



## STUDY OF GERIATRIC TUBERCULOSIS AT A TERTIARY CARE TEACHING HOSPITAL

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### ABSTRACT

Tuberculosis is emerging as a significant health problem in the geriatric population. The aim of the present study was to study tuberculosis among the elderly in a tertiary care teaching hospital for a period of 3 years. Amongst 400 geriatric patients diagnosed with Tuberculosis, 336 (84%) were male and 64(16%) were females. The most common presenting complaints were cough, fever and loss of appetite and weight. 60% of the cases had pulmonary tuberculosis. 140 (35%) had Diabetes Mellitus as comorbid condition. We need to have a high index of suspicion for the diagnosis of tuberculosis when elderly patients present with non-specific and vague symptoms, non-resolving pulmonary infiltrates on chest x-ray and laboratory abnormalities which remain unexplained. Special attention needs to be given to the monitoring for compliance with treatment, side effects of drugs and drug interactions.

**KEYWORDS :** Geriatric, Tuberculosis

### Introduction

An estimated one-third of the world's population is infected with *Mycobacterium tuberculosis* and 7-8 million people develop TB each year<sup>1</sup>. India has more tuberculosis (TB) cases annually than any other country globally, with an estimated disease prevalence of 256/100,000 population, incidence of 185/100,000 and deaths of 26/100,000. The World Health Organization (WHO) declared TB to be a global health emergency in 1993. The Revised National Tuberculosis Control Programme (RNTCP) was launched in our country to provide free diagnosis and treatment to all TB patients in the public sector, and has successfully treated over 15 million patients in the past decade. Currently under the diagnostic algorithm of RNTCP, any person presenting with a cough of more than two weeks is screened for pulmonary TB (PTB) by one spot and one overnight sputum smear examinations at designated microscopic centres (DMC). Treatment of TB patients is based on directly observed treatment short course (DOTS) strategy. Although infection with human immunodeficiency virus (HIV) is the greatest risk factor for development of TB, the elderly are particularly at risk for development of this disease<sup>2</sup>.

Twenty-six percent of TB cases diagnosed were 65 years and older, but 60.3% of TB cases diagnosed at death were in this age group<sup>3</sup>. It has been suggested that TB in the elderly may differ from TB presenting in younger patients.<sup>3,4</sup> These differences might account for delay in diagnosis, which in turn leads to morbidity and mortality in this age group<sup>5,6</sup>. From India, not much data on the problem of tuberculosis in the elderly are available. Only few publications have presented clinical and radiological characteristics of pulmonary TB in the elderly in our country<sup>7,8</sup>. With changing demography of the population, and increase in the number of elderly, more and more older individuals are being diagnosed as suffering from tuberculosis. However, the problem of geriatric tuberculosis has not received the attention it deserves.

### Materials And Methods

The present study was undertaken to study tuberculosis in the

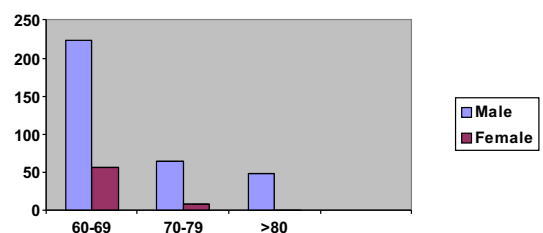
elderly by evaluating the clinical presentations, roentgenographic appearance, bacteriological status, comorbid medical condition, and the difficulties in diagnosis and management. The study was carried out in the department of pulmonary medicine at Sir JJ Hospital for a period of 3 years.

### Results

- Distribution

#### 1. Age And Gender wise Of the 400 patients, 336 (84%) were male and 64(16%) were females.

Age	Male	Female	Total
60-69	224 (66.6%)	56 (87.5%)	
70-79	64 (19.4%)	8 (12.5%)	
>80	48 (14.28%)	0	
<b>Total</b>	<b>336</b>	<b>64</b>	<b>400</b>



#### 2. Presenting Symptoms

Sr No	Presenting Symptoms	No. of cases	%
1	Cough	312	78
2	Fever	320	80
3	Chest pain	64	16
4	Hemoptysis	72	18
5	Breathlessness	200	50
6	Loss of weight and appetite	280	70

**3 Duration of symptoms**

Duration	No. of cases	%
<1 month	168	42
1-2 months	112	28
>3 months	120	30
<b>total</b>	<b>400</b>	<b>100%</b>

**4.Habits**

Habits	No.of cases
<b>Smoking</b>	296
<b>Alcoholism</b>	64
<b>Tobacco chewing</b>	256
<b>All of the above</b>	80

**5. Site of Tuberculosis**

Site of Tuberculosis	No. of cases	%
<b>Pulmonary</b>	240	60
<b>Extra Pulmonary</b>	128	32
<b>Pulmonary+ Extrapulmonary</b>	32	8
<b>Total</b>	<b>400</b>	<b>100%</b>

**6. Co Morbid Conditions**

Co Morbid Conditions	No of patients
<b>Diabetes Mellitus</b>	140(35%)
<b>HIV</b>	30(7.5%)
<b>Malignancy</b>	4 (1%)

**Discussion**

TB is still a major cause of morbidity and mortality worldwide. Recent studies have suggested its incidence in the elderly is increasing<sup>9</sup>. Prior to onset of HIV associated TB, the elderly, newly arrived immigrants and minority population, were the groups whose rate of disease continued to rise<sup>9,10</sup>. The elderly have documented very high rates of disease particularly in nursing homes<sup>11</sup>. From the public health point of view, unrecognized pulmonary TB specially among the elderly is of greater importance, because it often may lead to premature death as well as unrecognized transmission of infection in the community.

Glaziou et al<sup>12</sup> showed that twenty-six percent of cases diagnosed alive were among those of 65 years and older, but 60.3% of TB cases diagnosed at death were in geriatric age group. These data indicate that TB often remains unrecognized and to prevent continuing deaths due to this curable disease a high index of suspicion of TB remains important particularly among the elderly and those with extrapulmonary sites of disease<sup>3</sup>. Delay in diagnosis of TB causing avoidable morbidity and mortality has often been assumed (particularly in the elderly) to be associated with atypical clinical and radiological features<sup>13</sup>.

One feature of TB among the elderly was the frequent association of other comorbid conditions such as malignancy, diabetes mellitus, ischemic heart disease and chronic obstructive pulmonary diseases<sup>14,15</sup>.

Tuberculosis is the prototype of a disease in which cell-mediated immunity plays an important part in controlling the infection. It is well known that age related decline in the cell-mediated immunity influences reactivation of latent infection in the elderly. However, studies conducted on the immunoglobulin status in the geriatric pulmonary tuberculosis patients, have shown no deficiency in their humoral responses<sup>16</sup>. It has been observed that the cytokine production in response to stimulation with Mycobacterium tuberculosis is well preserved in old age<sup>17</sup>. In individual cases, presence of intercurrent illnesses like diabetes mellitus, chronic renal failure, malnutrition, alcohol abuse, certain malignancies and use of immunosuppressive drugs like corticosteroids further impair cell mediated immunity. These can thereby increase the risk of reactivation of the disease. In our study, the elderly group with Tuberculosis had higher occurrence of co morbid conditions (like

Diabetes mellitus, HIV and malignancy) as compared to younger population with Tuberculosis. Concurrent diagnosis of TB and Diabetes Mellitus was seen in 140 patients (35%). HIV infection was detected in 30 (7.5%) of subjects. 4 patients (1%) had malignancy of whom 3 had bronchogenic carcinoma and 1 had renal cell carcinoma.

**Summary**

- The elderly have documented high rates of Tuberculosis
- In our study 84 % were males and 16% were females.
- 60% had pulmonary TB, 32% Extrapulmonary and 8% both Pulmonary and extrapulmonary.
- Tb in elderly was frequently associated with co morbid conditions like DM, HIV, COPD and malignancy.
- Undiagnosed Pulmonary Tuberculosis is of great importance as it leads to increased transmission.

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