

## Clinico Radiological Presentation of Tuberculosis in Diabetes Patients

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**Abstract:** The objective of the present study is to study the the clinical, radiological presentation of Tuberculosis in Diabetes patients. The prospective observational study conducted in 50 patients with Diabetes and Tuberculosis between August 2013 to August 2015 at SVS Medical College, Mahabubnagar. Our study included 50 patients with confirmed cases of TB with Diabetes Mellitus. Male to female ratio was 2.1:1. The common age group being 40-60 years (56%) The most common symptom is fever (100%) followed by cough (76%). Most common site is lower zones of lungs (38%). Most common presentation is cavitary lesions (385). Tuberculosis is lower lobe predominant in diabetic patients with predominant cavity formation.

**Keywords:** Tuberculosis, Diabetes Mellitus, Lower zone, Cavitary Lesions.

### INTRODUCTION

Tuberculosis and diabetes mellitus are two serious public health problems globally, which not only often coexists also has serious implications on each other .Diabetes mellitus (DM) is a serious lifelong disease that has been increasing in prevalence year after year. In 2012, it caused 1.5 million deaths worldwide. The global prevalence has increased from 4.7% to 8.5% since the 1980s, and in 2014 it was estimated that 422 million of adults were living with DM. Worldwide, there are an estimated 9.6 million new patients with active TB annually and of them, 1 million have both TB and DM [1,2]. Studies have noted that the risk of developing TB was 11 to 18 times greater in Diabetics than in normal population[3]

Present study is conducted to describe the clinico radiological presentation in patients with Diabetes and TB.

### METHODOLOGY

#### Study setting

The present study was carried out at department of pulmonary medicine in SVS Medical College , Mahabubnagar.

#### DATA COLLECTION

This retrospective study was performed using a database with 50 patients of TB with Diabetes mellitus who had been diagnosed at our hospital, during August 2013- August 2015. Only patients with a confirmed TB and Diabetes were included in this study. For confirmation all the patients underwent sputum examination and patients who were negative are subjected to fiber-optic bronchoscopy. And all the

patients Fasting and post prandial blood sugars were checked.

### STATISTICAL ANALYSIS

Data was analysed by statistical package for social sciences (SPSS) Version 16.0. Numerical data was summarised by mean  $\pm$  standard deviation for continuous normal data and median  $\pm$  Inter-Quartile Range for continuous non normal data/ordinal data. Categorical data was summarised by count and percentages. The association between categorical variables was done by Chi square test. All the P values less than 0.05 were considered as statistically significant.

### RESULTS

This study included 50 patients with microbiologically proven Tuberculosis. The series included 34 male (68%) and 16 female (32%) patients. TB and Diabetes is most commonly seen together in

patients between 40 to 60 yrs of age 28 cases (56%). Age and sex distribution of these patients is shown in [Table-1].

**Table-1: Demographic distribution**

AGE DISTRIBUTION	
< 40 YRS	14 (28%)
40-60 YRS	28 (56%)
>60 YRS	8 (16%)
SEX DISTRIBUTION	
MALES	34 (68%)
FEMALES	16 (32%)

Almost all the patients are presented with fever (100%) followed by cough with expectoration 34 cases (76%) followed by haemoptysis 22 cases. (44%)(Table 2). Radiologically lower zone is most commonly involved 27 cases (54%) followed by mid and lower zones 19 cases (38%). Among the radiological presentations Cavitory lesions are more common 19 case(38%) followed by opacities 12 cases(24%)(Table 3)

**Table-2: Clinical distribution**

SYMPTOM	NO OF PATIENTS
fever	50 (100%)
Weight loss	12 (24%)
Cough	38 (76%)
Chest pain	9 (18%)
breathlessness	14 (28%)
haemoptysis	22 (44%)

**Table-3: Radiological distribution**

LOCATION OF THE LESION	
Upperzone	11 (22%)
Midzone	13 (26%)
Lowerzone	27 (54%)
Mid and Lower zone	19 (38%)
TYPE OF LESION	
Cavitory lesion	19 (38%)
Opacity	12 (24%)
Pleural effusion	5 (10%)

## DISCUSSION

Most of our study belonged to the patients of age group between 40-60 years, with a male predominance (M: F ratio 2.1:1) Similar observation has been reported by other studies. Morris and Others also in their study observed that male population outnumbered the females [4]. Tripathy and Kar reported that 78% of their patients were males [5]. The high incidence of disease in males is possibly due to the fact that both tuberculosis and diabetes are more common in males. Another reason could be attributed to the increase in the smoking and occupational exposure to dust among males, and also the number of male patients getting admitted to the hospital are more than females

Qayyum *et al.* in their study of diabetic group in Pakistan between Julys to December 2004, shown found bilateral lung field involvement in 44.44%, and in lower lobe it was 33.33% [6]. Wilcke JT *et al.* and Kubam C *et al* proved lower lobe involvement as a predominant find in the patients [7, 8]. Tiyas Sen *et al.* in their study of diabetic group in Mumbai in 2009 found more TB-DM patients developed cavitation (82% versus. 59%) more often in the lower lung fields (29% versus. 3%). Cavities were more often multiple in the TB-DM patients (25%) [9]. Almost all the patients are presented with fever (100%) followed by cough with expectoration 34 cases (68%) Radiologically lower zone is most commonly involved 27 cases (54%) followed by mid and lower zones 19 cases(38%). (Table3) Among the radiological presentations Cavitory lesions are more common 19 case(38%) followed by opacities 12 cases(24%)(Table4).

## CONCLUSION

Tuberculosis is lower lobe predominant in diabetic patients with predominant cavity formation.

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