

Profile of Extra - Pulmonary Tuberculosis in a Tertiary Care Centre

Dr. Malathy Dharmarajan M. S¹, Dr. Preethi Krishnaraj M. S.²

¹DGO, Associate professor, Head of The Department., Department of General Surgery, Government Thiruvannamalai Medical College and Hospital, Thiruvannamalai, India

²Assistant Professor, Department of General Surgery, Government Thiruvannamalai Medical College and Hospital, Thiruvannamalai, India

Abstract: *This study is about to estimate the properties of the pattern of extra pulmonary tuberculosis. Based on the retrospective cohort study done in government thiruvannamalai medical college, I conclude that the burden of extra pulmonary TB more among the productive age group. this can be prevented by strengthening the service of vulnerable age group, health education, well defined protocols for diagnosis and management of extrapulmonary tuberculosis.*

Keywords: extra pulmonary tuberculosis

1. Introduction

Tuberculosis (TB) is one of the most important global health problems. The prevalence of TB is high among the developing world. India has the highest TB burden, accounting for 1.9 million cases of the 9.1 million cases of globally. Although tuberculosis is primarily the disease of affecting the lungs (Pulmonary Tuberculosis), it may have various manifestations and can affect many sites such as lymph nodes, central nervous system, bones, and gastrointestinal tract which is known as Extrapulmonary tuberculosis. Disease patterns since have changed, with a higher incidence of disseminated and extrapulmonary disease now found. The diagnosis of extrapulmonary tuberculosis can be elusive, necessitating a high index of suspicion. Physicians should obtain a thorough history focusing on risk behaviors for human immunodeficiency virus (HIV) infection and tuberculosis. A negative smear for acid - fast bacillus, a lack of granulomas on histopathology, and failure to culture *Mycobacterium tuberculosis* do not exclude the diagnosis.

Although children and persons with immunodeficiencies, such as HIV infection and Diabetes Mellitus, are at greater risk to have extra - pulmonary TB, pulmonary disease remains the most common type of illness seen worldwide. When the bacteria became active, about 75% of cases are pulmonary TB and the remaining 25% are extrapulmonary. TB has probably killed 100, 000 million people over the past 100 years and has been the world's second leading cause of death among the infectious disease after HIV/AIDS. Although global TB prevalence and death rates have possibly been declining for several years the total number of TB cases was still rising slowly due to continuing growing case - load in Africa, Eastern Mediterranean and South - East Asia Region.

Extrapulmonary TB (EPTB) is the result of the dissemination of tubercle bacilli from an initial focus in the lungs soon after primary infection. The dissemination is primarily by way of lymphohematogenous route, with seeding of virulent tubercle in almost all of the organs and tissues of the body. Although in most patients, both pulmonary and extrapulmonary lesions, eventually heal clinically subtle granulomas contain tubercle bacilli which can remain viable

for decades. The incidence of new cases of Extrapulmonary TB has remained constant, despite the decline in new cases of active pulmonary TB. This might be due to delay in recognition, and particularly a lack of consideration of TB when the presenting symptoms are not respiratory. EPTB should be considered in the differential diagnosis of bone, joints, genitourinary tract and central nervous system diseases.

2. Objective

To estimate the properties and pattern of Extra - pulmonary Tuberculosis cases that were diagnosed in a tertiary care centre.

3. Methods

This is a retrospective, record based study of patients with the diagnosis of EPTB, in all age groups. Data on all consecutive EPTB cases diagnosed at the Government Thiruvannamalai Medical College and Hospital, Thiruvannamalai from January 2021 to June 2022 were collected and analyzed.

The diagnosis of Extrapulmonary TB was established following the RNTCP programme guidelines which required one culture positive specimen from a extrapulmonary site or histopathological evidence by either CBNAAT or biopsy.

- Demographic profile which included gender and age.
- Clinical profile which included organ involved, history of exposure, co morbidities, clinical presentation, complications and mortality rate.

Inclusion Criteria: Individuals of any age and any gender with Extra - pulmonary tuberculosis.

Exclusion Criteria: Patients with pulmonary tuberculosis.

4. Results

Table 1: Distribution of Tuberculosis:

| | | |
|--------------------------------|------|--------|
| Pulmonary Tuberculosis | 2200 | 64.23% |
| Extra - Pulmonary Tuberculosis | 1225 | 35.79% |
| Total | 3425 | 100% |

Table 2: Gender Wise Distribution of Extra - Pulmonary Tuberculosis

| | | |
|--------|------|--------|
| Male | 760 | 62.05% |
| Female | 465 | 37.95% |
| Total | 1225 | 100% |

Table 3: Age Wise Distribution Of Extra - Pulmonary Tuberculosis

| | | |
|--------------|------|--------|
| <13 YEAR | 294 | 24.13% |
| 13 - 30 YEAR | 290 | 23.67% |
| 30 - 50 YEAR | 360 | 29.3% |
| >50 YEAR | 281 | 22.9% |
| TOTAL | 1225 | 100% |

Table 4: Site of Involvement of Extra - Pulmonary Tuberculosis

| | | |
|----------------|------|-------|
| PLEURA | 347 | 28.3% |
| LYMPH NODES | 403 | 32.8% |
| BONE | 167 | 13.6% |
| ABDOMEN | 67 | 5.5% |
| GENITOURINARY | 12 | 0.97% |
| CNS | 186 | 15.1% |
| BREAST | 16 | 1.3% |
| SKIN | 8 | 0.65% |
| EYE | 13 | 1.06% |
| TESTIS | 1 | 0.08% |
| FISTULA IN ANO | 3 | 0.24% |
| KIDNEY | 1 | 0.08% |
| LINGUAL REGION | 1 | 0.08% |
| TOTAL | 1225 | 100% |

Table 5: Age Wise Distribution Based on Site of Involvement

| SITE | <13 | 13 - 30 | 30 - 50 | >50 |
|----------------|-----|---------|---------|-----|
| PLUERA | 2 | 47 | 146 | 252 |
| LYMPH NODES | 147 | 159 | 52 | 45 |
| BONE | - | 26 | 87 | 54 |
| ABDOMEN | 2 | 17 | 36 | 12 |
| GENITOURINARY | - | 8 | 4 | - |
| CNS | 142 | 19 | 13 | 12 |
| BREAST | - | 8 | 8 | - |
| SKIN | 1 | 4 | 2 | 1 |
| EYE | - | 1 | 8 | 4 |
| TESTIS | - | - | - | 1 |
| FISTULA IN ANO | - | 1 | 2 | - |
| KIDNEY | - | - | 1 | - |
| LINGUAL REGION | - | - | 1 | - |

Table 6: Diagnosis of Extra - Pulmonary Tuberculosis Based on Site

| SITE | FNAC | CT/MRI | CBNAAT | Tissue Biopsy |
|----------------|------|--------|--------|---------------|
| PLEURA | 307 | - | 40 | - |
| LYMPH NODES | 270 | - | - | 133 |
| BONE | - | 100 | - | 167 |
| ABDOMEN | - | 45 | - | 67 |
| GENITOURINARY | - | - | - | 12 |
| CNS | - | - | 186 | - |
| BREAST | - | - | - | 16 |
| SKIN | - | - | - | 8 |
| EYE | - | - | 13 | - |
| TESTIS | - | - | - | 1 |
| FISTULA IN ANO | - | - | - | 3 |
| KIDNEY | - | - | - | 1 |
| LINGUAL REGION | - | - | - | 1 |

5. Discussion

Age and Gender incidence:

Among 3425 cases diagnosed as tuberculosis, 1225 cases (35.79%) had EPTB. Males (62.05%) are more commonly affected than females (37.95%). Lymph node TB, Central nervous system TB and TB of bones and joint were more common in females than males. Pleural TB and Abdominal TB were more common in males than females. About 29.3% of the cases of EPTB were among the productive age group (30 - 50yr) highlighting the socio - economic burden of extrapulmonary tuberculosis. Similar reports of higher incidence of EPTB in younger individuals are reported by other studies as well. Comparison of number of PTB and EPTB cases in India by various studies has shown a higher incidence of EPTB cases in tertiary centres and medical college hospitals.

Site involvement:

Lymph node TB was the commonest type of EPTB (32.8%) followed by Pleural TB (28.3%). TB Meningitis was the commonest presentation among less than 13year age group, while involvement of pleura was more common among >50 year age group raising the possibility that the probability of reactivation in pleura may be higher as the age increases. There is a significant increase in the number of cases of tuberculosis affecting bones and other forms of tuberculosis over the years. A similar trend was observed in Kolkata with an increase in the new EPTB cases.

Clinical presentation:

Symptoms of extrapulmonary TB differs according to the tissues involved. The commonest presentation of lymph node TB was swelling in the cervical region, while pleural TB presented with fever, nonproductive cough and pleuritic chest pain. Patients with CNS TB had persistent headache. The commonest presentation for skeletal TB was back pain or stiffness. Patients with abdominal TB presented commonly with abdominal pain, distension and altered bowel habits. Clinical presentations were similar among various studies conducted in India.

Diagnosis

Pleural TB and lymph node TB were most commonly diagnosed by FNAC while TB of bone, abdominal TB and other forms of TB were diagnosed by radiological imaging like CT and histopathological confirmation by CBNAAT or biopsy.

6. Limitations

Being a retrospective study, data about the exposure history and immunocompromised state were not available. Factors like complications and mortality rate could not be assessed, since cases diagnosed were referred to nearby DOTS centre for continuation of treatment.

7. Conclusion

The burden of EPTB is more among the productive age group. The difference in the occurrence of various types of EPTB cases in different age groups and sexes without the

declining trend highlights the importance of strengthening the services for this vulnerable group. Higher reporting of EPTB cases in tertiary centers necessitates the need for ongoing medical education on a larger scale and well - defined program specified protocols for the diagnosis and treatment of extrapulmonary tuberculosis cases.

References

- [1] World Health Organization. Guidelines for the programmatic management of drug - resistant tuberculosis. Geneva: WHO; 2008 (WHO/HTM/TB/2008.402). Carrol ED, Clark JE, Cant AJ. Non - pulmonary tuberculosis. PaediatrRespir Rev 2001.
- [2] Golden MP, Vikram HR. Extrapulmonary tuberculosis: an overview. Am Fam Physician 2005; 72: 17618.
- [3] Arora VK, Chopra KK. Extrapulmonary Tuberculosis. Indian J Tuberc.2007 Oct; 54 (4): 165 - 7.
- [4] Mohan A, Sharma SK. Epidemiology. In: Sharma SK, Mohan A, editors. Tuberculosis. New Delhi: Jaypee Brothers Medical Publishers; 2001 p.14 - 29.