



A Study to Assess the Factors Leading To Lost To Follow Up in Pulmonary Tuberculosis

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Abstract: Tuberculosis is one of the major public health challenges. Under National Tuberculosis Elimination Programme (NTEP), India has targeted to end TB by 2025. Directly observed treatment short course (DOTs) is the backbone of India's TB elimination program, with treatment compliance as an effective strategy. One of the challenges is quitting the treatment before completion of treatment course. These patients are called as Lost to Follow Up (LTFU). According to the India TB report 2022, the treatment outcome of the patients notified in 2020, 2.9% (51138) were LTFU, and treatment failure 0.5% (9202). LTFU results from several factors such as poor access to health services, socioeconomic status, and beliefs and practices prevalent in society. Illiteracy, poverty, long duration of treatment, many medicines, work-related issues, smoking & alcoholism, etc. are also other factors responsible for LTFU.

Index Terms – Pulmonary Tuberculosis, Lost to Follow Up

1. INTRODUCTION

Tuberculosis (TB) is a chronic infectious disease; its persistent mortality and morbidity burden remains one of the major public health challenges in India. (1)

Though the Revised National Tuberculosis Control Programme (RNTCP), now National Tuberculosis Elimination Programme (NTEP), has been successfully implemented in India for more than two decades, TB is still a major challenge in the country, especially in rural and remotes areas. Directly observed treatment short course (DOTs) is the backbone of India's TB elimination program, with treatment compliance as an effective strategy. (2)

New case

“A TB patient who has never taken ATT or has taken ATT for less than one month”.

Lost to follow up

“A patient previously treated for TB for one month or more and treatment was interrupted for one month or more continuously in their most recent course of treatment and subsequently found microbiologically confirmed TB case”. (3)

In India, in 2020 total no. of (2135830) cases were reported, 10.3% (220104) of total cases reported were previously Treated patients. According to the India TB report 2022, the treatment outcome of the patients notified in 2020, 2.9% (51138) were LTFU, and treatment failure 0.5%. (9202).(4)

LTFU results from several factors such as poor access to health services, socioeconomic status, and beliefs and practices prevalent in society. Illiteracy, poverty, long duration of treatment, many medicines, work-related issues, smoking & alcoholism, etc. are also other factors responsible for LTFU. (2)

Patients with LTFU (previously referred to as defaulted) often have poorer treatment outcomes, higher risk of relapse, and are more prone to developing drug resistance. Improving treatment completion and reducing LTFU is a key step toward TB control in India. (5)

2. MATERIALS AND METHODS

The study was conducted at Department of Pulmonary Medicine, Guru Gobind Singh Medical College and Hospital, Faridkot, India. It is a tertiary care teaching hospital. Cross sectional study was conducted from Jan 2022 to Jan 2023. Study was approved by the college ethic committee. LTFU patients reporting to the department were included in the study. Inclusion and Exclusion criteria was used to select the patients. Informed written consent was taken from all the participants. Detailed history was taken regarding their previous ATT treatment (duration, intolerance, regularity), social factors, any addiction, migration, literacy levels; to evaluate the reason for interruption of their treatment.

3.OBSERVATIONS AND RESULTS

Table no. 1: Age-wise distribution of study participants

| AGE GROUP | LOST TO FOLLOW UP | |
|--------------|-------------------|-------------|
| | NO. | %AGE |
| <30 YEARS | 10 | 34.4% |
| 31-40 YEARS | 6 | 20.7% |
| 41-50 YEARS | 7 | 24.2% |
| 51-60 YEARS | 2 | 6.9% |
| 61-70 YEARS | 2 | 6.9% |
| >70 YEARS | 2 | 6.9% |
| TOTAL | 29 | 100% |

We observed that a maximum number of the patients who presented to us belonged to age group of <30 years, 34.4% LTFU. The youngest of the patient was 15 years old and the oldest was of age 80 years.

Table no. 2: Gender-wise distribution of study participants

| GENDER | LOST TO FOLLOW UP | |
|--------------|-------------------|-------------|
| | NO. | %AGE |
| MALE | 18 | 62% |
| FEMALE | 11 | 38% |
| TOTAL | 29 | 100% |

More males were seen in LTFU groups (62%), while females were 38%.

Table no. 3: Distribution of study participants based on literacy

| LITERACY STATUS | LOSS TO FOLLOW UP | |
|-----------------|-------------------|-------------|
| | NO. | %AGE |
| LITERATE | 9 | 31% |
| ILLITERATE | 20 | 69% |
| TOTAL | 29 | 100% |

We observed that higher rates of illiteracy were among LTFU (69%) category who quit their treatment.

Table no. 4: Distribution of study participants based on history of addiction

| HISTORY OF ADDICTION | LOSS TO FOLLOW UP | |
|----------------------|-------------------|-------------|
| | NO. | %AGE |
| PRESENT | 17 | 58.6% |
| ABSENT | 12 | 41.4% |
| TOTAL | 29 | 100% |

We observed that the majority (58.6%) of patients in the LTFU category had a history of Addiction (smoking/ alcohol/ IV drug abuse), who were unable to adhere to ATT.

Table no. 5: Distribution of study participants based on history of migration

| HISTORY OF MIGRATION | LOSS TO FOLLOW UP | |
|----------------------|-------------------|-------------|
| | NO. | %AGE |
| PRESENT | 4 | 13.8% |
| ABSENT | 25 | 86.2 |
| TOTAL | 29 | 100% |

We observed that history of migration during their last ATT intake was one of the factors responsible for quitting their treatment in LTFU patients (13.8%).

Table no. 6: Distribution of study participants based on immunocompromised status

| IMMUNOCOMPROMISED STATUS | LOSS TO FOLLOW UP | |
|--------------------------|-------------------|-------------|
| | NO. | %AGE |
| IMMUNOCOMPETENT | 18 | 62.1% |
| DIABETES MELLITUS | 5 | 17.2% |
| HIV-AIDS | 5 | 17.2% |
| PREGNANCY | 0 | 0% |
| STEROID USE | 1 | 3.5% |
| TOTAL | 29 | 100% |

We observed that in LTFU 11/29 patients (37.9%) were immunocompromised which included DM (17.2%), HIV-AIDS(17.2%), steroid use(3.5%), and immunocompetent patients (62.1%).

Table no. 7: Distribution of study participants based on past tolerance to anti tubercular therapy

| TOLERANCE TO ATT | LOSS TO FOLLOW UP | |
|------------------|-------------------|-------------|
| | NO. | %AGE |
| TOLERATED | 12 | 41.3% |
| DID NOT TOLERATE | 17 | 58.7% |
| TOTAL | 29 | 100% |

We observed that 58.7% of the patients of LTFU did not tolerate ATT during their last treatment.

4.DISCUSSION

Our study was conducted on LTFU patients of pulmonary tuberculosis who left their treatment after one month or more and interrupted their treatment for more than one month. In our study, 29% of the patients were LTFU, who quit their medication. In a study conducted by Akessa et al., 13.5% of the patients were lost to follow-up category. (6). In our study we observed that male gender predominance was present with 62%, while females were 38%. Maximum number of the patients were below the age of 30 years (34.4%). Akessa et al. found that median age for LTFU cases was 24 years with male predominance (67.3%) (6). Mishra et al. found that LTFU was seen in the age group of 22-70 years with male predominance. (2). When we assessed the patients on the basis of literacy, their lifestyle, occupation, and their social uptake of the disease, we observed that more of the patients in the LTFU cannot read and write (illiterate 69%) and had a social stigma regarding the disease. In another study by Mishra et al., LTFU patients were illiterate (18/22). They would migrate to other districts and states for their living (2). It was also observed that intolerance to ATT drugs was another cause of decreased compliance towards ATT. In our study, 58.7% of the patients who quit taking their medication (LTFU) complained of intolerance along with nausea and vomiting during their course of treatment. A study by Mishra et al., observed that adverse effects like nausea and vomiting (intolerance to ATT) made patients stop taking medication and thus lost to follow-up. They also concluded that for 14/22 patients, the problem was money and they quit their job to take medication. (2)

In our study, we observed that addiction of smoking, alcoholism, I.V. drug abuse was one of the leading causes of abandonment of treatment among LTFU category (58.6%). Similar results were seen by Mishra et al., that alcohol addiction is another reason for lost to follow-up (7). Leung et al. and Yen et al. in their respective studies concluded that smoking plays a negative role in the treatment of

Pulmonary TB and thus leads to an increased incidence of recurrence of the disease (8,9). Santha et al., in their study also concluded that there is high chance of an alcoholic patient to default the treatment (10).

5.CONCLUSION

We have observed that the treatment phase under NTEP, accounts for a high rate of unfavorable treatment outcomes. The findings of this analysis prompt the implementation of additional local strategies, which include Strengthening of NTEP, community-based treatment observers, dialogues with NGOs, and Public-Private Partnerships.

- Increase treatment adherence among Addicts, Labourers and other special groups.
- Improve counseling during the treatment phase.
- Control the trends in rates and risk factors for unfavorable treatment outcomes.

Thereby,

END TB by 2025.

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