

Clinical Profile of Tuberculosis Patients in a Tertiary Care Hospital in Mangalore

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1. Introduction

Tuberculosis is a chronic disease caused by *M. tuberculosis*. Tuberculosis (TB) is one of the major public health threats, competing with the human immunodeficiency virus (HIV) as the cause of death due to infectious diseases worldwide. TB is a poverty-related disease which disproportionately affects the poorest, the most vulnerable and marginalized population groups wherever it occurs. Tuberculosis is chronic infectious disease cause by *M. tuberculosis*. it affects primarily lungs and causes pulmonary tuberculosis (85%).^{1,2} There could be affection of other organ systems called extrapulmonary tuberculosis. Tuberculosis is one of the dreaded diseases which accounts for 9.6 million cases globally as per the WHO Global TB Report 2015. Among these cases India contributes to 2.2 million incidence cases. It has not only high morbidity but also the mortality is high with 0.22 million deaths in India in 2015.

The vast majority have latent TB rather than TB disease. As with HIV, there is an immuno-suppression in diabetes also due to impaired phagocytosis and cellular immunity.³ Some studies have reported that the proportion of TB that is Extra pulmonary tuberculosis is on the rise due to the HIV epidemic.³

TB affecting other sites-known as extra-pulmonary TB is rarely smear-positive; it is generally accepted that the contagious potential of this form is negligible and it has therefore, never been a priority in the campaigns undertaken by national TB control programs. Lymph nodes are the most common site of involvement followed by pleural effusion.³ There is limited knowledge about the host-related factors responsible for admissions of tuberculosis patients especially extra pulmonary TB cases. So, this study was planned to study in-depth about the distribution of host related factors such as age and sex among the admitted TB patients.

2. Objectives of the study

- 1) To study the distribution of host related factors (Age and sex wise distribution)⁽⁴⁾
- 2) To study clinical profile of TB in a tertiary care centre.

3. Materials and Methods

Source of data: Patients admitted in department of pulmonary medicine and attending DOTS centre.

The sample size has $n = \frac{Z\alpha^2 p(1-p)}{e^2}$

$Z\alpha = 1.96$ at 95% Confidence Interval, $p = 17/60 = 28\%$, $e = 10\%$, $n = 75$

Study type: retrospective cross observational study

Study period: 12 months from September 2018 to October 2019

This study will be carried out on patients who are diagnosed with TB. Various epidemiological factors will be assessed and a comparison will be made among variables contributing to the disease burden. The study subjects consisted of all the tuberculosis patients admitted under department of respiratory medicine. The patients on treated on OPD basis were excluded from the study. The data consists of patient profile and confirmed clinical diagnosis. The final diagnosis was taken into consideration as per records. The patients are categorized into pulmonary and extra-pulmonary tuberculosis on the basis of site of lesion. Clinical profile based on age and sex wise distribution of pulmonary and extra pulmonary TB would be compared. The risk of tuberculosis with HIV and Diabetes mellitus would also be compared and analysed⁽⁵⁾.

4. Results

There were 75 patients included in the study. The study consisted of 45(60%) males and 30(40%) females. The ratio of males to females was 1.5 with mean age of 40 years among males and 36.4 years among females. The age distribution of males were from 18 to 72 years and females between 22 to 68 years.

Patient clinical profile

Our study had 52(69.33%) cases with pulmonary tuberculosis and 23(30.66%) cases of extra pulmonary tuberculosis. Extra pulmonary cases included 10(43.47%) with pleural effusion, 4(17.39%) with miliary tuberculosis, 4 (17.39%) with TB lymphadenopathy and 5(21.73%) with empyema.

Profile of pulmonary tuberculosis patients

Among the 52 cases of pulmonary tuberculosis, 30 cases (57.69%) were males and 22 (42.31) were female. The mean age of pulmonary TB cases was 48.6 with standard deviation of 18. There is no correlation between age group and number of pulmonary cases.

Profile of extra-pulmonary tuberculosis patients

Among the 23 cases of Extrapulmonary tuberculosis, 15 cases (65.21%) were males and 8 cases (34.78%) were female. Male predominance was seen. The mean age of admissions among extra pulmonary cases was found to be 41.7 with a standard deviation of 16.6 years.

HIV and Diabetic patient distribution in the study

Among the 75 patients admitted, there were 4 (5.33%) who were serologically positive for HIV antibodies. All these cases were diagnosed previously and were on anti retroviral therapy. Among the 5 HIV positive patients there were 3 (75%) of extrapulmonary cases and 1 (25%) of pulmonary TB case. There were 31 (41.33%) patients who were known cases of diabetes admitted for tuberculosis. Among the diabetic cases there were 6 (19.35%) patients were cases of extra pulmonary TB and 25 (80.64%) were pulmonary tuberculosis.

5. Discussion

There were 75 patients included in the study. The study consisted of 45(60%) males and 30(40%) females The ratio of males: females was 1.5. Male predominance was seen in other studies too with ratios of males: females to be 3.6:1 and 3.1:1 in pulmonary and extrapulmonary cases respectively.⁵

Another study too showed male predominance with ratio of 1.6. This could be due to the fact that men were exposed to outdoor pollution and particulate matter more.^{6,7}

The maximum numbers of patients were in the age group of 31- 40 years. Studies showed the affliction of TB bacilli towards middle age group with poor working and living conditions in lower socioeconomic conditions.

The most common type of extrapulmonary case was pleural effusion 10 (43.47%), followed by empyema 5(21.73%), miliary tuberculosis 4(17.39%) and TB lymphadenopathy 4 (17.39%).

Most studies showed high percentage of lymph node and disseminated TB involvement.⁵⁻⁸ This can be explained by the higher respiratory cases being admitted in out department.

There was correlation between diabetics among patients with pulmonary tuberculosis (80.64%) when compared to other studies.⁵

There was no correlation between HIV and extrapulmonary cases, with presence of HIV increasing the risk of PTB in out study. Other studies showed that HIV was more commonly associated with extrapulmonary cases.^{5,8}

6. Conclusion

We concluded a male predominance among tuberculosis patients in our tertiary center with higher incidence of pulmonary tuberculosis in the age group of 31-40 years. The most common presentation of extra pulmonary tuberculosis was found to be pleural effusion. Diabetics were found to predispose to pulmonary tuberculosis and that HIV may increase the susceptibility of patients to develop tuberculosis.

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