A Comparative Study on Elderly Pulmonary Tuberculosis Patients on the Basis of Radiological & Microbiological findings in a Tertiary Care Teaching Hospital

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ABSTRACT

Background: the present study was planned and the aim of the present study was to compare the clinical, radiological and laboratory manifestations of PTB among geriatric patients. The biological changes associated with aging, associated malnutrition and acute or chronic diseases have been reported to disrupt protective barriers, contribute to the expected age-related diminution in cellular immune responses and impair microbial clearance mechanisms against Mycobacterium TB.

Methods: This study analyzed the 100 elderly pulmonary tuberculosis cases. This study was conducted in the Department of TB & Respiratory Diseases, Shri Dev Suman Subharti Medical College, Dehradun.

The duration of study was over a period of two year.

Results: In the present study, 65% people had cough, 92% fever, 42% anorexia, 30% chest pain, 21% haemoptysis, 52% weakness. In the sputum microscopy, 23% negative, 11% scanty, 22% 1+, 25% 2+, 19% 3+ we were found according to grading of RNTCP.

Conclusions: Elderly patients of PTB presented with recognized clinical and radiological features of disease, but a fair number had to be prescribed nonstandard regimens.

Keywords: Microbiological profile, Pulmonary tuberculosis, Alcoholism

INTRODUCTION

Despite major progress in the development of new strategies for diagnosis and treatment, tuberculosis (TB) remains a major challenge for healthcare workers throughout the world. There is a delay in diagnosis and beginning in proper treatment in geriatric patients due to nonspecific and atypical clinical and radiological presentations and as a result, a significant proportion of cases are discovered at autopsy only. The medical fraternity suffers from a deficiency of authentic and published studies on manifestations of TB especially pulmonary tuberculosis (PTB) among geriatric patients from India. Keeping all these things in mind and to overcome all these limitations, the present study was planned and the aim of the present study was to compare the clinical, radiological and laboratory manifestations of PTB among geriatric patients (above the age of 60 years) with young patients (below the age of 60 years).

No or mild signs and symptoms may be commonly seen in PTB, in contrast to the prolonged disease course common in post-primary or adult-type-disease. The biological changes associated with aging, associated malnutrition and acute or chronic diseases have been reported to disrupt protective barriers, contribute to the expected age-related diminution in cellular immune responses and impair microbial clearance mechanisms against Mycobacterium TB. In addition of these, the increased incidence of adverse drug reactions makes the treatment extremely difficult and challenging in geriatric age group patients. Moreover, there is an increased risk of reactivating latent...
TB as well as susceptibility for new TB infection in institutionalized geriatric patients.\(^2\) Thus, in geriatric age group patients, the overall outcome may be complicated by the underlying illnesses, age-related diminution in immune function, the increased frequency of adverse drug reactions, and repeated institutionalization. Atypical clinical manifestations of TB in geriatric patients may result in higher rates of morbidity and mortality. The life expectancy is increasing gradually throughout the world and this trend is especially evident in countries where medical and social services are well developed. In India, the proportion of geriatric population to the total is low as compared to the developed countries. In England, this number is about 12\% against 3.8\% in India.\(^1\) An increased life expectancy from 36.7 years (1951) to 64.6 years (2000) has been reported in India as well.\(^2\) It has been proposed in a couple of studies that TB in geriatric population may differ from younger ones and should be classified as a distinct entity.\(^3,4\) It has been found that the geriatric patients could be treated efficaciously with the currently available antituberculosis drugs though the increased chances of adverse reactions had been evident,\(^3\) which might be a factor responsible for non-compliance. The cell mediated immunity has been reported to be affected adversely by associated diseases such as HIV, lymphomas, diabetes mellitus and ageing.\(^5\)

**METHODS**

**STUDY POPULATION:** This study analyzed the 100 elderly pulmonary tuberculosis cases.

**STUDY AREA:** This study was conducted in the Department of TB & Respiratory Diseases, Shri Dev Suman Subharti Medical College, Dehradun.

**SAMPLE COLLECTION:** The data variables included addictions, symptomatology, microbiology, radiological features and treatment regimens offered. Patients who were found smear positive on fluorescent staining and those diagnosed with PTB on clinical and radiological grounds were included.

**DATA ANALYSIS:** Data were analyzed by using Microsoft excel.

**RESULTS**

In our study, we have included 100 total numbers of cases, out of which 71\% male & 29\% were female. Among all cases 49\% belongs to 60-65 age group followed by other age group which is shown in table 2. In all cases 39\% smokers, 31\% alcoholic we were found. In the present study, 85\% people had cough, 92\% fever, 42\% anorexia, 30\% chest pain, 21\% hemoptysis, 52\% weakness. In the sputum microscopy, 23\% negative, 11\% scanty, 22\% 1+, 25\% 2+, 19\% 3+ we were found according to grading of RNTCP. We were found, different radiological diagnosis which showed in table number 7.

<table>
<thead>
<tr>
<th>GENDER</th>
<th>NUMBER OF CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MALE</td>
<td>71</td>
<td>71%</td>
</tr>
<tr>
<td>FEMALE</td>
<td>29</td>
<td>29%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

**DISCUSSION**

In geriatric age group, PTB often presents with atypical clinical and radiological features.\(^6\) Such presentations have led researchers to propose a discrete entity status for PTB in geriatric age group.\(^7\) These atypical presentations have been reported to delay diagnosis and treatment and finally increased mortality in geriatric patients.\(^8,9\) In geriatric patients, a lower prevalence of fever, sweating, hemoptysis, cavitary disease, and positive purified protein derivative as well as lower levels of blood leukocytes and serum albumin have been found. Furthermore, the geriatric population reported a greater prevalence of dyspnea and concomitant conditions, such as cardiovascular disorders, COPD, diabetes, gastrosotmy history, and malignancies. Just like other studies, the male preponderance have been reported in the present study.\(^10,11\)
Table 7: Distribution of cases according to radiological diagnosis

<table>
<thead>
<tr>
<th>RADIOLOGICAL DIAGNOSIS</th>
<th>NUMBER OF CASES</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFILTRATES</td>
<td>46</td>
<td>46%</td>
</tr>
<tr>
<td>CONSOLIDATION</td>
<td>21</td>
<td>21%</td>
</tr>
<tr>
<td>FIBROCAVITATORY</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>CAVITY</td>
<td>7</td>
<td>7%</td>
</tr>
<tr>
<td>MILIARY</td>
<td>6</td>
<td>6%</td>
</tr>
<tr>
<td>DESTROYED LUNGS</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>Lobar collapse</td>
<td>1</td>
<td>1%</td>
</tr>
<tr>
<td>Bronchiectasis</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

The most common symptoms in this study were cough, shortness of breath and fever. These findings did not support by several other studies where there was more occurrence of symptoms like anorexia, weight loss and less occurrence of fever.12-18 Smoking is related with an increased risk of developing TB. Researchers have found a number of elderly patients being smokers.16 In the present study 39% patients were ever smoker.

Radiologically, it has been found that there was clear upper zone preponderance and infiltrates, consolidation and cavity were the commonest lesions. Though some studies have reported no major radiological differences in elderly PTB patients17,18 yet others have observed the involvement of mid and lower zone.19,20 Majority of patients belonged to rural areas and their income was very low. The lack of follow up of patients due to the scarcity of the center cares is the major limitations of this study.

CONCLUSION

Elderly patients of PTB presented with recognized clinical and radiological features of disease, but a fair number had to be prescribed nonstandard regimens.

REFERENCES