

## Clinical Profile of Patients Presenting With Recurrent Pulmonary Tuberculosis

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### Abstract:

**Background:** People successfully completing treatment for tuberculosis are at elevated risk for recurrent disease, due to relapse or reinfection. Identifying the risk factors for recurrent tuberculosis may help target post tuberculosis screening and care. The objective of this study was to investigate risk factors for recurrent episodes of tuberculosis.

### Materials and Method:

All the patients with recurrent pulmonary tuberculosis who are fulfilling the inclusion criteria are taken into the study. After written informed consent was obtained, a well designed questionnaire was used to collect the data of the recruited patient retrospectively. The questionnaire includes sociodemographic characteristics such as age, gender, height, weight, comorbidities such as diabetes, and systemic disease especially immunosuppressive states such as HIV, Substance abuse such as smoking and alcoholic.

### Results:

The risk factors like male gender, age group between 25-44 years, underweight, former smoker and ex-alcoholic, Diabetic mellitus and cavity in their chest x ray are associated with increased risk of recurrent pulmonary tuberculosis.

### Conclusion:

Recurrent pulmonary TB remains a problem for successfully treated patients with pulmonary TB in, especially those with risk factors of being male, age 25-44 years, underweight, former smoker, past history of alcohol intake, diabetic mellitus, presence of a pulmonary cavity. So special consideration should be given for those individuals with these risk factors.

### Key Words:

Recurrent pulmonary tuberculosis, gender, age group, diabetes mellitus.

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## I. Introduction:

“Recurrent TB” patients are defined as patients who have previously been treated for TB, were declared cured or treatment completed at the end of their most recent course of treatment, and are now diagnosed with a recurrent episode of TB.

Patient who have completed treatment for tuberculosis (TB) are at increased risk for recurrent TB, due to reactivation or reinfection. Individuals diagnosed with recurrent TB, suffer high mortality and less likely to complete treatment than those with first episode of TB. There are number of host factors that can influence the incidence of recurrent TB infection. The risk factors associated with recurrent infections are Drug resistance, smoking, HIV infection with low CD4 lymphocyte count, Chronic lung disease, substance abuse and cavitary pulmonary diseases. These factors may increase the recurrence risk because there will be more likely for some small number of mycobacteria to persist beyond the treatment or may be associated with incompetence of immunity which makes the individuals at a greater risk of reinfection.

## II. Materials And Methods:

- **Study design:** Cross sectional observational study
- **Study period:** August 2020-July 2021
- **Study setting:** Government Hospital For Chest and Communicable Diseases, Visakhapatnam.

- **Study Population:** Patients presenting with recurrent pulmonary tuberculosis (fulfilling inclusion criteria) to Government Hospital For Chest and Communicable Diseases, Visakhapatnam.
- **Sample size:** A total of 100 patients are included into the study
- **Sampling technique:** Non-probability convenient sampling technique.

**INCLUSION CRITERIA:**

- Patient aged > 18 years
- Patient giving valid consent
- Patient who is sputum positive in CBNAAT with history of treatment cure for PTB.

**EXCLUSION CRITERIA:**

- Patient aged < 18 years of age
- Patient with Extrapulmonary tuberculosis

**III. Procedure Methodology:**

All the patients with recurrent pulmonary tuberculosis who are fulfilling the inclusion criteria are taken into the study. After written informed consent was obtained, a well designed questionnaire was used to collect the data of the recruited patient retrospectively. The questionnaire includes sociodemographic characteristics such as age, gender, height, weight, comorbidities such as diabetes, and systemic disease especially immunosuppressive states such as HIV, Substance abuse such as smoking and alcoholic.

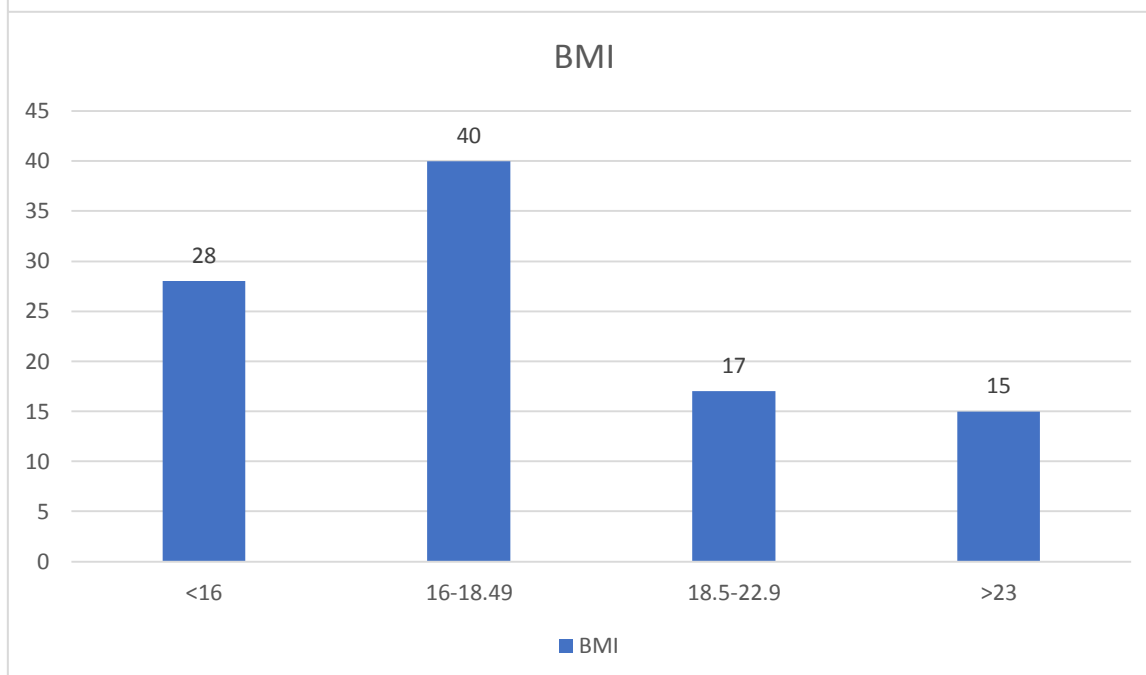
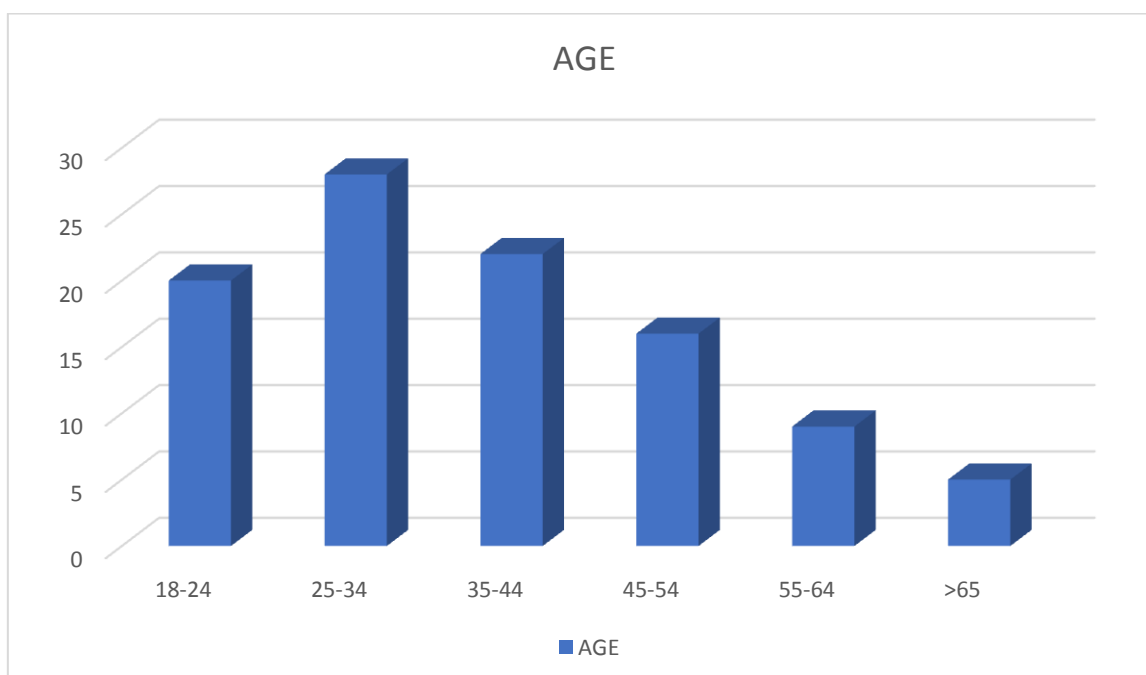
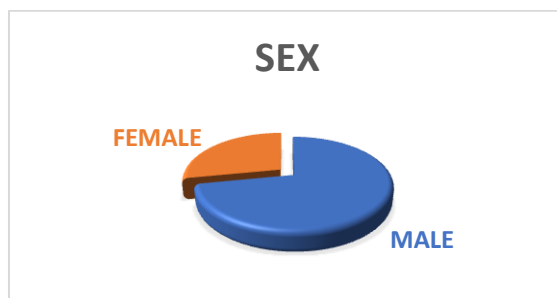
Physiological examination is done and radiological findings are noted. Routine investigations like sputum AFB, Sputum CBNAAT was done and noted.

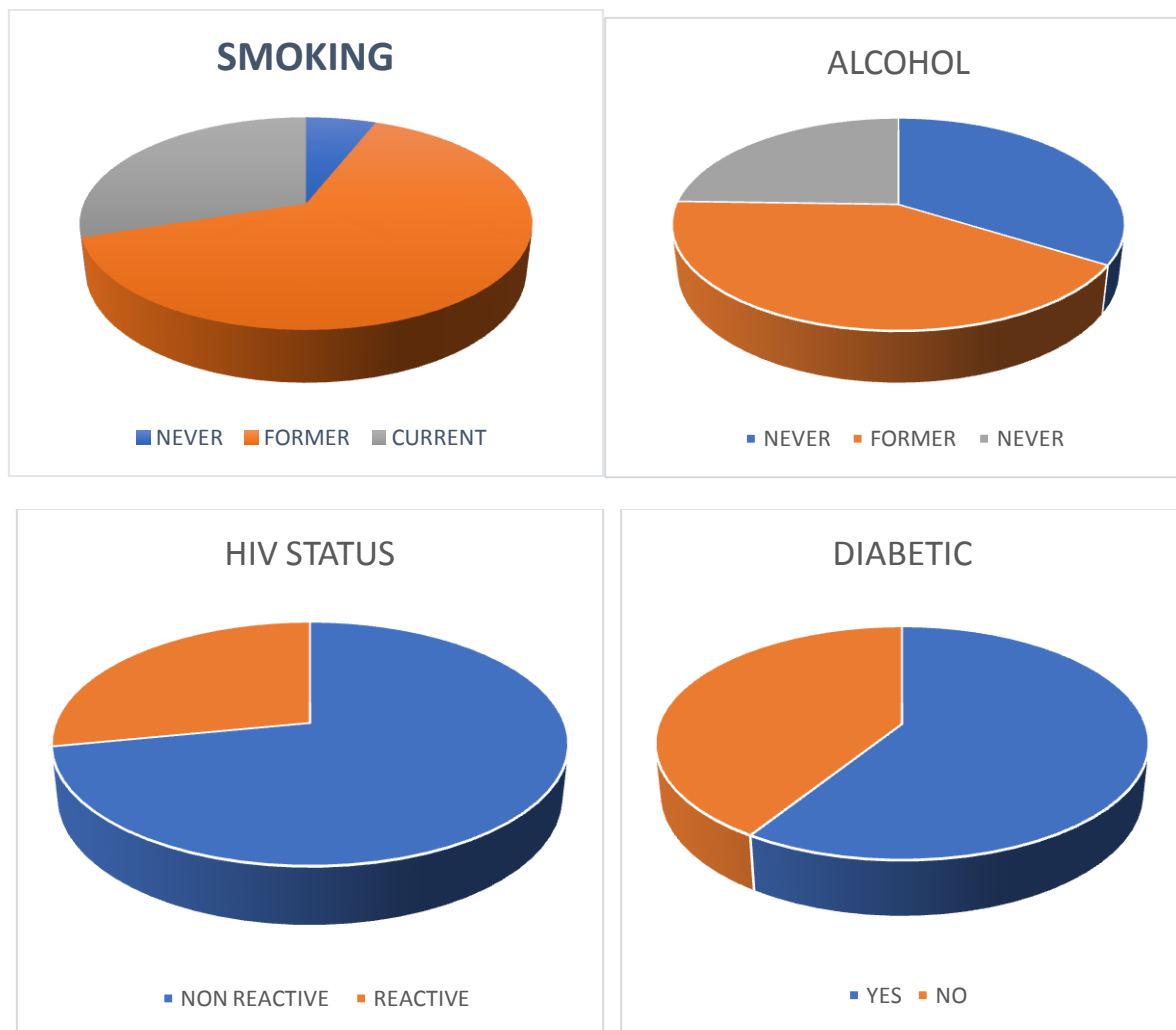
**IV. Result:**

SEX	
Male	62
Female	38
AGE	
18-24	20
25-34	28
35-44	22
45-54	16
55-64	9
>65	5
BMI	
<16	28
16-18.49	40
18.5-22.9	17
>23	15
SMOKING	
Current smoker	30
Former smoker	44
Never smoker	26
ALCOHOL USE	
No	8
Current	32
Ex alcoholic	60
HIV STATUS	
Reactive	38
Non-Reactive	62
DIABETES MELLITUS	
Yes	59
No	41
DRUG SUSCEPTIBILITY	
Susceptibility	73
Resistance	27
H	14
R	4
HR	9
RADIOLOGICAL APPEARANCE	
Cavities	68
Bilateral infiltrates	32

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Months of TB recurrence	
0-3 months	37
4-6 months	26
7-12 months	21
>12 months	16





## V. Discussion

In this study, being Male is more likely to be associated with TB recurrence. It can be due to pulmonary tuberculosis is known to be common in males compared to females. Nearly 50% of patients with recurrent TB are under the age group of 25-44 years and BMI less than 18.49 is a risk factor for recurrent PTB according to this study. Individuals who is former smoker and past history of alcohol consumption are at increased risk. HIV co infection was not associated with the risk of recurrence, according to this study. This could be due to raising rate of antiretroviral therapy in our settings, But Diabetic mellitus has a main role in recurrence of tuberculosis. Most of the patients with pulmonary tuberculosis in our study is sensitive to rifampicin and had cavity in their chest x ray.

Thus the risk factors like male gender, age group between 25-44 years, underweight, former smoker and alcoholic, Diabetic mellitus with cavity in their chest x ray are associated with increased risk of recurrent pulmonary tuberculosis.

## VI. Conclusion

In conclusion, recurrent pulmonary TB remains a problem for successfully treated patients with pulmonary TB in, especially those with risk factors of being male, age 25-44 years, underweight, former smoker, past history of alcohol intake, diabetic mellitus, presence of a pulmonary cavity. Rapid diagnosis and treatment remain the mainstay of TB control, being able to recognize those patients who are at the highest risk of recurrence might lead to better integration with associations such as mental health, substance abuse, and optimal management of Diabetic mellitus.

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