

A RETROSPECTIVE REVIEW OF EXTRAPULMONARY TUBERCULOSIS AT A TERTIARY CARE HOSPITAL IN KARNATAKA, SOUTH

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ABSTRACT: OBJECTIVE: To describe the types and treatment outcomes of the extra-pulmonary tuberculosis cases in a tertiary care hospital. **METHOD:** A retrospective case series study was conducted at a rural medical college Hospital. All cases diagnosed and treated as EPTB between June 2011 and June 2013 (25 months) were included. Data was retrieved from medical records on demographics, clinical, laboratory, and outcome status. **RESULTS:** A total of 194 patients treated for EPTB were identified. Mean age of patients was 42 years, 118 were male and 76 female. Lymph node involvement was the most common in 61 patients (31%). The cure rate was 90%. **CONCLUSION:** EPTB is an important clinical problem in tropical countries. According to present study total TB cases from June 2011 to June 2013 were 628 of which total EPTB cases were 194 (30.8%) and among this lymph node involvement was found in 61 (31.4%) cases, pleural effusion in 56 (28.8%) cases, abdominal tuberculosis in 25 (12.8%) cases, tubercular meningitis in 21 (10.8%) and tuberculosis spine in 14 (7.2%) cases.

KEYWORDS: Tuberculosis (TB), Pulmonary tuberculosis (PTB), Extrapulmonary tuberculosis (EPTB), Lymph Node Tuberculosis (LNTB).

INTRODUCTION: As per the World Health Organization (WHO) global TB control report 2011, India continues to bear the highest global burden of TB with an estimated 2.3 million incident cases per annum accounting for more than one-fourth of global TB incidence.¹ Tuberculosis can involve almost every organ and system of the body. EPTB, by definition, is the isolated occurrence of TB at body sites other than the lungs, such as pleura, lymph nodes, abdomen, genito-urinary tract, skin, joints, bones, tubercular meningitis, tuberculoma of the brain, etc.^{2,3} The possibility of EPTB be included in the differential diagnosis of any infectious process in the body.⁴ It is commonly encountered, often presenting with nonspecific symptoms including fever of unknown origin.⁵

OBJECTIVES:

1. To describe the types, prevalence and various risk factors associated with EPTB.
2. Treatment outcome.

METHODOLOGY: This is a retrospective study, conducted by the department of Medicine at Sri. R. L. Jalappa Hospital and Research Centre, attached to Sri Devaraj Urs Medical College, Kolar, having a TB unit. This is a tertiary care hospital situated in a rural area of Karnataka state in South India.

Inclusion criteria: All cases of Tuberculosis were taken to analyse for EPTB.

Exclusion criteria: Those below 18 years were excluded.

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Total TB cases from June 2011 to June 2013 (25 months) were 628, of which total EPTB cases were 194 (30.8%), 88 were treated as outpatient and 106 were admitted under various departments (neurological, pleural, pericardial, skeletal TB cases). The data was analyzed for age, sex, comorbidities, HIV status, treatment given and outcome.

Baseline complete blood count, serum electrolytes, blood urea, serum creatinine, glucose, liver function test, fine needle aspiration cytology (FNAC), various fluid analysis (pleural fluid, peritoneal fluid, synovial fluid, pericardial fluid, and cerebrospinal fluid), polymerase chain reaction (PCR), Adenosine De Aminase (ADA) level, erythrocyte sedimentation rate (ESR), echocardiogram, CT abdomen, CT/MRI brain and MRI spine, upper gastrointestinal endoscopy, colonoscopy, laparoscopy, cystoscopy and biopsy were done according to the symptoms. Sputum examination was done in cases of history of cough and chest- x ray was done in all patients. Majority of patients had fever of 15 to 60 days duration. Other major symptoms were cough, weight loss, easy fatigability, reduced appetite, headache, and breathlessness, hemoptysis, swelling in neck, abdominal distension, altered sensorium, chronic back ache, and infertility, mass per abdomen, pelvic pain, menstrual disturbances and jaundice. Revised national tuberculosis control programme (RNTCP) Category 1 drugs were given. Lymph node TB was treated for shorter duration. TB of meninges, bones, joints, spine and abdomen were treated for longer duration according to weight. Continuation phase was given for six to seven months, total duration of treatment being eight to nine months. Steroids were added in cases of meningeal and pericardial TB for the initial 2-3 weeks.

RESULTS: Total number of patients with TB was 628 in this study. Out of this EPTB were 194 (30.8%). The age range was between 18 to 90 years. Mean age of patients was 42 years, males were 152 and 76 were female. Majority of EPTB cases were observed between age group 18 to 30 years i.e. 90 (46%). Table:1

Total EPTB patients (n=194)
Male: n=120 (61.8%)
Female: n=74 (38.1%)
Table 1

The ratio of pulmonary tuberculosis to EPTB was 3.2:1. (fig. 1)

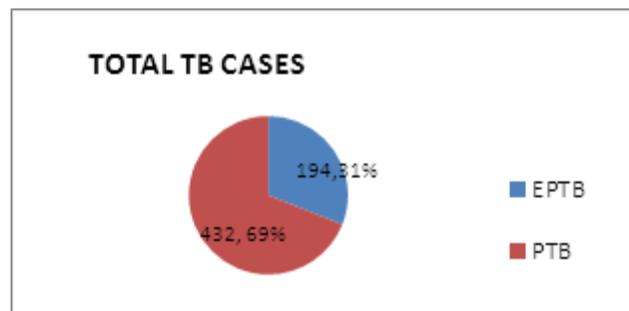


Figure 1

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Various types of EPTB found in this study was as follows: lymph node involvement in 61(31.4%) cases, pleural effusion in 56(28.8%) cases, abdominal tuberculosis in 25(12.8%) cases, tubercular meningitis in 21(10.8%)cases, tuberculosis spine in 14(7.2%) cases, and miscellaneous in 17 cases [genital tract - tubo ovarian mass (1)TB epiglottis(3), TB laryngitis(4), pericardial effusion(3), skin(3) and testis(3)]. (Fig. 2)

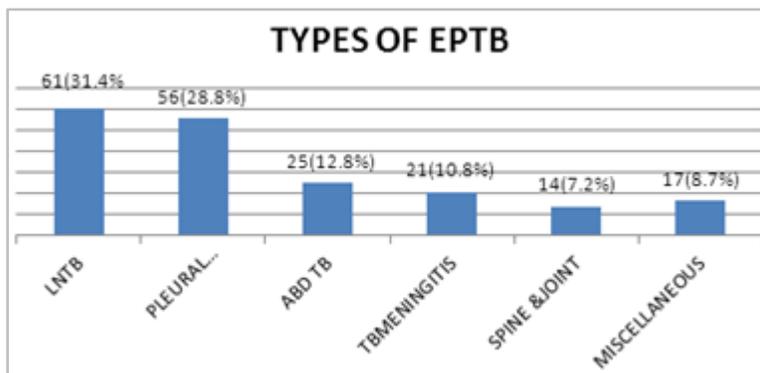


Figure 2

In EPTB group patients 108(55%) were underweight with BMI around 13-14. 128 belonged to rural areas (65 %); most of the patients belonged to upper middle class. 60 were tobacco smokers (30.9%); 40 were alcohol abusers (20.6%); Diabetes mellitus was found in 32 patients (16%); COPD in 28(14.4%), severe anemia in 28(14.4%) cases, hypertension in 14(7.2%), ischemic heart disease in 14(7.2%), myxedema in 1(0.5%)case and HIV in 1(0.5%)case.

History of household TB contact was found in 6 cases.

LNTB was seen in 61(31.4%) cases, common group of lymph nodes involved was single cervical group and was found in 34 out of 76 females (44%). Next common site was pleural effusion in 56(28.8%) cases. Multiple site involvement was found in 10 patients including pulmonary i. e. pleural, meningeal and abdominal lymph nodes, WHO labels pulmonary tuberculosis along EPTB as pulmonary only²and were excluded from the study.

Adverse drug reaction was found in 2 cases, both having rashes and responded to symptomatic treatment. Sequelae were found in 9 cases i.e. 3 cases with subacute intestinal obstruction, perforation and peritonitis, paraplegia in 1 case, obstructive hydrocephalus in 2 cases needing ventriculoperitoneal shunt, stroke due to vasculitis in 1 case and cranial nerve palsy in 2 cases.

Drug default was found in 1 case. 3 were lost for follow up. Mortality rate was found in 3(1.5%) patients. No MDR cases were found.

DISCUSSION: TB continues to be a major health problem in developing countries, due to migration it is again on the rise all over the world, both in most developing and developed countries, with increasing incidence of multidrug-resistant TB and HIV disease.⁶ India still continues to be the country accounting for an estimated one quarter (26%) of all incident cases.⁷ World Health Organization (WHO) declared TB a global health emergency in 1992, it was prevalent in almost all

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countries of the world.⁸ It remains the seventh leading cause of death globally.⁹ The health and economic impact of tuberculosis continues to be among the highest in the world.¹⁰

TB primarily begins in the lung parenchyma or hilar glands and spreads hematogenously or via lymphatics to other body organs. The mycobacteria remain dormant for variable period to reactivate when conditions are optimum. Clinical manifestations depend upon the site and burden of infection and host immune response. EPTB affects highly vascular areas such as lymph nodes, meninges, kidney, spine and growing ends of the bones. The other sites are pleura, pericardium, peritoneum, liver, gastro-intestinal tract, genito-urinary tract and skin and virtually every site of the body can be affected. Among EPTB Lymph nodes are the most common site of involvement followed by pleural effusion. AIDS has contributed to the increased mortality from mycobacterium infections with a high incidence of extra pulmonary involvement. Since 1987, EPTB has been accepted as an AIDS defining Disease.¹¹

EPTB in this study accounts for up to one-third of all cases(30.8%), majority of EPTB cases were observed between age group 18 to30 years i.e. 90 (46%). In this study Lymph Node TB (31.4%) is the commonest form of EPTB with female preponderance seen in 44%. The mortality rate in this study is 1.5%.

EPTB being reported as 21% in Western Europe, 10% in Eastern Europe.¹² Shabbir reported EPTB of 30% in Lahore.¹³ Noertijojo K et al from university of Hong Kong studied 5757 patients of which 13.7% had extra-pulmonary tuberculosis and 8.6% had both extra-pulmonary tuberculosis and pulmonary tuberculosis.¹⁴

Dandapat MC from India reviewed 80 cases of lymph node tuberculosis in which most were younger than 30 years with slight female preponderance (1.2:1).¹⁵ Other studies also show LNTB as the most common site in the body i.e. Humphries MJ from England (34%),¹⁶ Ojo BA in Nigerian study reported 38% cases of tuberculous lymphadenitis.¹⁷ Sreerama Reddy CT et al found younger age and female gender as probable independent risk factors for EPTB in a Nepal¹⁸ Lowieke A.M reports Extrapulmonary TB(38%) was relatively more prevalent among female (45.3%) than among male TB patients (33.1%) Netherlands.¹⁹ Fain O et al studied 141 cases of extrapulmonary tuberculosis in patients not infected by HIV in the northeastern suburbs of Paris 73.6% of the patients were foreign-born and LNTB was 48.9%.²⁰

Similar to this study female preponderance was seen in LNTB, which is also reported in other studies.²¹⁻²⁶ There was only one case of HIV in this study although extrapulmonary organ involvement of TB is estimated as 10-34% of patients who are not infected with human immunodeficiency virus (HIV), and the frequency is about 50-70% in patients infected with HIV.^{24, 26}

In this study pleural effusion was found in 56(28.8%) cases next to LNTB, which is similar to Mehta's study in which pleura being most common site (25.8%), followed by lymph node(17.4%).²⁵ Another study conducted by Mustafa Kursat Ozvaran et al in Turkey showed that EPTB presented most commonly as pleurisy (66%), followed by lymphadenitis (23%).²⁶

Thus Extrapulmonary tuberculosis accounts for 11-30% of all cases of the literature. Comorbidities like diabetes, hypertension, COPD, and smoking were also significant in this study.

Extra pulmonary TB continues to contribute a significant fraction of the total cases of tuberculosis Globally.

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CONCLUSION: EPTB remains an important infectious disease that too in younger age population, in this study one in every three TB patients had extrapulmonary TB, with commonest form being lymph node involvement. The cure rate in this study is 96%. It is not still known as to why LNTB cases predominate amongst EPTB patients, and why female cases predominate amongst LNTB cases.

A high index of clinical suspicion, use of appropriate diagnostic methods and confirmation of the diagnosis, early institution of DOTS can prevent morbidity and mortality in EPTB. Global TB control is possible through the DOTS strategy. The health and economic impact of TB continues to be among the highest in the world.²⁷ A highly efficient DOTS Therapy program is essential to achieve the goal of WHO to reduce the global burden significantly by 2015, as per the STOP TB Strategy.

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