



## TO STUDY THE TREATMENT OUTCOMES IN PATIENTS OF PULMONARY TUBERCULOSIS UNDER NTEP AT A TERTIARY CARE CENTRE

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### ABSTRACT

**Background:** Tuberculosis is the most prevalent infectious disease in India. DOTS treatment under NTEP (Previously RNTCP) has been the mainstay to control and reduce its burden on our country. In 2017, daily treatment regimen was introduced by DOTS replacing the alternate day regimen. In January 2020, the name RNTCP (Revised National Tuberculosis Control Program) was replaced by NTEP (National Tuberculosis Elimination Program) in line with the vision to eliminate Tuberculosis by 2025. **Objective:** To study the treatment outcomes in patients of Pulmonary Tuberculosis under NTEP at Saraswati Medical College & Hospital, Unnao. **Materials and methods:** From 1st August 2021 to 31st July 2022, i.e. over a period of 1 year, 104 patients of Pulmonary Tuberculosis, >8 years of age attending Saraswati Medical College & Hospital, Unnao were enrolled into our study and kept on follow-up to evaluate their final outcomes. They were evaluated in terms of cured, treatment failure, loss to follow up, default and deaths according to NTEP guidelines. **Results:** In our study, out of 104 patients, 92 patients (88.5%) were cured, 5 patients (4.8%) failed the treatment, 2 patients (1.9%) were lost to follow up, 1 patient (0.96%) was transferred out, 1 patient (0.96%) was shifted to private treatment and 3 patients (2.9%) died during course of treatment. **Conclusion:** This study showed that treatment under NTEP is very effective for treatment of Tuberculosis. Also the most commonly affected age group is the working age group which increases manifold the economic burden on the country. Thus, the strengthening of the NTEP and to follow the guidelines suggested are of utmost importance if we wish to uproot the disease from our country and achieve the goal of TB elimination.

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### INTRODUCTION

Tuberculosis is a chronic specific infectious disease caused by Mycobacterium Tuberculosis. Approximately 1.9 billion people amounting to one third of the world population are estimated to be infected with Tuberculosis bacilli. The estimated global average risk is 1% which is equivalent to 38 million new infections per year among the previously uninfected population. Developing countries account for 95% of global Tuberculosis cases and 98% deaths due to Tuberculosis<sup>1</sup>.

It is estimated that annually over 0.5 million die due to Tuberculosis (17% of global deaths)<sup>1</sup>. As per the Global TB report 2017, the estimated incidence of TB in India was approximately 2800000 accounting for about a quarter of the world's TB cases<sup>2</sup>. In 2017 India re-estimated its national figures of the burden of Tuberculosis incorporating information from a wider range of sources. Each year over 2.2 million people develop Tuberculosis in India<sup>3</sup>. The total population suffering from active disease in India is 14 million of which 3 to 3.5 million are sputum positive (25%) with a prevalence rate of 4.84/1000<sup>4</sup>.

The National Tuberculosis Control Programme (NTCP) was launched in 1962. The important deficiencies were: inadequate supply of drugs, over-reliance on clinical and radiological diagnosis, poor case-holding, low quality of sputum microscopy, more emphasis on case detection rather than on cure, non-adherence to recommended treatment regimens by the general practitioners (GPs), and a poor reporting and monitoring system<sup>5</sup>.

In order to overcome the shortcomings in the NTCP, the programme was revised jointly by the WHO and the Government of India, in 1992. The Revised National Tuberculosis Programme (RNTCP) has been implemented in phases since 1993, guided by WHO and supported by World Bank<sup>5</sup>.

### MATERIALS AND METHODS

From 1st August 2021 to 31st July 2022, i.e. over a period of 1 year, 104 patients of Pulmonary Tuberculosis, >8 years of age attending Saraswati Medical College & Hospital, Unnao were enrolled into our study and kept on follow-up to evaluate their final outcomes. They were evaluated in terms

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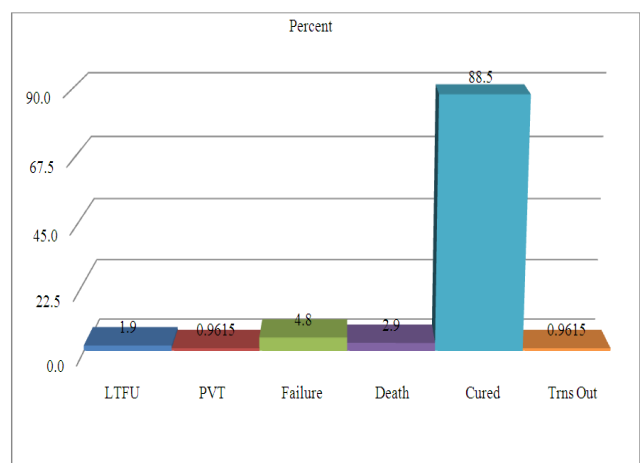
of cured, treatment failure, loss to follow up, default, shifted to private treatment or transferred out, and deaths according to NTEP guidelines. Patients with Extra Pulmonary Tuberculosis and PLHA (People living with HIV & AIDS) were excluded from the study.

Our study aimed at finding the outcomes of daily regimen introduced by RNTCP now continuing under NTEP. Patients were followed up via telephonic calls and were also advised for regular visits to OPD of department of Pulmonary Medicine, Saraswati Medical College & Hospital, Unnao.

## OBSERVATIONS AND RESULTS

The final chart of patient outcomes is as under

| OUTCOME                            | Frequency | Percent |
|------------------------------------|-----------|---------|
| Lost to follow up (LTFU)           | 2         | 1.9     |
| Transferred out (Trns out)         | 1         | 0.96    |
| Treatment failure (Failure)        | 5         | 4.8     |
| Death                              | 3         | 2.9     |
| Cured                              | 92        | 88.5    |
| Shifted to private treatment (PVT) | 1         | 0.96    |
| Total                              | 104       | 100.0   |



## DISCUSSION

In 2017 there were an estimated 10 million TB cases and 1.3 million deaths worldwide. In India, more than 6000 people develop TB everyday and 2 deaths occur because of TB every 5 minutes. The RNTCP didn't focus on impact of burden of illness and its therapy on patient's psychological, emotional and social wellbeing<sup>6</sup>.

RNTCP had provision of follow-up of cured patients till 2 yrs at 6, 12, 18 and 24 months after cure which is rarely done and therefore we hardly know what happens to these patients once they are declared as cured<sup>7</sup>.

Various studies have been done to evaluate the outcomes of Patients on anti tubercular treatment. A study was conducted by Jyothi Conjeevaram *et al*<sup>1</sup> in 2012 and they noticed that out of 165 patients, 95(57.6%) were cured, 51(30.9%) completed treatment but were not declared as cured, 5(3.03%) defaulted treatment, 11(6.6%) died during the course of treatment and 3(1.8%) failed the treatment. Our study showed much better cure rates and little default.

A study was conducted by Vandana Bhoi *et al*<sup>8</sup> in 2014 and found that out of 807 patients, 208 patients (25.8%) were cured, 466 (58.4%) patients completed their treatment, 32 patients (3.8%) defaulted the treatment, 71 patients (8.8%) died, treatment failed in 16 patients(2%) and 14

patients(1.7%) were Lost to follow up/transferred out. In our study, however the cure rate was much higher and the default rate was little.

V D Karanjekar *et al*<sup>9</sup> in their study in 2014 noticed that out of 125 patients, 44(35.2%) were declared as cured, 50(40%) were declared as treatment completed, 25(20%) defaulted the treatment, 4(3.2%) died and 2(1.6%) were transferred out. Again our study scored much higher cure rates.

Another study was conducted by Aradhana Sharma *et al*<sup>10</sup> in 2016 on 130 patients and they noticed that 109 patients (83.8%) were cured, 2 patients completed treatment but could not be declared as cured, 2 patients defaulted, 2 patients failed the treatment, 14 patients (10.7%) died, while treatment was modified in 1 patient. Almost similar results were found in our study with respect to cure rate.

A study conducted by Kiran G Piparva<sup>4</sup> in 2017 noticed that out of 1340 patients, 1210(90.26%) were declared as cured, 31(2.31%) defaulted the treatment, 20(1.49%) failed the treatment, 24(1.79%) were transferred out while 55(4.10%) patients died during the course of the treatment. Our study also showed similar cure rates with very little death rates.

As evident in the discussion, of late the introduction of NTEP has given a fresh impetus to the quest of TB elimination. Due to increased efforts of stakeholders, the cure rates have been boosted further under NTEP. Similar incessant efforts are needed to eventually lead us close to our goal of TB elimination.

## CONCLUSION

Tuberculosis is a disease that has infected mankind since times immemorial. India especially has been a breeding ground for the disease due to heavy population density, lack of education and lack of awareness in the common population. Tuberculosis is a major economic burden on our country. This study showed that the most commonly affected age group is the working age group which increases manifold the economic burden on the country. Thus, strengthening the NTEP (previously known as RNTCP) and following the guidelines suggested are of utmost importance if we wish to uproot the disease from our country and achieve the goal of TB elimination.

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