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AN OBSERVATIONAL STUDY ON CLINICO EPIDEMIOLOGICAL PROFILE OF EXTRA PULMONARY TUBERCULOSIS PATIENTS IN GOVERNMENT CHEST DISEASES AND TUBERCULOSIS HOSPITAL, HANAMKONDA, TELANGANA

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ABSTRACT:

BACKGROUND: Tuberculosis is one of the oldest infectious diseases affecting mankind. WHO reports that above 2 million, nearly 1/3rd of the world's population, is infected with tuberculosis [(1)]. Extrapulmonary Tuberculosis (EPTB) has low infectivity as compared to pulmonary tuberculosis, and yet it cannot be ignored as it contributes a substantial proportion of NTEP. The proportion of EPTB cases varies widely from region to region, country to country.

METHODOLOGY: we have conducted an observational study in Government Chest Disease and TB Hospital, Hanamkonda in a period of 1 year from June 2023 to May 2024 in a patient with EPTB visiting Out Patient and In Patient settings. Extra pulmonary tuberculosis is diagnosed by History and clinical examination and chest radiograph, Ultrasound neck, chest and abdomen, FNAC, Biopsy, TRUENAT/CBNAAT.

RESULTS:

- Based on the observational study on 100 EPTB patients, EPTB is more prevalent in the age group between 21- 40 years (49) 49% and its mean is 30.5 and it is more prevalent in male gender 56% (56)
- Socio- economic status was calculated based on the Modified Kuppuswamy scale, among 100 EPTB patients, 60 patients (60%) were belonged to upper lower class ,23 patients (23%) presented with comorbidities, only 10% (10) were with immunocompromised status
- Among 100 EPTB patients the most common symptom is loss of weight and appetite 42 (42%). Followed by shortness of breath and fever 36 (36%), cough 33 (33%).
- History of recent tb contact in 100 EPTB patients within a year is 2(2%) and past TB contact12(12%), 69(69%) were underweight, 6 patients (6%) were presented with pulmonary tuberculosis along with EPTB.
- Based on the study on the distribution of EPTB cases, among 100 EPTB patients, 61(61%) were presented with pleural effusion followed by cervical lymphadenopathy 20(20%) and least common EPTB diagnosed were cutaneous 1(1%) and genital tuberculosis 1(1%).

KEYWORDS: EPTB, NTEP

INTRODUCTION:

DEFINITION: The extra pulmonary tuberculosis refers to any bacteriologically confirmed or clinically diagnosed case of Tuberculosis involving organs other than lungs [(4)].

TB is one of the oldest infectious diseases affecting mankind. Bone TB was identified in 4000year-old skeletons from Europe and the Middle East as the cause of death, showing that this disease was already a widespread health problem back then. In recorded history, Hippocrates writes about patients with wasting away associated with chest pain and coughing, frequently with blood in sputum. These symptoms allowed Hippocrates to diagnose TB, which at that time was called "consumption." The frequency of descriptions of patients with these symptoms indicated that the disease was already well entrenched in ancient time [(2)]. According to global TB report EPTB constitutes 16% Of the 7.5 million reported TB cases globally [(3)]. In immunocompetent patients and accounts for more than 50 percent of the cases in HIV positive individuals.

Lymph nodes are the most common site of involvement, followed by pleural effusion, and virtually every site of the body can be affected. Since the clinical presentation of EPTB is atypical, tissue samples for the confirmation of diagnostics can sometimes be difficult to procure, and the conventional diagnostic methods have a poor yield, the diagnosis is often delayed. The availability of computerized tomographic scans, magnetic resonance imaging laparoscopy, and endoscopy has tremendously helped in the anatomical localization of EPTB. A biopsy and/or surgery is required to procure tissue samples for diagnosis and for managing complications. This extensive literature study is useful in better understanding and to increase awareness regarding tuberculosis, and this study will help to eliminate tuberculosis off the face of the earth in the near future.

AIM AND OBJECTIVES:

AIM: To conduct observational study on the patient with Extra Pulmonary Tuberculosis visiting Govt chest diseases and TB hospital

OBJECTIVE: To know the history, epidemiology, histology, and clinical features and diagnostic algorithm in extra-pulmonary tuberculosis (EPTB) patients of Govt Chest Diseases & TB hospital, Hanamkonda, Warangal, Telangana.

PATIENTS AND METHODS: The study was conducted in Government chest diseases and TB hospital, Hanamkonda, Warangal. Patient diagnosed Extrapulmonary Tuberculosis who fulfil the inclusion. The patients were selected consecutively from Out Patient and In Patient till sample size (100) achieved.

STUDY DESIGN: A prospective observational study was done in the Government Chest Diseases and Tuberculosis hospital Warangal, Telangana.

STUDY PERIOD: 12 months from June 2023 to May 2024

STUDY SETTING: The study was conducted in the Department of Pulmonary medicine, Government Chest Diseases and Tuberculosis Hospital, Kakatiya Medical College, Hanamkonda.

STUDY POPULATION: The study population comprised of patient who diagnosed Extrapulmonary tuberculosis patients of any age in the outpatient department or admitted in inpatient ward.

INCLUSION CRITERIA:

1. Patient who has diagnosed Extrapulmonary tuberculosis (attending the OPD of Government Chest Diseases and Tuberculosis Hospital).

2. TB patients who have given consent to the study.

EXCLUSION CRITERIA:

1. Patients diagnosed with only PTB.
2. Patients too ill to be interviewed at study period.
3. Patients not agreeing to participate in the study.

OPERATIONAL DESIGN: The study initiated after obtaining written and informed consent from the patient. An observational study was conducted in a patient visiting Govt chest diseases and Tuberculosis hospital, hanamkonda, Telangana.

DATA COLLECTION: Data has been collected with the semi-structured proforma which contains socio demographic profile

DIAGNOSTIC TESTS:

- SPUTUM COLLECTION FOR AFB staining, TRUENAT, CBNAAT
- Extrapulmonary specimens for HISTOPATHOLOGICAL EVALUATION, AFB, TRUENAT/CBNAAT.
  Pleural fluid, peritoneal fluid, pericardial fluid, pus / tissue specimen from abscess/ lymph node, intestinal tissue, urine etc.,
- CHEST RADIOGRAPHY
- USG – CHEST, NECK, AXILLA, ABDOMEN AND PELVIS.
- HRCT – CHEST, ABDOMEN
- MRI SPINE, BRAIN
- ECG 2-D ECHO
- CBP, LFT, RFT
- HIV/HBS Ag
- MANTOUX TEST

DATA ANALYSIS:

Data quality was ensured through onsite supervision and review of completed forms. Data cleaning was done the same day of the data collection. The collected data were numerically coded and then data were entered using Microsoft Excel version 2016. The data was then exported to Statistical Package for Social Sciences software version 20 for analysis. Descriptive statistics like frequencies and percentages were done to study the baseline demographic characteristics. Statistical significance was fixed at P value of <0.05. Association between various variables was determined using Chi square test.

OBSERVATIONS & RESULTS

AGE

AGE	NUMBER	PERCENTAGE
<20	10	10%
21-40	49	49%
41-60	31	31%
>/=61	10	10%
TOTAL	100	100%

- Among 100 patients, EPTB is more prevalent in the age group between 21- 40 years (49) 49% and its mean is 30.5. Second most prevalent in the age group 41 - 60 years (31) 31%

GENDER

MALE	FEMALE	TOTAL
56	44	100
56%	44%	100%

- EPTB is more prevalent in male gender 56% (56) when compared to female.
- The chi-square statistic is 2.88. The P value is 0.089. Not significant at $P < 0.05$

SOCIO-ECONOMIC STATUS

RURAL	28 (28%)
URBAN	72 (72%)
TOTAL	100 (100%)

- Among 100 EPTB patients, EPTB is more prevalent in patient (72)72% belongs to urban area.
- The chi-square statistic is 38.72. The P- value is 0.001. significant at $P < 0.05$.

OCCUPATIONAL STATUS:

UNEMPLOYED	34 (34%)
UNSKILLED	16 (16%)
SEMISKILLED	16 (16%)
SKILLED	24 (24%)
CLERICAL	6 (6%)
SEMIPROFESSIONAL	4 (4%)
TOTAL	100(100%)

EDUCATIONAL STATUS:

ILLITERATE	7	7%
PRIMARY	14	14%
MIDDLE	30	30%
HIGH	24	24%
INTER/DIPLOMA	14	11%
GRADUATED	11	11%

MODIFIED KUPPUSWAMY SCALE

CLASS	NUMBER AND PERCENTAGE
UPPER	4 (4%)
UPPER MIDDLE	10 (10%)
LOWER MIDDLE	20 (20%)
UPPER LOWER	60 (60%)
LOWER	6 (6%)

- Socio- economic status was calculated based on the Modified Kuppuswamy scale, among 100 EPTB patients, 60 patients (60%) were belonged to upper lower class and the chi- square statistic is 8. The P value is 0.004. significant at $P < 0.05$. EPTB less prevalent in upper class 4(4%).

CO- MORBIDITIES: 23(23%)

SYSTEMIC HYPERTENSION	8 (34%)
DM	8 (34%)
CVA	2 (8.6%)
THYROID DS	1 (4.3%)
CVA	3 (13%)
CAD	1 (4.3%)

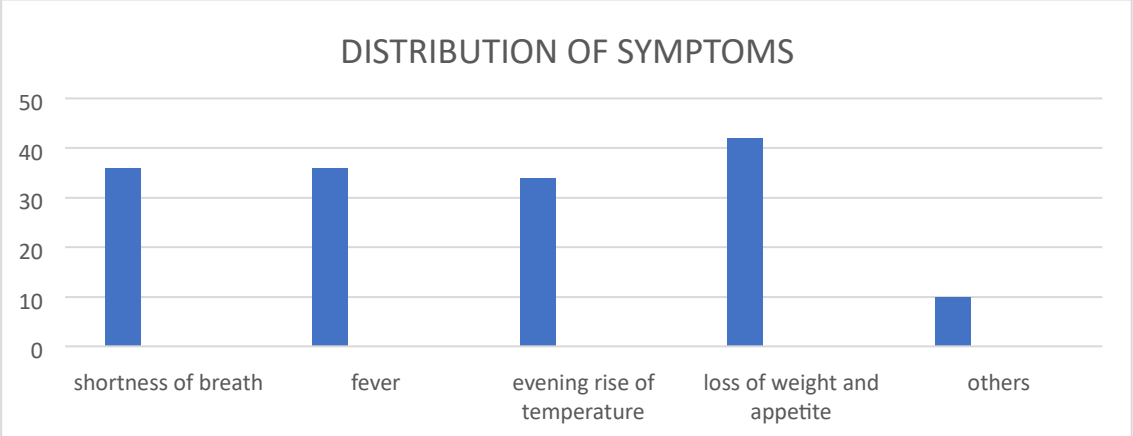
- Among 100 EPTB patients,23 patients (23%) presented with comorbidities. Among 23 patients, 34% (8) were with systemic hypertension and diabetes mellitus each.

IMMUNOCOMPROMISED STATUS TOTAL: 10(10%)

DM	6	60%
RVD	4	40%
ON LONG TERM STEROID THERAPY	0	-
TOTAL	10	100%

- Among 100 EPTB patients, only 10% (10) were with immunocompromised status and among 10 % (10) immunocompromised patients, 6 (60%) were with Diabetes and 4 (40%) with Retro Viral Disease. The chi-square statistic is 0.421. The P value is 0.5 Not significant at $P < 0.05$.

DISTRIBUTION OF SYMPTOMS



Based on the observation study among 100 EPTB patients most common symptom is loss of weight and appetite 42 (42%). Followed by shortness of breath and fever 36 (36%), cough 33 (33%) and 10(10%) other symptoms like abdominal pain, back pain, headache, involuntary movements.

PAST HISTORY OF TUBERCULOSIS – 16(16%)

PTB	12 (75%)
EPTB	4 (25%)
TOTAL	16 (100%)

In 100 EPTB patients 16(16%) of patients had past history of tuberculosis. Among 16% of patients 12(75%) had history of pulmonary tuberculosis and 4(25%) had history of EPTB

ADDICTIONS 52(52%)

ALCOHOLIC	15	29%
EX- ALCOHOLIC	10	19.2%
SMOKER	10	19.2%
EX-SMOKER	12	23.07%
BOTH ALCOHOLIC AND SMOKER	4	7.69%
TOTAL	52	100%

Among 100 EPTB patients 52(52%) having addictions. chi- square statistic is 0.32. The P value is 0.57. not significant at $P < 0.05$

CONTACT HISTORY OF TUBERCULOSIS

RECENT TB CONTACT WITHIN A YEAR 2(2%), PAST TB CONTACT 12(12%)

NUTRITIONAL STATUS

BMI	NUMBER	PERCENTAGE
<18.5 (UNDERWEIGHT)	69	69
18.5-24.9(NORMAL)	24	24
25-29.9(OVERWEIGHT)	6	6
30.0 AND ABOVE(OBESITY)	1	1

Among 100 EPTB patients, 69(69%) were underweight. The chi- square statistic is 28.88. The P value is 0.001. significant at $P < 0.05$

PULMONARY TUBERCULOSIS WITH EXTRAPULMONARY TB: 6(6%): Among 100 EPTB patients, 6 patients (6%) were presented with pulmonary tuberculosis along with EPTB.

DRUG RESISTANT EPTB: 1(1%) (lymph node)

EXTRAPULMONARY TUBERCULOSIS DISTRIBUTION:

TYPE	NUMBER	PERCENTAGE
PLEURAL EFFUSION • Free fluid (52) 85% • Loculated (9) 15% SIDE • Right side (45) 74% • Left side (11) 18% B/L (5) 8%	61	61
LYMPHNODE Cervical LN (15) 75% • Right cervical (11) 73% • Left cervical (1) 7% • B/L cervical (3) 20%	20	20
ABDOMINAL	4	4

PERICARDIAL EFFUSION	2	2
MILIARY TB	2	2
BONE	4	4
CNS	3	3
GENITAL	1	1
OCCULAR	2	2
CUTANEOUS	1	1
TOTAL	100	100%

Among 100 EPTB patients, 61(61%) were presented with pleural effusion followed by cervical lymphadenopathy 20(20%) and least common EPTB diagnosed were cutaneous 1(1%) and genital tuberculosis 1(1%).

DISCUSSION:

AGE: Based on the observational study on 100 EPTB patients, EPTB is more prevalent in the age group between 21- 40 years (49) 49% and its mean is 30.5. Second most prevalent in the age group 41 - 60 years (31) 31%. When compared to study done by M. Rolo et al [5] most common age group is 25-44 years which is similar to our study and mean age is 49.6 In a study by T. Li, X.yan [6] most common age group is 55-64 (20%)

GENDER: EPTB is more prevalent in male gender 56% (56) when compared to female gender. The chi-square statistic is 2.88. The P value is 0.089. Not significant at $P < 0.05$. When compare to study done by M. Rolo et al [5] majority of the population were female 50 (60.02%). In a study by T. Li, X.yan [6] males are affected than female group 52.5%

SOCIO-ECONOMIC STATUS: Socio- economic status was calculated based on the Modified Kuppuswamy scale, among 100 EPTB patients, 60 patients (60%) were belonged to upper lower class and the chi- square statistic is 8. The P value is 0.004. significant at $P < 0.05$. EPTB less prevalent in upper class 4(4%).

COMORBIDITIES: Among 100 EPTB patients,23 patients (23%) presented with comorbidities. Among 23 patients, 34% (8) were with systemic hypertension and diabetes mellitus each. When compare to study done by M. Rolo et al [5] majority of the population were female 50 (60.02%)

IMMUNOCOPROMISED STATUS: Among 100 EPTB patients, only 10% (10) were with immunocompromised status and among 10 % (10) immunocompromised patients, 6 (60%) were with Diabetes and 4 (40%) with Retro Viral Disease. The chi-square statistic is 0.421. The P value is 0.5 Not significant at $P < 0.05$. When compared to study done by M. Rolo et al [5] 14% of immunosuppressed patients presented with EPTB, which is similar to our study. A study by T. Li, X.yan [6] 1.8% of population are in immunocompromised state which is less when compared to our study.

SYMPTOMS: Among 100 EPTB patients the most common symptom is loss of weight and appetite 42 (42%). Followed by shortness of breath and fever 36 (36%), cough 33 (33%).

PAST HISTORY OF TUBERCULOSIS: Among 100 EPTB cases, 16% (16) were presented with past history of Tuberculosis. In the study by M. Rolo et al [5]3.6% of EPTB patients presented with history of Tuberculosis in the past.

CONTACT HISTORY OF TUBERCULOSIS: History of recent tb contact in 100 EPTB patients within a year is 2(2%) and past TB contact12(12%).

NUTRITIONAL STATUS: Among 100 EPTB patients, 69(69%) were underweight. The chi- square statistic is 28.88. The P value is 0.001. significant at $P < 0.05$.

DISTRIBUTION OF EPTB IN ANATOMIC LOCATIONS: Among 100 EPTB patients, 6 patients (6%) were presented with pulmonary tuberculosis along with EPTB. Based on the study on the distribution of EPTB cases, among 100 EPTB patients, 61(61%) were presented with pleural effusion followed by cervical lymphadenopathy 20(20%), Abdominal 4(4%), bone 4(4%), and least common EPTB diagnosed were cutaneous 1(1%) and genital tuberculosis 1(1%).When compared with the study by M Rolo et al [(5),] Lymphatic TB was the most frequent form 50.06%, followed by pleural 24.1%, abdominal and bone 8.4% each, Genito urinary7.2%, Pericardiac 1.2%.In a study by T. Li, X.yan [(6)] EPTB occurred more Tuberculous pleurisy 35%followed by Spinal TB 9.8%, Cervical lymphadenopathy 7.9%.

DRUG SUSCEPTIBILITY: Among 100 EPTB patients, 1 patient (1%) diagnosed Multidrug Resistant Tuberculosis and 0% in the study done by M. Rolo et al [(5)]

CONCLUSION:

Based on the observational study on 100 EPTB patients, EPTB is more prevalent in the age group between **21- 40 years (49) 49**% and its mean is 30.5. EPTB is more prevalent in **male gender 56% (56**) when compared to female gender**, 60 patients (60%) were belonged to upper lower class**, **23 patients (23%) presented with comorbidities**.**10% (10) were with immunocompromised status.** The most common symptom is loss of weight and appetite 42 (42%). History of recent TB contact in 100 EPTB patients within a year is 2(2%) and past TB contact12(12%), 69(69%) were underweight. 6 patients (6%) were presented with pulmonary tuberculosis along with EPTB. Based on the study on the distribution of EPTB cases, among 100 EPTB patients, 61(61%) were presented with pleural effusion followed by cervical lymphadenopathy 20(20%) and least common EPTB diagnosed were cutaneous 1(1%) and genital tuberculosis 1(1%).

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AUTHORS CONTRIBUTION:

Conceptualization: Prof and HOD- Dr. Sravan Kumar Design

of study and supervision of study: Dr. P. Sunitha.

Data collection, research and analysis: Dr. Suganthi. Interpretation

of data, editing: Dr. Baraju Ramana Prakash CONFLICT OF

INTEREST: None.

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