Original Article

Study of clinical profile of pulmonary tuberculosis at tertiary health care center

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Abstract

Introduction: India has more new tuberculosis (TB) cases annually than any other country.The annual incidence of sputum smear-positive cases is estimated to be 168/100,000 persons. **Aims and Objectives:** To Study of clinical profile of pulmonary tuberculosis at tertiary health care center. **Material and Method:** This was a cross-sectional study carried out at Department of TB and Chest of tertiary health care center during the One year period from January 2015 to January 2016. In the one year period who were admitted to ward of TB and chest were included into study. During one year, total 107 patients as per DOT's Category of treatment; Category I were 78 and Category II were 29. The Chi-square test was used for statistical analysis. **Result:** The majority of the Patients were in the age group of 40-50- 26.17followed by >60 - 19.63, 30-40- 17.76 and in 50-60- 15.89. The majority of the Patients were Male i.e. 60.75 % followed by 39.25 were Female. In Majority of the Patients Pulmonary TB was Presenting feature i.e. 75.70% followed by Extrapulmonary i.e. 16.82%. The most common presenting features of extrapulmonary TB were Pleural effusion in 65.38%. The majority of the patients were diagnosed by Sputum microscopy in 37.38% followed by CXR in 21.50 %. The majority of the patients were New i.e. 76.64% followed by Treatment after default were 9.35%, Relapse in 6.54%, Transfer in 4.67% and Treatment failure in 2.80%. The majority of the Patients were on Category I i.e. 72.90 % followed by 27.10 in Category II. Associated co-morbidity found in 35.89% of Category I patients while 58.62 % Category II were associated with co-morbidity. So, associated co-morbidity was significantly higher in Category II patients. (χ^2 =4.479, df=1, P<0.0343). **Conclusion:** It can be concluded from our study that TB was most common in males, Pulmonary TB was most common and majority of the patients can be diagnosed by Sputum microscopy and Associated co-morbidities were found significantly higher in Category II patients.

Keywords: Tuberculosis, ADA (Adenosine Deaminase Enzyme), DOTs therapy.

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INTRODUCTION

India has more new tuberculosis (TB) cases annually than any other country.[1] The annual incidence of sputum smear-positive cases is estimated to be 168/100,000 persons. Every day in India, >5000 develop TB and >1000 die from TB.[2] TB kills more women than all causes of maternal mortality combined.[3]. It is estimated that an untreated smear-positive patient may infect >10 contacts annually.[4] Delay in diagnosis and treatment leads to more advanced disease, more complications, higher mortality,[5–7] and has resulted in community outbreaks.[8] RNTCP is the largest and the fastest expanding programme throughout the world. Treatment success rates have tripled from 25% to 86% and TB death rates have been cut 7-fold from 29% to 4% in comparison to the pre-RNTCP era. Tuberculosis remains a worldwide public health problem despite the fact that the causative organism was discovered more than 100 years ago. It is a disease of poverty affecting mostly young adults in their most productive years. The vast majority of TB deaths are in the developing world[9]. Age is an important determinant of the risk of diseases after infection. The risk may increase in the elderly, possibly because of waning immunity and co morbidity[10].

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MATERIAL AND METHOD

This was a cross-sectional study carried out at Department of TB and Chest of tertiary health care center during the One year period from January 2015 to January 2016. In the one year period who were admitted to ward of TB and chest were included into study. During one year, total 107 patients as per DOT's Category of treatment; Category I were 78 and Category II were 29. All details of the patients like Age, Sex, Diagnostic tool, Type (Pulmonary or Extrapulmonary), Type of patients e.g. New or Default, Relapse etc. were noted. Also the Comorbid conditions like Diabetes, COPD, Heart disease, Liver Disease, Kidney Disease Immunocompromised Disease were also noted. The Chi-square test was used for statistical analysis.

RESULT

Table 1: Distribution of the Patients as per the Age

Age Group	No.	Percentage (%)
0-10	3	2.80
10-20	7	6.54
20-30	12	11.21
30-40	19	17.76
40-50	28	26.17
50-60	17	15.89
>60	21	19.63
Total	**107**	**100.00**

The majority of the Patients were in the age group of 40-50- 26.17followed by >60 - 19.63, 30-40- 17.76 and in 50-60- 15.89.

Table 2: Distribution of the patients as per the sex

Sex	No.	Percentage (%)
Male	65	60.75
Female	42	39.25
Total	**107**	**100**

The majority of the Patients were Male i.e. 60.75 % followed by 39.25 were Female.

Table 3: Distribution of the Patients as per the Presenting features

Presenting feature	No	Percentage (%)
Pulmonary	81	75.70
Extrapulmonary	18	16.82
Pulmonary + Extrapulmonary	8	7.48
Type of extrapulmonary TB (n=26) *		
Pleural effusion	17	65.38
Hydropneumothorax	9	34.62
Caries spine	7	26.92
Cold abscess	5	19.23
Pyopneumothorax	3	11.54
Abdominal TB	2	7.69

(*Total is more than 26 as more than one presenting feature found in the patients)

In Majority of the Patients Pulmonary TB was Presenting feature i.e. 75.70% followed by Extrapulmonary i.e. 16.82% and Pulmonary + Extrapulmonary was 7.48%. The most common presenting features of extrapulmonary TB were Pleural effusion in 65.38% followed by Hydropneumothorax in 34.62 ; Caries spine in 26.92%, Cold abscess in 19.23% Pyo-pneumothorax in 11.54, Abdominal TB in 7.69%.

Table 4: Distribution of the Patients as per the Diagnostic tool

Diagnosed by	(n=107)	Percentage (%)
Sputum microscopy	40	37.38
CXR	23	21.50
ADA	18	16.82
CXR +ADA	10	9.35
FNAC + MRI	9	8.41
CT +FNAC + MRI	3	2.80
CXR + FNAC	4	3.74
Total	**107**	**100**

The majority of the patients were diagnosed by Sputum microscopy in 37.38% followed by CXR in 21.50 %, ADA in 16.82%, CXR +ADA in 9.35%, FNAC + MRI-8.41%, CT +FNAC + MRI in 2.80%, CXR + FNAC in 3.74%.

Table 5: Distribution of the Patients as per the Type

Types of patients	No.	Percentage (%)
New	82	76.64
Treatment after default	10	9.35
Relapse	7	6.54
Transfer in	5	4.67
Treatment failure	3	2.80
Total	**107**	**100**

The majority of the patients were New i.e. 76.64% followed by Treatment after default were 9.35%, Relapse in 6.54%, Transfer in4.67% and Treatment failure in 2.80%.

Table 6: Distribution of the Patients as per the Category of treatment

Category	No.	Percentage (%)
Category I	78	72.90
IP	68	63.55
CP	10	9.35
Category II	29	27.10
IP	15	14.02
CP	14	13.08

The majority of the Patients were on Category I i.e. 72.90 % followed by 27.10 in Category II.

Table 7: Distribution of the patients as per theCategory of treatment and Associated co-morbidity

Category	*Associated co-morbidity		Total (%)
	Present (%)	Absent (%)	
Category I	28 (35.89)	50 (64.10)	78 (100)
Category II	17 (58.62)	12 (41.37)	29 (100)
Total	**45 (42.05)**	**62 (57.94)**	**107 (100)**

(χ^2 =4.479, df=1, P<0.0343. *Any condition like Diabetes, COPD, Heart disease, Liver Disease, Kidney Disease, Immunocompromised Disease were classified as associated co-morbidity, Percentage in bracket are horizontal percentages)

From above Table, associated co-morbidity found in 35.89% of Category I patients while 58.62 % Category II were associated with co-morbidity. So, associated co-morbidity was significantly higher in Category II patients. (χ^2 =4.479, df=1, P<0.0343).

DISCUSSION

In our study we found that The majority of the Patients were in the age group of >60 - 19.63 followed by 40-50- 26.17; 30-40- 17.76 and in 50-60- 15.89. this is in confirmation with Christian D *et al* [11]. The majority of the Patients were Male i.e. 60.75 % followed by 39.25 were Female. This is in confirmation with[12]. In Majority of the Patients Pulmonary TB was Presenting feature i.e. 75.70% followed by Extrapulmonary i.e. 16.82% and Pulmonary + Extrapulmonary was 7.48%. The most common presenting features of extrapulmonary TB were Pleural effusion in 65.38% followed by Hydropneumothorax in 34.62 ; Caries spine in 26.92%, Cold abscess in 19.23% Pyo-pneumothorax in 11.54, Abdominal TB in 7.69%. this was similar to Prakasha SR *et al*. they found pleura (28%), lymph node (24.8%), CNS (12.5%), bones and joints (12.3%), abdomen (9.7%), and others (12.7%) which included genitourinary, skin, pericardium and breast lump.[13] Similar observations were found by Mavila R *et al*. where extrapulmonary manifestation were lymph node (29.4%), gastrointestinal (24%), pleura (23.5%), skeletal (7.5%) and others.[13] The majority of the patients were New i.e. 76.64% followed by Treatment after default were 9.35%, Relapse in 6.54%, Transfer in 4.67% and Treatment failure in 2.80%. The majority of the patients were New i.e. 76.64% followed by Treatment after default were 9.35%, Relapse in 6.54%, Transfer in 4.67% and Treatment failure in 2.80%. This was similar to ShilpaKarir[14]*et al*. The majority of the patients were diagnosed by Sputum microscopy in 37.38% followed by CXR in 21.50 %, ADA in 16.82%, CXR +ADA in 9.35%, FNAC + MRI- 8.41%, CT +FNAC + MRI in 2.80%, CXR + FNAC in 3.74%. similar to ShilpaKarir[14]*et al*. Associated co-morbidity found in 35.89% of Category I patients while 58.62 % Category II were associated with co-morbidity. So, associated co-morbidity was significantly higher in Category II patients. (χ^2 =4.479, df=1, P<0.0343) this was similar to ShilpaKarir **et al* they found Diabetes, HIV were the co-morbidities associated with the poor compliance to treatment. The comorbidities are affects quality of life which is already compromised by Tuberculosis and decreases the immunity, response to treatment and compliance and adherence to DOTs therapy so with the treatment of Tuberculosis the co-morbid conditions should be controlled.

CONCLUSION

It can be concluded from our study that TB was most common in males, Pulmonary TB was most common and majority of the patients can be diagnosed by Sputum microscopy and Associated co-morbidities were found significantly higher in Category II patients.

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