Original Articles

Differences in Clinical Presentation of Pulmonary Tuberculosis in association with Age

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Abstract

Objective: To study the differences in presentation of pulmonary tuberculosis in young adult and elderly patients.

Design: A prospective study was conducted between December 1999 to May 2000, which included all the patients presenting with pulmonary tuberculosis at the Department of Thoracic Medicine, Jinnah Postgraduate Medical Centre (JPMC), Karachi.

Patients and Methods: There were 67 young adult (mean age 30.63 yrs) and 36 elderly patients (mean age 65.92 yrs) with pulmonary tuberculosis. The difference in presentation of two groups were analyzed for statistical difference. Chi-square test was used for testing difference of percentage. The students t-test was used for testing difference of mean. The $P < 0.05$ level of significance was adopted.

Results: The elderly patients were more likely to have dyspnoea (73% vs 23.9% P<0.001) and non-specific symptoms (62.2% vs 17.9% P<0.001) but less haemoptysis (21.6% vs 46.3% P<0.01). The chest radiograph in elderly patients more commonly had extensive bilateral infiltration (32.4% vs 14.9% P<0.03) and lower zone infiltration (37.8% vs 3% P<0.001).

Conclusion: The result of our study suggests that elderly patients with pulmonary tuberculosis were more likely to present with dyspnoea, non-specific symptoms and atypical radiographic appearance (JPMA 53:321;2003).

Introduction

Tuberculosis is one of the important communicable diseases world wide.[1] The incidence of tuberculosis has been increasing globally, almost 2 billion people (one third of the world's population) around the globe are infected with M. tuberculosis.[2] It is the world's biggest killer by a single pathogen causing the death of three million people every year, which is equal to approximately 6% of all the deaths worldwide.[3] Some studies have shown that the diagnosis of TB in elderly is frequently delayed or found at autopsy.[4-11] However others suggested that the pattern of TB in the elderly is so characteristic, that it should be given a separate classification.[12] In this prospective study we tried to evaluate, whether there is any difference in presentation of young and elderly patients with pulmonary tuberculosis, as the incidence of tuberculosis in our population is very high.

Patients and Methods

This study was conducted between Dec, 1999 to May, 2000 in newly diagnosed patients of pulmonary tuberculosis, at the Department of Thoracic Medicine, JPMC, Karachi. Demographic data, presenting symptoms, radiographic appearance, weight of the patients, AFB smear either sputum of gastric lavage (those who failed to produce sputum) were collected. The patients were divided into two groups (1) younger (<60 years) and elderly (>60 years) age groups.

The difference in presentation of the two groups were analyzed for statistical differences, chi-square test was used for testing difference of percentage and student's t-test was used for testing difference of means. The $P<0.05$ level of significance was adopted.

Results

Demographic data for the patients are presented in Table 1, consisting of 67 young and 36 elderly patients with pulmonary tuberculosis. The diagnosis was made by positive AFB smear. The mean age in the younger group was 30.63 years and in the elderly group 65.92 years. The mean body weight of elderly patients was greater than that of younger patients (47.83kg vs 45.69kg P not significant). There were greater number of smokers amongst elderly patients (38.88% vs 23.9, P not significant) (Table 1).

The presenting symptoms are listed in table-2 patients with younger age group were more likely to have night sweats (56.7% vs 8.1% P<0.001), fever (98.3% vs 83.8% P<0.01). haemoptysis (46.3% vs 21.6% P<0.01) and weight loss (74.6% vs 51.4% P<0.02). However the elderly patients were more likely to have dyspnoea (73.0% vs 23.9% P<0.001), chest pain (40.5% vs 14.9% P<0.002) and non-specific symptoms (62.2% vs 17.91% P<0.001) such as dizziness, body aches and abdominal pain. The symptoms of cough, sputum, anorexia and malaise were not significantly different between the two groups (Table 2).

Table 1. Demographic data of patients with pulmonary tuberculosis.

Patient characteristics	Young (n=67)	Elderly (n=36)	P value
Age			
Mean	30.63	65.92	P<0.001
Range	18-55	61-80	
Sex			
Male	35 (54%)	20 (52.2%)	NS P>0.92
Female	32 (43.2%)	16 (47.8%)	NS P>0.70
Body weight (kg.)	45.69	47.83	NS P>0.25
Sputum AFB smear	64	33	NS P>0.69
Gastric lavage AFB smear	3	3	NS P>0.69
Smoker	16 (23.9%)	14 (38.88%)	NS P>0.11

NS = not significant

Table 2. Presenting symptoms in patients with pulmonary tuberculosis.

Presenting symptoms	Young (n=67)	Elderly (n=36)	P value
Night sweats	38 (56.7%)	3 (8.1%)	P<0.001
Cough	66 (98.3%)	34 (94.4%)	P>0.56*
Sputum	57 (85.1%)	37 (73.0%)	P>0.11*
Fever	66 (98.3%)	31 (83.8%)	P <0.01
Haemoptysis	31 (46.3%)	8 (21.6%)	P<0.01
Dyspnoea	16 (23.9%)	27 (73.0%)	P<0.001
Weight loss	50 (74.5%)	19 (52.4%)	P<0.02
Anorexia	49 (73.11%)	23 (62.2%)	P>0.21*
Malaise	23 (34.3%)	11 (29.7%)	P>0.69*
Chest pain	10 (14.9%)	15 (40.5%)	P<0.002
Non-specific	12 (17.91%)	23 (62.2%)	P<0.001

* Not-significant

Radiographic finding are given in Table 3. The patients in the younger age group had a greater frequency of upper zone infiltration only (31.3% vs 5.4% P<0.002). The as elderly age group patients tended to have more extensive lesion of both lungs (32.4% vs 14.9% P<0.03). The lower zone infiltration was also seen more frequently in elderly group patients (37.8% vs 3% P<0.001) (Table 3).

Associated medical problems are listed in Table 4.

Table 3. Major radiographic finding in patients with pulmonary tuberculosis.

Presenting symptoms	Young (n=67)	Elderly (n=36)	P value
Upper zone infiltration only	21 (31.3%)	2 (5.4%)	P<0.002
Middle zone infiltration only	7 (10.4%)	-	-
Lower zone infiltration only	2 (3%)	14 (37.8%)	P<0.001
Wide spread infiltration of one lung	21 (31.3%)	5 (13.5%)	P<0.05
Wide spread infiltration of both lung	10 (14.9%)	12 (32.4%)	P<0.03
Cavitation	12 (17.9%)	2 (5.4%)	P>0.11*
Miliary shadowing	2 (3%)	2 (5.4%)	P>0.80*

*NS = not significant

Table 4. Associated medical problems in patients with pulmonary tuberculosis.

Medical problems	Young (n=67)	Elderly (n=36)	P value
COPD	2 (3%)	9 (24.3%)	P<0.001
Asthma	-	2 (5.4%)	-
Pneumonia	3 (4.5%)	2 (5.4%)	P>0.81*
Malignancy	-	-	-
Bronchiectasis	1 (1.5%)	-	-
Diabetes mellitus	6 (9%)	4 (10.8%)	P>0.82*
Cirrhosis	1 (1.5%)	-	-
Peptic ulcer	-	2 (5.4%)	-
Hypertension	1 (1.5%)	6 (16.2%)	P<0.01
Psychiatric disorder	2 (3%)	-	-
Others	1 (1.5%)	4 (10.8%)	P>0.08*
Total	17 (23.37%)	29 (80.55%)	P<0.001

* Not-significant

They were more commonly seen in elderly patients (80.55% vs 25.37% P<0.001).

Discussion

The diagnosis of tuberculosis in elderly is frequently made only at autopsy.[4-11] The delay in diagnosis has often been attributed to atypical clinical and radiological presentation.[13] Many studies have compared the clinical presentation of pulmonary tuberculosis in young adults versus the elderly.[8,16-20]

Morris went on to state that elderly patients with pulmonary tuberculosis had a different disease.[12]

In the present study we have found that non-specific symptoms are more commonly present in elderly patients. They may therefore be treated for other medical illness initially. There may be a considerable delay before the diagnosis of TB is finally made.

Dyspnoea is more common in patients in the elderly age group, and could be due to the higher incidence of smoking, COPD and more extensive lesions.

Haemoptysis is more common in patients with younger age group and is probably related to a higher incidence of cavitation.

Cough was a common presenting symptom in both groups. Although many elderly patients have other associated medical problems which may give rise to cough, such as chronic bronchitis, emphysema, asthma and malignancy, this symptom should be evaluated seriously particularly if it prolonged and not responding to treatment.

With respect to the difference in radiological findings between the two groups, Some studies found there was no difference.[16] Teale C, et al suggested that in the elderly there is a shift toward less common presentations such as lower zone and miliary shadowing.[21] In our study lower zone infiltration only, occurred more frequents in elderly patients.

The findings of our study are consistent with most of international studies .

Conclusion

Our study showed that elderly patients with pulmonary tuberculosis were more likely to present with dyspnoea and non-specific symptoms. Similarly radiographic appearance were atypical viz lower zone infiltration and bilateral extensive lesions were more common in this age group.

On the other hand younger patients presented with classical symptoms of TB, and also had greater frequency of upper zone infiltration on chest radiograph. A knowledge of these differences should help make an earlier diagnosis of pulmonary TB, especially in the elderly in whom it may be often delayed.

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