

Prevalence of Pulmonary and Extrapulmonary Tuberculosis Among the Patients Attending Community Based Medical College, Bangladesh (CBMC,B) Hospital

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Abstract

Tuberculosis (TB) is a chronic granulomatous bacterial infection affecting almost all organs of the body and classified as pulmonary TB (PTB) and extrapulmonary TB (EPTB). In our country, tuberculosis is still a havoc in community health. This retrospective study by reviewing case records was conducted in Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh, to estimate the prevalence of pulmonary and extrapulmonary tuberculosis among the patients attending the hospital between January 2022 and June 2024. Data were collected from the patients' records – a total of 67 patients admitted under Surgery, ETN and Medicine units of the hospital. 20(29.85%) of the patients were diagnosed with PTB, while 47(70.15%) had EPTB. Out of 67 patients, 29(43.28%) were male and 38(56.72%) were female; male-female ratio was 1:1.31. Based on occupations, housewives were the highest in numbers (45%), followed by students (18%), farmers (13%), service holders (12%), day labourers (10%) and drivers (2%). Pulmonary TB was more prevalent among the 51-60 years age group (25%), followed by the 71-80 age group (20%). Extrapulmonary TB was more prevalent among the 21-30 years age group (29.8%), followed by the 31-40 years age group (23.4%). A male predominance (65%) was observed compared to female (35%) in PTB; in contrast, a female predominance (66%) was observed compared to male (34%) in EPTB. Among EPTB patients, cervical lymph nodes TB was found in 22(46.8%), followed by breast TB 8(17%), axillary TB 7(14.9%) and abdominal TB 3(6.4%). Tubercular abscess was diagnosed in 7(14.9%) cases. More and more TB awareness campaigns in the community educating people on mode of transmission of TB and self-assessment along with early diagnosis and prompt treatment can improve the situation to a great extent.

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Introduction

Tuberculosis (TB) is a chronic granulomatous bacterial infection that can affect almost every organ of the body excluding only hair and nails. *Mycobacterium tuberculosis* is a rod-shaped aerobic bacillus that causes pulmonary tuberculosis (PTB) and extrapulmonary tuberculosis (EPTB).^{1,2} EPTB is defined as tuberculosis (TB) affecting organs other than the lungs e.g. lymph nodes, meninges, cutaneous tissues, gastro-intestinal tract, pleura, genitourinary tract, bones, joint and spine. Over the centuries many people have died from TB. It still constitutes a major global health problem, and it is estimated that almost one-third of the population is infected world wide.^{1,2} According to World Health Organization (WHO), about 5000

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human deaths occur daily in the world.¹ The proportion of PTB and EPTB varies with respect to geographical, social, ethnic and economic parameters.³ In recent years, it has been observed that a constant reduction of overall number of TB cases is ensuing; however, the reduction of EPTB has not been relevant.⁴⁻⁶ Risk factors for the development of EPTB are mainly age, female gender, concurrent HIV infection and comorbidities such as chronic renal disease, diabetes mellitus or immunosuppression.⁷ The mean age of EPTB patients is higher than pulmonary TB.⁷ Looking at the importance of this communicable disease in community health, we proposed this study to estimate the prevalence of PTB and EPTB among diagnosed TB patients attending Community Based Medical College, Bangladesh (CBMC,B) Hospital, a tertiary level community based hospital situated in Mymensingh district in Bangladesh.

Methods

A total of 67 patients diagnosed with either pulmonary or extrapulmonary tuberculosis were reviewed by retrospective survey of case records. Those patients were admitted under ENT, Surgery, ENT, and Medicine units of Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh or registered under DOTs center of the same hospital. The study period was conducted between January 2022 and June 2024. Data were collected from records and analyzed with MS-Excel software for Windows. The study was approved by the Ethical review Committee of Community Based Medical College, Bangladesh (CBMC,B) Hospital, Mymensingh, Bangladesh.

Results

In this study, a total of 67 tuberculous patients were included. Among them, 29(43.28%) were male and 38(56.72%) were female; male-female ratio was 1:1.31. 20(29.85%) of the patients were diagnosed with PTB, while 47(70.15%) had EPTB (Table-I). Based on their occupations, housewives were the highest in numbers (45%), followed by students (18%), farmers (13%), service holders (12%), day labourers (10%) and drivers (2%) (Fig. 1). Pulmonary TB was more prevalent among the 51-60 years age group (25%), followed by the 71-80 age group (20%). Extrapulmonary TB was more prevalent among the 21-30 years age group (29.8%), followed by the 31-40 years age group (23.4%). Among pulmonary TB patients, a male predominance (65%) was observed compared to female (35%); in contrast, a female predominance (66%) was observed compared to male (34%) among extrapulmonary TB patients (Table-I). Among EPTB, cervical lymph nodes TB was found in 22(46.8%), followed by breast TB 8(17%), axillary TB 7(14.9%) and abdominal TB 3(6.4%). Tubercular abscess was diagnosed in 7(14.9%) cases (Table-I).

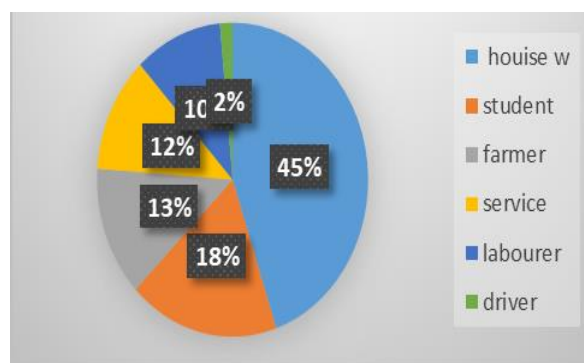


Fig. 1: Pie chart showing occupations of the TB patients

Table-I: Distribution of TB patients by age group and gender

Types of TB	Age group (in years)							Gender		Total
	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Male	Female	
PTB	1	3	2	2	5	3	4	13 (65%)	7 (35%)	20 (29.85%)
EPTB								16 (34%)	31 (66%)	47 (70.15%)
Cervical lymph nodes	3	7	5	4	2	1	-	7	15	22 (46.8%)
Abdominal TB	-	-	-	1	1	1	-	2	1	3 (6.4%)
Tubercular abscess	1	3	1	1	1	-	-	3	4	7 (14.9%)
Breast TB	1	3	2	1	1	-	-	0	8	8 (17.0%)
TB axilla	2	1	3	-	-	-	1	4	3	7 (14.9%)

Discussion

In the present study, age of the patients ranged between 11 and 80 years. The majority of the patients of PTB and EPTB were 17(25.37%) in the 21-30 years age group, which correlates the findings of Hayati *et al.*⁸ studied on a Malaysian population. In our study, the prevalence of EPTB was much more (70.15%) than PTB (29.85%). The prevalence of EPTB is much higher than that of findings from USA.⁹ Cervical lymph nodes TB was found more (46.8%) than other types EPTB, which is possibly due to density of lymph glands and increase lymphatics supply in the cervical region. However, our result is much higher than that of Dandapat *et al.*¹⁰, Karim *et al.*¹¹, Alvarez & McCabe¹², Rieder *et al.*¹³, Alrajhi & Al-Barrak,¹⁴. Overall preponderance of female, as compared to male, does not correlate with the findings of Faiz *et al.*¹¹, which is possibly due to small sample size of male patient and different geographical area in Bangladesh. Among the EPTB patients, Breast TB 3(6.28%), which sounds awful resulted in 21 to 30 years age group, this age group correlate with the findings of the study conducted by Mathur *et al.*¹⁵. Prevalence of TB was found the highest among housewives in our community,

followed by students, farmers, service holders, day labourers and drivers, which is very similar to the results of another study conducted in Chittagong region of Bangladesh by Karim *et al.*¹¹, as because sufferer of TB in the community are possibly from the background of low socio-economic status, low standard of living, malnutrition, low level of immunity, and may be exposure to TB patient.

Conclusion

Our data revealed that the prevalence of EPTB was much higher than that of PTB. Moreover, a male predominance in PTB and a female predominance in EPTB were observed in the community. More and more TB awareness campaigns in the community educating people on mode of transmission of TB and self-assessment along with early diagnosis and prompt treatment can improve the situation to a great extent.

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