



Original Research Article

PROFILE OF DRUG-RESISTANT TUBERCULOSIS (DR-TB) PATIENTS ATTENDING A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: Setting: Drug-resistant Tuberculosis (DR-TB) is a growing health concern not only in urban areas but even in peripheral parts of our country. Hence we studied the profile of DR-TB patients from a tertiary care hospital. **Objectives:** To study the profile of DR-TB patients attending a tertiary care hospital.

Materials and Methods: Design: Medical records of DR-TB TB patients were extracted and analysed.

Results: A total of 89 DR-TB patients were diagnosed and started treatment. Out of total patients, male patients were 51 (57.30%) and females were 38 (42.70%). Adults were 82 (92.13%) and 07 (07.87%) patients were in paediatric age group. Pulmonary involvement was seen in 80 (89.89%) and 09 (10.11%) patients were having extra-pulmonary DR-TB. H-mono resistant TB was seen in 31 (34.83%) patients and MDR-TB or RR-TB was seen in 58 (65.17%) patients. A total of 11 (12.36%) patients had T2DM and 06 (06.74%) patients had HIV co-infection. During the study period 03 patients developed recurrence of DR-TB. Out of total, 70 (78.65%) patients were declared cured, 06 (06.74%) were lost to follow up, 02 (02.24%) were declared failure and 11 (12.36%) patients died.

Conclusion: DR-TB is a preventable and curable disease. DR-TB including MDR-TB, though initially thought to have poorer outcomes, with newer effective drugs the rate of cure has been much increased and the duration of treatment has also been reduced.

Keywords: Drug-resistant tuberculosis (DR-TB), Multi-drug-resistant tuberculosis (MDR-TB), Rifampicin-resistant tuberculosis (RR-TB).

INTRODUCTION

Globally, TB is the world's leading cause of death from a single infectious agent and among the top 10 causes of death. TB was also both the leading killer of people with HIV in 2024 and a major cause of deaths related to antimicrobial resistance. In 2024, an estimated 10.7 million people fell ill with TB worldwide, including 5.8 million men, 3.7 million women and 1.2 million children. TB is present in all countries and age groups. Multi-drug-

resistant TB (MDR-TB) remains a public health crisis and a health security threat^[1].

TB is a bacterial disease caused by the bacterium *Mycobacterium tuberculosis*^[2]. TB disease has been haunting mankind since ancient times. It's a preventable and curable disease. Drug-resistant tuberculosis (DR-TB) occurs when these bacteria become resistant to the drugs used to treat TB. This means that the drug can no longer kill the TB bacteria. DR-TB is a man made phenomenon. The reasons for the development of resistance include interrupted or inadequate administration of first-line Anti-TB treatment (ATT), poor control of

infection and easy transmissibility of the drug resistant organism^[3,4].

Aim of the study: To study the profile of DR-TB patients attending a tertiary care hospital.

MATERIALS AND METHODS

Study Design: Retrospective observational study.

Study Settings: Patients diagnosed with DR-TB and started treatment at SRTR GMC Ambajogai, Maharashtra.

Study Population: Diagnosed (Microbiologically confirmed) cases of DR-TB.

Study Duration: Year 2019 to 2025.

Sample Size: 89 Patients

Inclusion Criteria

- Microbiologically confirmed cases of DR-TB.

Exclusion Criteria

- Those who didn't give consent.

RESULTS

A total of 89 DR-TB patients were diagnosed and started treatment during the study duration i.e. from year 2019 till 2025 at our institute. Out of total patients, male patients were 51 (57.30%) and females were 38 (42.70%). Adults were 82 (92.13%) and 07 (07.87%) patients were in paediatric age group. As far as organ involvement was seen, pulmonary involvement was seen in 80 (89.89%) and 09 (10.11%) patients were having extra-pulmonary DR-TB Fig. No. 01. Isoniazid mono resistant TB (H-mono resistant TB) was seen in 31 (34.83%) patients and MDR-TB or RR-TB was seen in 58 (65.17%) patients. None had Extensively Drug Resistant Tuberculosis (XDR-TB). Type-2 Diabetes mellitus (T2DM) was seen as a comorbidity in 11 (12.36%) patients and 06 (06.74%) patients were People with HIV. During the study period 03 patients developed recurrence of DR-TB. Out of total, 70 (78.65%) patients completed DR-TB regimes and were declared cured, 06 (06.74%) were lost to follow up, 02 (02.24%) were declared failure and 11 (12.36%) patients died Fig.No. 02.

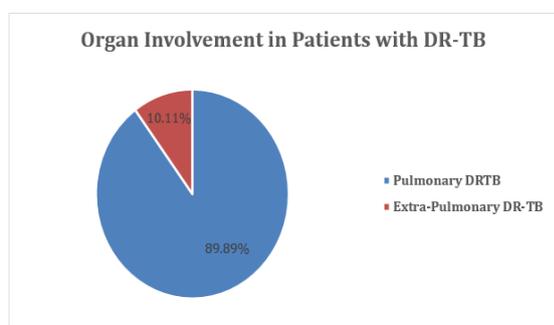


Fig. 01: Organ involvement in patients with DR-TB

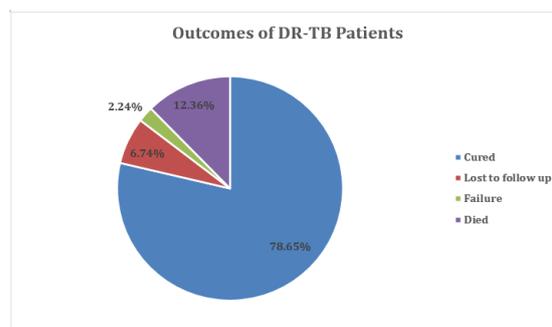


Fig. 02: Outcomes of DR-TB Patients

DISCUSSION

MDR-TB, is defined as resistance to Isoniazid and Rifampicin, the two most effective drugs of standard therapy i.e. first line ATT while XDR-TB is defined as a TB caused by Mycobacterium tuberculosis strains that fulfil the definition of MDR/Rifampicin-resistant-TB (RR-TB) and that are also resistant to any fluoroquinolone and at least one additional Group A drug (Levofloxacin or Moxifloxacin, Bedaquiline and Linezolid)^[5].

The estimates of MDR/RR-TB in India have been reduced by 20% from 1.40 lakh in 2015 to 1.10 lakh in 2023, with an estimated proportion of new TB cases with MDR/RR-TB at 2.5% and of previously treated TB cases with MDR/RR-TB at 13% as per the WHO Global TB Report 2024^[6,7].

India reported a 73% treatment success rate in patients enrolled on longer oral M/XDR-TB regimens during 2021. This has given better chances of survival to patients with MDR-TB^[8]. We reported 78.65% cure rate, slightly higher than the national cure rate. We found that pulmonary MDR-TB (89.89%) was far more common than extra-pulmonary TB. Similar reports were seen in the study by Reena Raveendran et al^[9].

Despite effective treatment, TB remains a significant health threat. DR-TB is a growing health issue not only in urban areas but even in peripheral parts of our country and need to be diagnosed as early as possible amongst the presumptive TB cases. National Tuberculosis Elimination Programme (NTEP) offers Universal Drug Susceptibility Testing (UDST) within 15 days of diagnosis of a TB Case thus picking up early resistance and thereby minimizing time for starting appropriate treatment^[10].

CONCLUSION

DR-TB is a preventable and curable disease. DR-TB including MDR-TB, though initially thought to have poorer outcomes, with newer effective drugs the rate of cure has been much increased and the duration of treatment has also been reduced. Timely diagnosis and prompt treatment ensures complete cure.

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