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A RETROSPECTIVE ANALYSIS OF EXTRA PULMONARY TUBERCULOSIS

Pulmonary Medicine

Dr. Stacey Boban Mathew * Senior Resident *Corresponding Author

Dr. Irfan Professor and HOD of Dept of Pulmonary Medicine

Dr. Adarsh Mynalli Assistant Professor

Dr. Sharath Chandra K.S Senior Resident

ABSTRACT

Tuberculosis has been one of the major public health concerns since many years now. Around 15-20% of TB cases are found to be extrapulmonary1. Diagnosis is challenging due to its pauci bacillary nature2. The objective of this study is to determine the pattern and sites of extra pulmonary tuberculosis in patients presenting to our tertiary hospital. Materials and Methods- This is a hospital based retrospective observational study. A total of 73 patients were included in the study. Study period was 1 year (Jan 2019 – Jan 2020). Data regarding the various samples, sites and various tests done – AFB, CBNAAT were collected. Both microbiologically or clinically diagnosed extrapulmonary tuberculosis were included. Records were obtained from the medical records maintained in the DOTS centre of our hospital. Results-Majority of the patients belonged to the age group of 21-40 years (42.5%) with male (61.6%) predominance. Most common extrapulmonary site was pleura (27.8%) and least common was endometrium (1.4%). 71.2% of the cases were clinically diagnosed and 28.8% were microbiologically confirmed. CBNAAT detected TB bacilli in 23.3% of the cases. Conclusion- In our study the most common site of extrapulmonary tuberculosis was pleura presenting as pleural effusion and in majority of them TB bacilli could not be detected.

KEYWORDS

Extrapulmonary Tuberculosis, Pleura, Pleural Effusion, CBNAAT

INTRODUCTION

Tuberculosis has been a global health concern for a very long time now.[1] It has been estimated that around 10 million new TB cases were reported in the year 2019. India has high burden of TB cases therefore high number of EPTB also. Extra Pulmonary TB is found to be about 15- 20% of arising new TB cases. With the rise in HIV infection globally the occurrence of TB and EPTB has also risen. More than 50% of EPTB is found to be associated with HIV. Moreover EPTB has atypical presentation in HIV infected patients which makes the diagnosis difficult.

Diagnosis of EPTB needs high level of clinical suspicion and diagnostic procedures due to its pauci bacillary nature and atypical presentations [1]. Collection of samples for diagnosis of EPTB is also difficult as sometimes there can be deep seated lesions and their presentation may also mimic other diseases. EPTB is less infective compared to pulmonary TB[3]. Most of the time EPTB may be smear negative and may not have direct lung involvement [1]. Various methods are used for the diagnosis of EPTB such as smear microscopy, culture , histopathology, tuberculin skin test (TST), interferon-gamma release assays (IGRAs) and nucleic acid amplification (NAA) tests [4]. Lymph nodes are found to be most commonly involved followed by pleural TB, skeletal, meninges or CNS, urogenital, abdominal and skin.

Clinically diagnosed case is a patient with negative microbiological tests for TB(microscopy, culture and validated PCR tests) but with strong clinical suspicion and other evidence of extrapulmonary tuberculosis such as compatible imaging findings, histological findings, ancillary diagnostic tests or response to anti TB treatment.

Microbiologically confirmed case is a patient who has a microbiological diagnosis of extrapulmonary tuberculosis based on positive microscopy, culture or validated PCR based tests.

Objective

To determine the pattern of occurrence and sites of extra pulmonary tuberculosis

Materials and Methods

This is a retrospective study conducted in the department of Pulmonary Medicine for a study period of 1 year, Jan 2020- Jan 2021.

The study commenced after obtaining clearance from Ethical Committee.

Data regarding patient name, age, site of extra pulmonary tuberculosis, case definition (Microbiologically confirmed or Clinically diagnosed), samples sent for AFB stain (Fluorescent Microscopy), CBNAAT, histopathology, radiological investigations performed (MRI, CT, XRay) from records maintained in the DOTS centre of our hospital.

Study Design

This is an observational study.

Sample size

The estimated sample size for this study was 73

$$n = \frac{Z^2 * p * q}{e^2}$$

Z is the standard normal deviate, which is equal to 1.96 at 5% significance level.

Inclusion Criteria

- Patients who are clinically or microbiologically diagnosed to have extra pulmonary tuberculosis.

Exclusion Criteria

- Cases with incomplete records

RESULTS

Most number of patients with extra pulmonary TB were in the age group of 21-40 years. Out of 73 patients 45 (61.6%) were males and 28 (38.4%) were females. Most common site of occurrence was pleura, which was seen in 20 out of 73 (27.8%) patients, followed by lymph node, spine, abdominal, meninges, genitourinary TB and endometrium.

Table1

Site	Number	Percentage
Pleura	20	27.8
Lymph Node	19	26.0
Spine	15	20.5
Abdominal	10	13.7
Meninges	06	8.2
Genitourinary TB	02	2.7
Endometrium	01	1.4
Total	73	100.0

52 (71.2%) out of 73 patients were clinically diagnosed to have extrapulmonary TB and 21 (28.8%) were microbiologically confirmed with CBNAAT or Fluorescent microscopy. Mtb was detected in

CBNAAT in 17 (23.3%) patients. AFB was detected using Fluorescent Microscopy in 6 patients. 5 patients had 1+ and 1 patient was found to have 3+ in the tested extrapulmonary samples. 2 (2.7%) out of 73 patients were found to be HIV reactive.

DISCUSSION

In our study conducted males were more in number compared to females, 45 out of 73 patients were males and 28 were females. Most common age group involved was 21-40 years. Similar results were seen in a retrospective study conducted by Bilagi RB et al[5] in Aurangabad on 113 patients out of which 79 cases were extrapulmonary. Among these patients males were more in number than females. Their maximum number of patients with extrapulmonary TB was in the age group of 21-30 years. Similarly in other studies conducted by K. Suresh et al[6] and in another retrospective study conducted by C. Mohan Rao et al[3] males were more commonly found to get diagnosed with extrapulmoanry TB.

In our study most common site of occurrence of extrapulmoanry TB was pleura which presented as pleural effusion (27.8%) followed by lymph node (26%),spine(20.5%), abdominal(13,7%), meninges(8.2%), genitourinary(2.7%) and endometrium(1.4%). Similar observation was made by Bilagi RB et al[5] in their study where 92% of patients presented with pleural effusion followed by milliary TB, tubercular lymphadenitis and tubercular empyema. However in studies conducted by K. Suresh et al[6] and C. Mohan Rao[3] lymph node TB was found to be more common followed by pleura.

In our study CBNAAT could detect Mtb in 17(23.3%) patients. In the study conducted by K. Suresh et al[6] which included 103 patients with extrapulmonary TB, CBNAAT was detected positive in 45 patients.

In our study Fluorescent microscopy could detect AFB in 6 out of 73 patients with extrapulmonary TB. In the study conducted by K. Suresh et al[6] AFB was detected using Fluorescent Microscopy in 17 out of 103 patients.

In our study 2 patients were found to be HIV reactive. Similarly in the study conducted by Bilagi RB et al[5] 2 of the patients with extrapulmoanry TB was found to be HIV reactive.

CONCLUSION

From our study we could conclude that extrapulmonary TB is more common among males and in the age group of 21- 40 years. Most of the cases were clinically diagnosed. Pleura was the most common site involved followed by lymph node, spine, abdomen, meninges, genitourinary and endometrium. CBNAAT could not be detected in majority of the extrapulmoanry samples tested.

CONFLICTS OF INTEREST

There are no conflicts of interests in this study.

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