
ORIGINAL ARTICLE

Study of Frequency of Extra Pulmonary Tuberculosis in Gulab Devi Hospital Lahore

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ABSTRACT

Background: T.B is very important clinical state which can involve any organ of the body. Term EPTB is used to describe the T.B of other organs rather than lungs.

Objective: The objective of this study is to see the frequency of EPTB in different organs of the body with relation to family and past history and ratio of EPTB and PTB.

Methods: We performed observational study in 167 patients presented with EPTB in outdoor department of Gulab Devi Hospital Lahore. Diagnosis were made by different investigations, then we compared the frequency of EPTB in various organs of the body in relationship with sex and contact and past history.

Results: Total patients are 167 out of which 75(44.9%) are females and 92(55.1%) are males. Mean age of all patients is 32.28 years. Most common clinical presentation of extra pulmonary T.B was Pleura effusion 74(44.3%), patients presented with T.B of the joints were 39(23.4%). Other organs involved were abdomen, lymph nodes, brain and pericardium. Patients who were reported with abscess and disseminated T.B accounts only for 1.8% of all reported cases. Patients presented with T.B of eye were only 0.6% of all patients. 22 (13.17%) patients have positive contact history and 13(7.78%) patients were presentation with previous history of T.B.

Conclusion: Most common clinical presentation of EPTB is pleural effusion in age group of 20-40 years in both sex.

Key words: Pulmonary tuberculosis, Extra pulmonary tuberculosis.

INTRODUCTION

Tuberculosis is an infectious and chronic disease which is caused by mycobacterium tuberculosis. It can affect any organ of the body. Of all types of tuberculosis, pulmonary tuberculosis is most common. One third of world's population is infected by T.B¹. Although pulmonary T.B is the most common clinical presentation, extra pulmonary T.B is also a significant clinical problem^{2,3}. Term EPTB has been used to describe the T.B of the other organs rather lungs such as brain, bones, lymph nodes, kidneys, joints, skin etc⁴. Extra pulmonary T.B is an important type which is difficult to diagnose. The patients with coexistence of pulmonary and extra pulmonary tuberculosis were included in pulmonary tuberculosis group.

The propagation of tuberculosis is strongly related to socioeconomic status and hygiene condition of the patient⁸⁻⁹. Tuberculosis is generally a disease of poverty having a high prevalence in developing countries. Tuberculosis occurs in both sex, in all age group and virtually can affect any organ of the body². EPTB accounts for 1/3 of all

cases of T.B. An estimated annual morbidity and mortality rate of patients with T.B is 1.3 million and 450000 respectively⁵. EPTB is milder form of disease as it is less infective than pulmonary T.B. Prevalence of EPTB has been found to be high in children as in adults. Children show a higher predisposition to development of extra pulmonary tuberculosis. The impact of extra pulmonary tuberculosis is greatest among infants and young children who tend to develop more severe extra pulmonary disease, especially meningitis and military tuberculosis¹⁰⁻¹¹.

The diagnosis of pulmonary tuberculosis is relatively easy than extra pulmonary tuberculosis. The major challenge for the diagnosis of EPTB is frequently atypical clinical presentation which frequently results in delay and deprivation of treatment. Therefore a high index of suspicion is necessary to make an early diagnosis and more than one procedure is necessary for the confirmation of diagnosis. Enzyme-linked assays, slide agglutination techniques and PCR tests are helpful in the diagnosis of EPTB, however they take relatively long time for diagnosis and their

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specificities and sensitivities are variable⁷. Biopsy of the involved area may also consider to support the diagnosis.

The aim of the study is to compare the different types of extra pulmonary tuberculosis in males and females with relation to previous and past history and their geographical distribution. All the patients were assessed for their clinical presentation of sign and symptoms. Diagnosis were made by positive smear culture, AFB smear, biopsy of the involved organ, PCR, strong clinical and family history of the patient.

MATERIAL AND METHODS

Study Design

Cross sectional study

Setting

Study was conducted and completed at Gulab Devi Hospital Lahore

Duration of study

The duration of study was 4 months

Sampling Technique

Non probability purposive sampling was used to collect the data

Sample Selection Criteria

Inclusion criteria

- 1 Diagnosed patients of EPTB
- 2 Patients having constituent symptoms of T.B
- 3 Patients having enlargement of lymph nodes of longer than one month

Exclusion criteria

- 1 Infants and children age < 5 years were not included
- 2 All those cases who got obvious, regional, area infection were not included
- 3 Patients with obvious malignant lesion in the regional area were not included

Sample Size

Sample size of the study was 167 to meet the objective.

Methodology

This study has been carried out in one thousand sixty four patients came with their clinical presentation in the outdoor department of Gulab Devi Hospital Lahore in 2012. All patients were investigated according to specific diagnostic

criteria including: history of contact with T.B patient, clinical manifestations, radiological findings, tuberculin test and bacteriological and pathological results and after confirmation treatment was administered. About 16% of all cases of tuberculosis had extra pulmonary tuberculosis. Out of one thousand sixty four patients, one sixty seven had extra pulmonary tuberculosis, and data concerning following factors were studied: age, gender, site of involvement, geographical distribution ,history of contact ,past history ,AFB smear, PCR, MRI, bacteriology and pathology.

Data Collection Procedure

Questioner was made to collect the data.

Data Management

After collecting the data it was entered on the computer using SPSS version 16 software.

Data Analysis Technique

After entering the data on SPSS version 16. Qualitative variable such as Gender were presented in the form of Graph e.g Bar and Pie chart, Tables and along with its Percentages. Quantitative data were presented in the form of (Mean⁺ S.D).

RESULTS

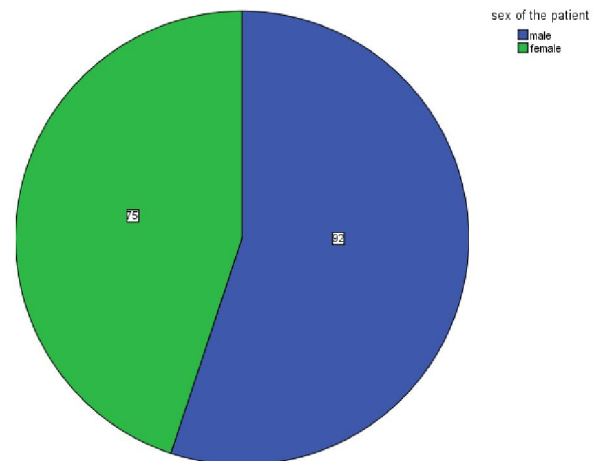


Figure 1: Frequency of Gender
In this study 92(55.1%) were males and 75(44.9%) were females out of 167 patients.

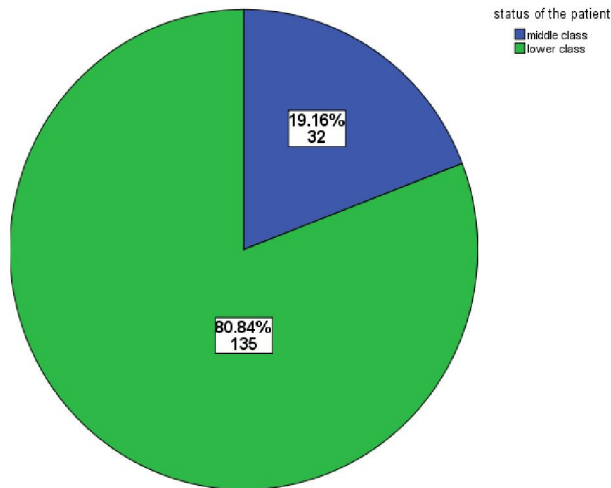


Figure 2: Status of the patient

In this study, 32(19.16%)patients were belong to middle class and 135(80.84%)patients were belong to lower class.

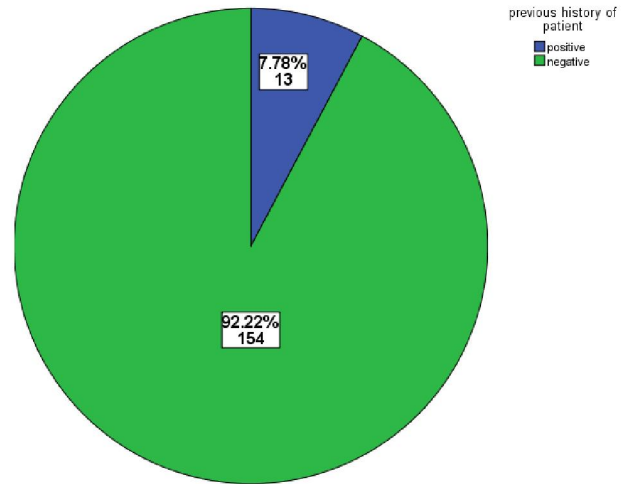


Figure 3: Previous history of the patient

In this study 13(7.78%)patients were presented with previous positive history and 154(92.22%)patients were presented with previous negative.

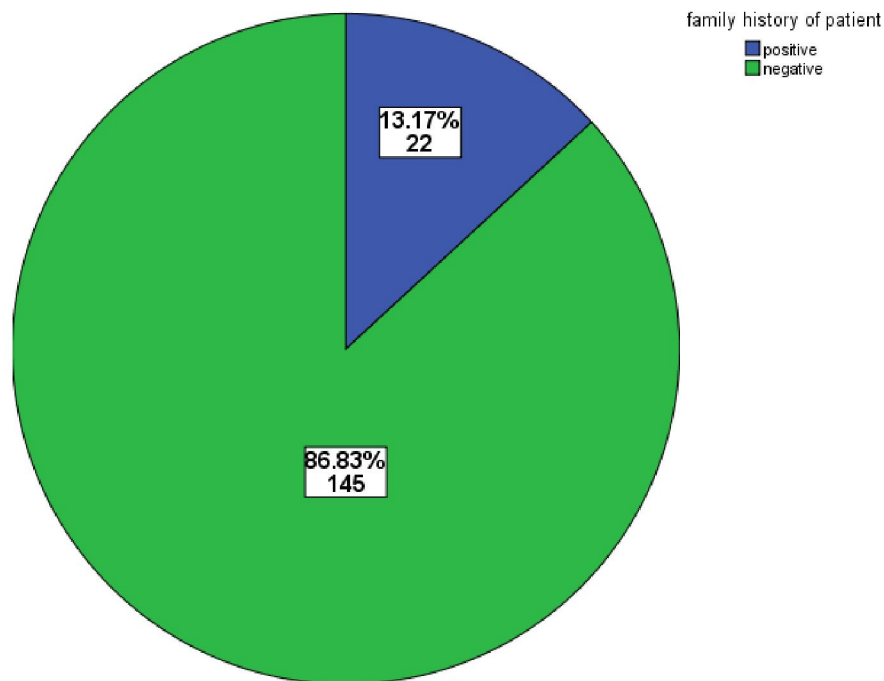


Figure 4: Family history of the patient

In this study of 167 patients, 22(13.17%)patients were presented with positive family history and 145(86.83%)patients were presented with negative family history.

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Table 1: Descriptive Statistics of age of the patient(year)

In this study, the minimum age of the patient is 7 years, maximum age of the patient is 85 years, mean age of the patient is 32.28, and standard deviation is 15.52.

	N	Minimum	Maximum	Mean	Std. Deviation
age of the patient in year	167	7	85	32.28	15.524
Valid N (listwise)	167				

Table 2: Descriptive statistics of Diagnosis of the disease

During the study, there were 167 cases of extra pulmonary tuberculosis out of which 74(44.3%) patients had pleural effusion, 11(6.6%) had abdominal T.B, 22(13.2%) had lymphadenopathy, 6(3.6%) had tuberculosis meningitis, 39(23.4%) had T.B of joints, 3(1.8%) had abscess, 5(3%) had pericardial effusion, 3(1.8%) had disseminated T.B, and only one patient presented with chorneoratinitis

Type Of T.B	Frequency	Percent	Valid Percent	Cumulative Percent
pleural effusion	74	44.3	44.3	44.3
abdominal tb	11	6.6	6.6	50.9
lymph node	22	13.2	13.2	64.1
acities	3	1.8	1.8	65.9
T.B.M	6	3.6	3.6	69.5
joints	39	23.4	23.4	92.8
Eyes	1	.6	.6	93.4
pericardial	5	3.0	3.0	96.4
Abcess	3	1.8	1.8	98.2
Millary	3	1.8	1.8	100.0
Total	167	100.0	100.0	

DISCUSSION

The study is based on pleural biopsy, AFB smear, culture positive, histopathology examination, strong clinical and family history that indicate the diagnosis of extra pulmonary tuberculosis in the given population.

In 1993, the WHO declared tuberculosis is an emergent disease, because approximately 8 million people are infected worldwide. Moreover significant challenges like increased drug resistance has been noted⁴⁻¹². Our study shows higher number of males who presents with pleural effusion and lymphadenitis than that of females; however the ratio of females in all other types of

extra pulmonary tuberculosis is greater than that of males. Some international studies revealed male preponderance¹³⁻¹⁴. While study conducted by Husain et al showed that extra pulmonary tuberculosis is equally common in males and females¹⁵.

In this study, maximum incidence of extra pulmonary tuberculosis in both sex is between age 20-40 years. The most common type of extra pulmonary tuberculosis is pleural effusion with high incidence rate in males. During the first five years of life, the body resistance against tuberculosis is low. From five to fifteen years of life resistance is at its peak but it breaks down again in old age

especially in males¹⁶. Due to immune deficiency, females are more prone to develop the disease¹⁷. Makaju and colleague¹⁸ found extra pulmonary tuberculosis common in age group less than 25 years (60%), similar results are seen in study conducted in Bangladesh¹⁹. Constitutional symptoms were weight loss, low grade fever at evening and night with sweating and other symptoms were specific to site. According to the study conducted by the Danish, 75% patients presented with weight loss, 55% with evening pyrexia and 40% with night sweats²⁰.

T.B of the Pleura

Tuberculosis of pleura is categorized as extra pulmonary as intimate relationship between pleura and lung²¹⁻²². In our study, the most common extra pulmonary Tuberculosis is the T.B of the pleura. All cases were diagnosed on the basis of pleural biopsy, AFB smear positive, sputum culture, histopathology and PCR. Common symptoms of patients with pleural effusion were breathlessness, fever, weight loss, and cough. Some patients also had pleuritic chest pain. Same results also presented by another report²³.

Lymphadenopathy

There are total 22 cases of lymphadenopathy, among lymph nodes, cervical group is most commonly effected followed by axillary and supraclavicular lymph nodes, while one study conducted in India found axillary lymph nodes²⁴ and another study conducted by Ilgazli showed intrathoracic lymph node involvement followed by cervical and axillary lymph nodes²⁵. Patients with lymphadenopathy presented with complaints of weight loss, loss of appetite and fever. Diagnosis is made by sputum culture, AFB smear, and histopathology examination.

Bone and joint Tuberculosis

Skeletal tuberculosis is a hematogenous infection and effect all bones. It commonly affects the spine and hip joint²⁶⁻²⁷. In our study, this is the second most common type of extra pulmonary tuberculosis. There were 39 patients who were presented with T.B of joints. Patients had clinical symptoms of redness and disability of relevant joint and low grade fever. There were 26 cases presented with T.B of spine other joints include knee, ankle, sternoclavicular, wrist, and elbow joint. All cases were diagnosed on biopsy revealed

caseous granulomatous necrosis. Help was also taken by MRI in all spine cases.

Abdominal Tuberculosis

Term abdominal tuberculosis is used to describe the T.B of gastrointestinal tract, peritoneum, the T.B of gastrointestinal tract, peritoneum, mesentery, its nodes, and other solid organs e-g liver and pancreas²⁸. In our study there were 14 cases of abdominal T.B out of which 11 were presented with ascities and other 3 had illieoc fossa mass, ultra sound guided biopsy showed caseous granulomatous lesion. Ascities were diagnosed by sputum culture, PCR, and clinically diagnosed. Patients were presented with loss of appetite, weight loss, low grade fever, abdominal pain, alternative constipation and diarrhea.

Tuberculosis meningitis

Neurological tuberculosis may be classified into three categories: Tuberculosis meningitis, tuberculoma, and arachnoiditis²⁹⁻³⁰. T.B.M is most common clinical presentation in all of them²⁹⁻³¹. In our study there were only 6 cases of T.B.M presented with complaints of fever and weight loss, anorexia, headache, and vomiting. Diagnosis was confirmed by CSF culture. Out of 6 patients there were 4 females and 2 males. Cranial nerve palsies can occur in 20-30% of patients, the sixth nerve involvement being the most common³¹⁻³².

Pericardial Tuberculosis

Pericardial involvement in tuberculosis may results in acute pericarditis, pericardial effusion, pericardial constriction, and cardiac tamponade. There were 5 cases of pericardial effusion, (1 was male and 4 were females) diagnosed on pericardial tap, PCR, and histopathological examination presented with constitution of symptoms along with fever and weight loss. Patient may also present with acute severe distress, retrosternal compression, tachycardia, orthopnea, and edema²³.

Abscess and disseminated Tuberculosis

Three cases of each were presented with constitutional symptoms along with low grade fever, weight loss, and anorexia diagnosis were made on sputum smear, sputum culture along with strong clinical history. In each of type male to female ratio was 1:2.

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Eye

There was only one case presented with T.B of eye that was referred to our hospital from the tertiary hospital. Diagnosis was made by senior clinician.

CONCLUSION

Extra pulmonary tuberculosis accounts for approximately 16% of all cases of tuberculosis. This study indicated frequency of extra pulmonary tuberculosis in different organs with frequent clinical presentation of pleural effusion in males. Extra pulmonary tuberculosis is most common in age group between 20-40 years in both males and females with clinical presentation of fever, weight loss, and anorexia in all types of extra pulmonary tuberculosis. It is a significant health problem which cannot be denied. Early diagnosis of extra pulmonary tuberculosis can reduce the morbidity and mortality rate.

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