of Pathology, Patna Medical College & Hospital, Patna, Bihar, India for the period of two years and 50 patients were included in the study.

Results: Out of 80 patients included in our study, the prevalence of extrapulmonary tuberculosis is found to be 50 (62.5%). 32 (64%) were males and 18 (36%) were females. Most of them were from the urban area i.e. 37 (74%) and 13 (26%) were from the rural areas. Most of them were farmers, followed by students and housewives, while there was least number of businessmen 1 (2%). Out of all, 5 (10%) were HIV serologic status. Among the extra pulmonary cases, 33 (66%) were pleural effusion followed by disseminated tuberculosis 6 (12%) and 3 (6%) abdominal TB. Out of 50 extrapulmonary cases, 14 (28%) had loss of weight, 21 (42%) had loss of appetite and 27 (54%) had reported that they have evening rise of temperature. Among the 50 extrapulmonary cases, Ascitic was positive in 7 patients and pleural fluid was positive in 38 patients. Out of all the 50 cases, 32 (64%) patient had pleural effusion followed by 4 (8%) fibro cavitation and consolidation respectively and 6 (12%) patients had normal radiological finding.

Conclusion: Extra-pulmonary tuberculosis is common in urban areas, mostly in low socioeconomic populations. Tuberculosis presents with a varied spectrum of symptoms. In countries like India where TB is widely prevalent, it is always suggested to keep the rare possibility of extrapulmonary TB in mind when patients present. A detailed history, combined with thorough physical examination and vital investigations are necessary, particularly in identifying atypical forms of extrapulmonary TB. Culture is also an essential step in diagnosis. Sophisticated techniques like PCR may not be available in a setup with limited resources. Histopathological examination is essential for confirmation. Management with ATD is effective.

Keywords: extrapulmonary; pulmonary; tuberculosis

Introduction

India accounts for one fourth of the global TB burden. Mycobacterium TB is the causative organism. Tuberculosis affects various organs and consists of a wide range of clinical symptoms. A 10-42% cases include extrapulmonary involvement and the commonest organs involved are pleura, lymph node and kidney. [1-4] The global TB report published by the World Health Organisation (WHO) in the year 2017 has enlisted India, in the top 20 in terms of, incidence of TB and Multidrug Resistant TB. [5] The annual TB report published by the Government of India estimated the incidence of TB at 28,00,000 cases. [6] The rampant nature of this disease makes it essential to discuss the spectrum of clinical presentations observed in this infection. Apart from the lungs, TB can affect lymph nodes, the genitourinary tract, bones, meninges, gastrointestinal tract, skin as well as serosal surfaces. [7]

Tuberculosis infection of any part of body other than lung parenchyma is defined as extrapulmonary tuberculosis [EPTB]. Diagnosis of EPTB is done as per RNTCP guidelines which is based on one culture positive specimen from the extra-pulmonary site; or histological evidence; or strong clinical evidence consistent with active EPTB disease followed by a medical officer's decision to treat with a full course of anti-TB therapy under DOTS. [8] The timely detection & accurate diagnosis of any form of EPTB is necessary for the proper treatment of EPTB. [9] Atypical presentation, lack of diagnostic resources for procurement of tissue or fluid for diagnosis from

inaccessible sites and a poor yield of conventional diagnostic methods lead to considerable delay in making the diagnosis or diagnosis is even missed.

Furthermore, guidelines regarding diagnosis of EPTB are not covered by RNTCP but all patients are given treatment as per DOTS regimen. Although there is a rising trend in EPTB in recent decade, still EPTB has never been a priority in the campaigns undertaken by Revised National TB Control Programme (RNTCP) for its control. [8,10,11] The percentage of EPTB cases among all TB cases in developed countries ranges from 12% to 28.5%. In developing countries such as India, the percentage of EPTB cases, is between 15% - 20%, which has increased to more than 50% among the HIV co-infected patients [12,13] suggesting immunity status of host being a major risk factor of EPTB. [14]

The aim of the present study was to find out the prevalence of extra-pulmonary tuberculosis among tuberculosis patients visiting a tertiary care centre in 2 years.

Materials and Methods

This was a descriptive cross-sectional study conducted among the tuberculosis confirmed adult patients visiting the Department of Pathology, Patna Medical College & Hospital, Patna, Bihar, India for the period of two years and 50 patients were included in the study. We have included the patients with following inclusion criteria: i) Patient with lymphadenopathy and positive fine needle aspiration cytology (FNAC), adenosine deaminase (ADA) significant to diagnose ascites and pleural effusion, ii) Clinical and radiological features suggestive of spine TB, or other suspected extra pulmonary TB signs, iii) Acid fast bacilli (AFB) positive or Chest X-ray (CXR) suggestive of TB (pleural effusion, fibrocavitary, infiltration, consolidation, fibrosis, collapse, miliary), iv) Positive cases (sputum AFB, GeneXpert), extra pulmonary, computed tomography (CT), magnetic resonance imaging (MRI) positive cases.

Any patient with concomitant cardio-vascular or chest disease that might affect his chest X-ray, and the patients below 15 years of age were excluded from the study. Convenience sampling technique was applied for tracing the study participant. Each of the TB patients was traced from the OPD or IPD of the hospital. After the proper informed consent face to face interview and the verification of the record file was used for collection of data. The predesigned performa was used as data collection tools.

Patients who are the possible case of TB with inclusion criteria presented to the emergency, outpatient or inpatient Department in hospital was taken as participants of the study. Written informed consent was taken. Patient, who is unwilling to participate in the study, were not enrolled in the study. All patients' history detail and clinical examination was done. demography, clinical features laboratory parameter and outcome was recorded as per Performa. Blood, Sputum, Mantoux test investigations were routinely done without any financial burden to the patient. Findings of pleural fluid analysis done were noted. CT, X-ray finding was noted with the recent film and conformed to the radiologist report. Patients were seen till 1 week after ATT or until discharge from the hospital. All the data was analyzed and divided into two groups, according to our case definition in Pulmonary TB and extra pulmonary TB.

Data were entered and analysed with IBM SPSS Statistics version 23.0. Point estimate and 95% CI were calculated.

Results

Table 1: Characteristics of the study population and the symptoms

Characteristics		n (%)
Age (years)	16-40	33 (66)
	40-50	5 (10)
	>50	12 (24)
Gender	Male	32 (64)
	Female	18 (36)
Domicile	Urban	37 (74)
	Rural	13 (26)
	Businessman	1 (2)
	Farmer	17 (34)
	Housewife	7 (14)
Occupation	Labor	4 (8)
	Prisoner	1 (2)
	Security guard	3 (6)
	Student	17 (34)
HIV status	Positive	5 (10)
	Fever	27 (54)

	Cough	26 (52)
	Chest Pain	12 (24)
Symptoms	Loss of appetite	21 (42)
	Weight loss	18 (36)
	Lymphadenopathy	13 (26)
	Hemoptysis	6 (12)

Out of 80 patients included in our study, the prevalence of extrapulmonary tuberculosis is found to be 50 (62.5%). 32 (64%) were males and 18 (36%) were females. Most of them were from the urban area i.e. 37 (74%) and 13 (26%) were from the rural areas. Most of them were farmers, followed by students and housewives, while there was least number of businessmen 1 (2%). Out of all, 5 (10%) were HIV serologic status.

Table 2: Distribution of extrapulmonary tuberculosis

EPTB	**n (%)**
Pleural effusion	33 (66)
Dissiminated tuberculosis	6 (12)
Abdominal TB	5 (10)
TB meningitis	1 (2)
TB lymphadnitis	3 (6)
TB pericardial effusion	1 (2)
Miliary Tuberculosis	1 (2)
Total	50 (100)

Among the extra pulmonary cases, 33 (66%) were pleural effusion followed by disseminated tuberculosis 6 (12%) and 3 (6%) abdominal TB.

Table 3: Symptoms, age, locality and duration of stay in extra pulmonary tuberculosis

Symptoms	**n (%)**
Weight loss	14 (28)
Loss of appetite	21 (42)
Evening rise of temperature	27 (54)
Cough more than 2 weeks	26 (52)
Fatigability	12 (24)
Lymphadenopathy	12 (24)
Sputum positive	12 (24)
Mantoux test	3 (6)
Death	3 (6)
0-7 days	15 (30)
7-14 days	27 (54)
>14 days	8 (16)

Out of 50 extrapulmonary cases, 14 (28%) had loss of weight, 21 (42%) had loss of appetite and 27 (54%) had reported that they have evening rise of temperature.

Table 4: Asitic and pleural fluid ADA

Pleural fluid	**ADA**		**Total n (%)**
	Negative n	**Positive n**	
Negative	9	3	12 (24)
Positive	8	30	38 (76)
Asitic fluid			
Negative	13	30	43 (86)
Positive	2	5	7 (14)

Among the 50 extrapulmonary cases, Ascitic was positive in 7 patients and pleural fluid was positive in 38 patients.

Table 5: Radiological findings in extrapulmonary

Radiological diagnosis	n (%)
Normal	6 (12)
Fibrocavitary	4 (8)
Infiltration	1 (2)
Consolidation	4 (8)
Pleural effusion	32 (64)
Lymphadenitis	1 (2)
Pericardial effusion	1 (2)
Multifocal lesion	1 (2)
Total	50 (100)

Out of all the 50 cases, 32 (64%) patients had pleural effusion followed by 4 (8%) fibrocavitation and consolidation respectively and 6 (12%) patients had normal radiological finding.

Discussion

Tuberculosis is one of the leading causes of death from a single infectious agent, ranking above HIV/AIDS. [15] National data suggestive of 29% were bacteriologically or clinically diagnosed extrapulmonary TB. [16] The most common extrapulmonary tuberculosis (TB) is lymph node followed by the intestine, miliary TB, bone/joints, meninges, skin, genital, larynx and TB in other sites like pericardium, breast, thyroid, salivary gland, soft tissue. Body fluid and biopsy are the hallmarks of the diagnosis. [17] Extra efforts should be afforded in the community to not miss the extrapulmonary TB. [18] Patients with strongly suspected tuberculosis disease and negative sputum microscopy or culture still get the diagnostic problem. It can be more difficult in asymptomatic patients, where its yield in tuberculosis detection rate is up to 21% of sputum-positive cases. [17,19] Experienced clinicians can diagnose TB with radiological and common clinical symptoms.

Out of 80 patients included in our study, the prevalence of extrapulmonary tuberculosis is found to be 50 (62.5%). 32 (64%) were males and 18 (36%) were females. Most of them were from the urban area i.e. 37 (74%) and 13 (26%) were from the rural areas. Most of them were farmers, followed by students and housewives, while there was least number of businessmen 1 (2%). The result of our study is similar to the study done in Patna Medical College, however the author has distributed population in 25, 25-50 and more than 50 years. [20] Male represented more 25 (64.10%) than female 14 (35.90%) in this study. Because of their biological and epidemiological causes, male is more prone to get tuberculosis, however, other studied reported as the bias as female has less access to health services. Most of the patients presented from the urban (74%) area. Most of the patients in our study were of low socioeconomic background, most of them were farmers and students contained 66.6% of total extra pulmonary cases.

Out of all, 5 (10%) were HIV serologic status which is greater than published study from tuberculosis center, as it was 2.5%. [21] Among the extra pulmonary cases, 33 (66%) were pleural effusion followed by disseminated tuberculosis 6 (12%) and 3 (6%) abdominal TB. Out of 50 extrapulmonary cases, 14 (28%) had loss of weight, 21 (42%) had loss of appetite and 27 (54%) had reported that they have evening rise of temperature. Among the 50 extrapulmonary cases, Ascitic was positive in 7 patients and pleural fluid was positive in 38 patients. Out of all the 50 cases, 32 (64%) patients had pleural effusion followed by 4 (8%) fibrocavitation and consolidation respectively and 6 (12%) patients had normal radiological finding. Similar study done in tertiary care centre is different finding than in our study. They have enlisted the most common extra pulmonary tuberculosis is lymph nodes TB followed by a peritoneum and intestines. [19]

Conclusion

Extra-pulmonary tuberculosis is common in urban areas, mostly in low socioeconomic populations. Tuberculosis presents with a varied spectrum of symptoms. In countries like India where TB is widely prevalent, it is always suggested to keep the rare possibility of extrapulmonary TB in mind when patients present. A detailed history, combined with thorough physical examination and vital investigations are necessary, particularly in identifying atypical forms of extrapulmonary TB. Culture is also an essential step in diagnosis. Sophisticated techniques like PCR may not be available in a setup with limited resources. Histopathological examination is essential for confirmation. Management with ATD is effective.

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