



CLINICO-RADIOLOGICAL PATTERN OF PULMONARY TUBERCULOSIS AMONG ELDERLY AND YOUNG ADULTS IN A TERTIARY CARE CENTER.

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ABSTRACT

Background: Clinical and radiographic manifestation of tuberculosis in elderly patients varies from young adults and not specific, often mistaken with other disease which may cause delay of therapy. For this we conducted study on clinical and radiographic manifestation of pulmonary tuberculosis in elderly patients. **Methods:** This study analyzed 100 pulmonary tuberculosis cases. We divided these patients in 2 groups i.e young adults (aged <60 years) and elderly(aged ≥60 years). This study was conducted in the Department of TB & Respiratory Diseases, RNT Medical College, Udaipur and analyzed by using Microsoft excel. **Result:** We found that this study is dominated by male patients. Chest pain, cough, dyspnoea, hemoptysis were found in-significantly, while expectoration was found significantly higher in young adults ($p < 0.01$). Fever was more in young whereas anorexia was more common in elderly group and in physical signs, icterus was found significantly more in young adults as the p value is <0.05. Radiological bilateral involvement was found more in elderly group compared to adults ($p = 0.67$). Mixed and upper zone in adult patients consist majority patients. **Conclusion:** Elderly patients of PTB presented with recognized clinical and radiological features of disease.

KEYWORDS : Elderly, Tuberculosis, Clinical And Radiographic Features.

INTRODUCTION

Tuberculosis is one of the important communicable diseases worldwide. It is an airborne infectious disease caused by Mycobacterium tuberculosis and is a major cause of morbidity and mortality, particularly in developing countries. About 80 percent of cases are pulmonary tuberculosis; the remainder are variety of extrapulmonary infections. Tuberculosis is a more devastating disease in the elderly and its clinical features may be atypical, nonspecific, or confused with coexisting diseases [1].

India, second-most populous country, accounts 1/4th of TB incidence globally annually. The World Health Organisation (WHO) TB statistics for India for 2018 gives an estimated incidence figure of 2.69 million cases. Mortality rate is 32 per 100,000. [2]

The clinical manifestations of tuberculosis are dependent on a number of factors: age, immune status, co-existing diseases, immunization status to the bacillus Calmette-Guerin (BCG); virulence of the infecting organism and host-microbe interaction. [3]

Tuberculosis involving any site may produce systemic (i.e. not organ specific) symptoms. The frequency of fever ranges from 37 to 80%. Loss of appetite, weight loss, weakness, night sweats, and malaise are also common. [3]

The classical TB symptoms of cough, haemoptysis, fever, drenching night sweats and weight loss may not be as evident in older patients. Less specific symptoms, such as weakness, dyspnoea, anorexia and mental change, are seen more frequently in older patients with TB compared with younger patients. In addition, comorbidities that are more common in older patients may mask the symptoms of TB, e.g. those with chronic cough due to chronic obstructive pulmonary disease (COPD) may have a delayed presentation or diagnosis. However, conversely, they may have closer healthcare contact. [4]

Clinical and radiographic manifestation of tuberculosis in patients varied and not specific and mistaken with other disease and may be cause delay of therapy. [5]

For this reason we compared the clinical and radiographic manifestation of pulmonary tuberculosis in elderly and young patients.

METHODOLOGY

We enrolled 100 adult patients aged >15 years who were treated for newly diagnosed active TB. We prospectively collected data for clinical, radiographic, and bacteriological status of these patients.

Inclusion criteria: Patients who were found smear positive on ZN staining and/OR CBNAAT were included.

Exclusion criteria: Patients without their consent are excluded.

Statistical analysis

Values are expressed as the mean ± standard deviation, or as numbers (percentages) in the text and tables. Differences with regard to numeric values were analyzed using the Student's t test for variables with a normal distribution.

RESULTS:

TABLE 1: Gender distribution

GENDER	SMEAR POSITIVE TB		P VALUE
	YOUNG ADULTS(<60)	ELDERLY(≥60)	
MALE	32(64%)	41(82%)	0.04
FEMALE	18(36%)	9(18%)	0.043

This study is dominated by male patients.

TABLE 2: Clinical features of pulmonary tuberculosis in young adults and elderly patients.

PARAMETERS	SMEAR POSITIVE TB		P VALUE
RESPIRATORY SYMPTOMS	YOUNG ADULTS (<60) (n=50)	ELDERLY (≥60) (n=50)	
Cough	50(100%)	49(98%)	0.31
Expectoration	49(98%)	39(78%)	0.002
Dyspnoea	34(68%)	36(72%)	0.6
Chest pain	9(18%)	15(30%)	0.16
Hemoptysis	14(28%)	8(16%)	0.14
CONSTITUTIONAL SYMPTOMS			
Fever	48(96%)	32(64%)	0.0001
Anorexia	8(16%)	20(40%)	0.0078
Weight loss	20(40%)	13(26%)	0.1385
Weakness	10(20%)	6(12%)	0.2776
PHYSICAL SIGNS			
Pallor	18(36%)	28(54%)	0.0719
Icterus	8(16%)	2(4%)	0.0466
Cyanosis	3(6%)	0(%)	-
Clubbing	4(8%)	9(18%)	0.1391
Edema	8(16%)	4(8%)	0.2207
Lymphadenopathy	2(4%)	0(%)	-

Table 2 compares the clinical characteristics amongst elderly and adults. Chest pain, cough, dyspnoea, blood in sputum were found in-

significantly, while expectoration was found significantly higher in young adults ($p < 0.01$). Fever was significantly more common in young and anorexia in elderly group. In physical sign, icterus was found significantly more in young adults as the p value is < 0.05 .

TABLE 3: Radiographic features of pulmonary tuberculosis in young adults and elderly patients.

CHARACTERISTICS	SMEAR POSITIVE TB		P VALUE
	YOUNG ADULTS (<60) (n=50)	ELDERLY (≥60) (n=50)	
SITE OF LESION			
Bilateral	31 (62%)	33 (66%)	0.67
Unilateral	19 (38%)	17 (34%)	0.67
RADIOLOGICAL EXTENT OF LESION			
Minimal disease	18 (36%)	14 (28%)	0.39
Moderately advanced disease	22 (44%)	30 (60%)	0.11
Far advanced disease	10 (20%)	6 (12%)	0.27
INVOLVEMENT OF ZONE IN CHEST RADIOGRAPH			
Lower/mid zone	10(20%)	14(28%)	0.3514
Mixed zone	21(42%)	16(32%)	0.3028
Upper zone	19(38%)	20(40%)	0.8384
TYPE OF LESION			
Consolidation	11 (22%)	14 (28%)	0.4906
Infiltration	10(20%)	2 (4%)	0.0143
Infiltration with consolidation	10(20%)	12 (24%)	0.631
Infiltration with hilar adenopathy	2 (4%)	0 (0%)	-
Infiltration with cavity	8(16%)	2 (4%)	0.0466
Infiltration with pleural effusion	0 (0%)	2 (4%)	-
Consolidation with cavity	7(14%)	6 (12%)	0.7673
Consolidation with pleural effusion	1 (2%)	4 (8%)	0.1708
Miliary mottling	1 (2%)	0 (0%)	-
Fibrocavitary	0 (0%)	8(16%)	-

Table 3 compares the radiological characteristics of both the groups. Bilateral involvement was found more in elderly group compared to adults ($p = 0.67$). Maximum number of patients had moderately advanced disease. Mixed and upper zone in adult patients consist majority patients. Infiltration with cavity, and Infiltration alone show significant result in young adults.

DISCUSSION

Despite extensive tuberculosis control efforts in the past by WHO and local health departments, the tuberculosis epidemic continues to ravage the developing world; affecting all susceptible individuals including aging adults. Several factors such as increase in the elderly population, immuno-compromised host, patients on steroids, anti-cancer drugs and immunosuppressive drugs and reactivation of TB in elderly [6].

This study is dominated by male patients. A study by Qazi et al [7] found that there are 105 males and 45 females. The age range was 18 to 75 years. The mean age was 49.81 years. 86.7% patients were from rural area while 20 patients were resident of urban areas. These study are backed by Khan et al [8] and Rizvi et al [9].

In present study, expectoration was found significantly higher in adults ($p < 0.01$). In constitutional symptoms fever was more common in young and anorexia in elderly group. In physical signs, icterus was found significantly more in young as the p value is < 0.05 . Pandita et al [10] found that elderly tuberculosis patients had significantly higher occurrence of co-morbidities like hypertension, COPD, malignancy and diabetes. They also found that symptoms like cough, hemoptysis, febrile sense and night sweats occurred significantly more in young adults; whereas anorexia, weight loss, chest pain and dyspnoea were more frequent in elderly patients. These results correspond to those of Alvarez et al, Umeki et al, Vanden Brande [11-13].

In this study, Consolidation was most common type of lesion found in both groups. Infiltration and Infiltration with cavity was significantly more in young patients.

Pandita et al [10] found that the higher frequency of hemoptysis in young patients was probably related to the higher frequency of lung cavitations in them. This was in agreement with other studies by Mori T and Hoheisel G [14,15].

Mixed and upper zone in adult patients consist majority patients. Our findings are consistent with those of Perez and Chan et al in this respect [16,17].

Bilateral involvement was found more in elderly group compared to adults ($p = 0.67$). Qazi et al [7] found that Out of 150 films, in 84 right lung was involved, in left lung about 39 and bilateral lesion found in 27 films. In 75 films, x-rays showed non homogeneous opacity, cavity in 31 and homogeneous shadows in 22 and multiple shadows in 22 films.

In this study we differentiated all patients in 2 group i.e patients whose age is < 60 and other is ≥ 60 years and found comparable results with study done by Hussein et al [18]. While this study is backed by Nirmal Chand et al [19], Mori et al [20] and Waitt et al [21].

CONCLUSION

In conclusion, atypical presentation with advanced disease and high bacterial load at time of diagnosis is commonly seen in the elderly. Mostly between 35-75 years of age fever, cough, expectoration and loss of weight were the most common presenting symptoms. Consolidation, infiltration are common findings. Hence high index of suspicion is crucial to early diagnosis and management, thereby reducing morbidity and mortality amongst the patients and curtailing the spread of tuberculosis in the community.

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