

A study on Treatment Outcome of Registered Tuberculosis Patients Under Revised National Tuberculosis Control Programme at Tuberculosis Unit, Pathan, Maharashtra

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Abstract

Background: Tuberculosis remains the cause of death inspite of national anti-tuberculosis program in India. The study was made attempt to evaluate outcome of registered Tuberculosis patients under Revised National Tuberculosis Control programme at Tuberculosis Unit, Pathan, Maharashtra. **Method:** The present study was record based including all tuberculosis cased registered for treatment at Tuberculosis Unit, Pathan. All this information was collected for the year 2014. Referring quarterly reports of RNTCP, data was collected. **Result:** In the present, the success rate for PTB was 87.1% and EPTB was 90.5%. Among the pulmonary tuberculosis cases, cure rate was 51.9% while treatment completion rate was 35.2%. Among the EPTB cases, treatment completion rate was 90.5% with death rate 2.4%. The default rate of 3.4%, transferred out rate of 0.4% and 3.4 % failure rate were reported in year 2014. **Conclusion:** Though microscopic activity and DOTS activity are appropriate there is deficiency in trained personnel and lacking in achievement of treatment outcome as per the guidelines.

Keywords: PTB; EPTB; Pathan; Success rate.

Introduction

About 2.2 million people get TB every year, and more than 0.5 million die each year.¹ The total number of people suffering from infectious diseases in India is 14 million, of which 3 to 3.5 million are positive for sputum. About one million positive cases of mumps are added every year.² Tuberculosis is chronic disease worldwide, bacterial diseases that remain basic Public health issues even after its discovery.³ Tuberculosis is a contagious and infectious chronic disease caused by the mycobacterium parasite that often affects the lungs, leading to pulmonary tuberculosis. This

age-related disease is not only a public health issue but a social and economic problem for humanity.⁴ Keeping above things in mind, Govt. has launched a revised National Tuberculosis Control Programme (RNTCP) with the goal of achieving at least 85% cure rate through DOTS and 70% of expected.²

India has the highest incidence of tuberculosis in the world, accounting for almost a fifth of the world's burden.⁵ The mortality rate for tuberculosis is high, around 50% of untreated cases die from the disease. One in three people living with HIV have tuberculosis. The key to this strategy is to treat tuberculosis through direct supervision at patient's time and place.⁶

Still the transmission is higher and mortality and morbidity related to tuberculosis is higher may be due to co-infection with HIV/AIDS, Malnutrition and emergence of MDR-TB. Therefore, the current study was planned to assess treatment outcome of registered Tuberculosis patients under Revised National Tuberculosis Control programme at Tuberculosis Unit, Pathan, Maharashtra

Objectives

To assess treatment outcome of registered Tuberculosis patients under Revised National Tuberculosis Control programme at Tuberculosis Unit, Pathan

Materials and methods

The present study was record based observational cross-sectional study was carried out at Tuberculosis Centre, Pathan. The study included all cases of TB registered for treatment in the Pathan TB unit. All this information was collected for the year 2014. Referring quarterly reports of RNTCP, data was collected.

Data Collection

Data collection on the work of the TB was accomplished with information on diagnostic activities, treatment activities, and treatment outcomes. All this information is collected through access to records maintained at the TB unit. Researchers visit the TB unit and gather information through laboratory registration, reference registration, and clinical registration. All collected information is integrated into a structured support proforma. Ethical clearance was obtained prior to the commencement of the study. As per the guidelines of Revised National Tuberculosis Programme, Operational definitions were considered in the present study^{7,8}.

Statistical Analysis

Data was entered in Excel and various performance indicators were calculated. Descriptive statistics such as mean, SD and percentage was used to present the data.

Results

Tables 1, 2 and 3.

Table 1: Clinical characteristics of study subjects

Characteristics	Number	Percentage
TB case detection activities		
NSP	157	50.5
NSN	49	15.7
EPTB	42	13.5
New TB	248	79.7
Old sp +ve	63	20.6
Only PTB	269	86.5
Disease classification		
Pulmonary TB	264	11.7
Extra pulmonary TB	42	7.2
Sputum findings		
Sputum +ve	157	6.64
Sputum -ve	2205	93.36
Treatment outcome		
Cure	137	51.9
Treatment completed	93	35.2
Treatment failure	9	3.4
Default	9	3.4
Deaths	15	5.7
Transfer out	1	0.4
Treatment activities		
On treatment	264	84.9
Cat - I	201	76.1
Cat - II	63	23.9

Table 2: Agewise distribution of PTB & EPTB

Age	PTB	EPTB
0-14	10 (16.4)	2 (13.3)
15-24	43 (12.4)	8 (8.3)
25-34	55 (10.6)	6 (3.8)
35-44	40 (6.7)	8 (6.2)
45-54	36 (10.2)	7 (8.2)
55-64	32 (14.5)	4 (7.7)
>65	48 (32.6)	7 (15.2)

Table 3: Outcome of treatment of PTB & EPTB

Outcome	PTB*	EPTB**
On treatment	264 (84.9)	42 (13.5)
Cure	137 (51.9)	-
Treatment complete	93 (35.2)	38 (90.5)
Death	15 (5.7)	1 (2.4)
Failure	9 (3.4)	1 (2.4)
Transferred out	1 (0.4)	2 (4.8)
Default	9 (3.4)	0

*Success Rate: 87.1%, **Success Rate: 90.5%

Discussion

Clinical characteristics

In 2014, nearly 26.7% of population were visited OPD under at Pathan Tuberculosis Units. Of the chest pain symptoms were only 2.89% and of all 2362 (97.6%) symptoms were targeted for sputum microscopy and 154 (6.5%) were found sputum smear positive for TB. Similar finding with respect to sputum positivity was reported by N.M. Kaore *et al.* (7.11%)⁹, while Ajaykumar *et al.*¹⁰ (26.4%) reported a high sputum positivity compared to the present study.

In the present study, 248 (79.7%) of all new cases were tuberculosis and 42 (13.5%) were Extra-pulmonary tuberculosis cases respectively which was higher than S Bisoi¹¹ detected 67% new cases of pulmonary tuberculosis and 33% of cases of extra-pulmonary tuberculosis in new detected tuberculosis cases, whereas Abhijit Mukherjee *et al.*¹² reported 77.8% new pulmonary tuberculosis cases and 23.2% extra-pulmonary tuberculosis cases. Of the newly detected tuberculosis cases, they found that 50% were new sputum positive. A.L. Da Costa *et al.*¹³ also identified 67.47% of cases of pulmonary tuberculosis and 32.52% of extra-pulmonary tuberculosis cases. Compared to these studies, the finding of present study are higher. This discrepancy may be due to studies considered the reports after year 2012 and the comparative

studies were performed before 2006, except A.L Da Costa *et al.* who studied for a prolonged period of 9 years.¹³

Treatment Activities

Many studies have reported high rate of pulmonary tuberculosis cases on Cat-I similar to the present study from 81% to 95.5%. A Mishra *et al.*,¹⁴ S L. Chandha *et al.*¹⁵ and Abhijit M *et al.*¹² A L. Da Costa *et al.*¹³ have reported the patients on DOT, non DOT category though the non DOT category is phased out. This non DOT category was not found in present study area nor reported by the reference studies.

Almost similar sputum rate conversion by three months in case of pulmonary tuberculosis Cat-I was reported by Bawri S *et al.*,¹⁶ and Gurpreet K *et al.*¹⁷ Simmi Tiwari *et al.*¹⁸ reported the achieved below average (84%) and S Bisoi, *et al.*¹¹ also found poor conversion rate (74%) among new sputum positive cases.

The quarterly recovery of Sputum conversion rate of re-treatment cases was found to be lowest for 60% among Cat-II patients as opposed to rate of sputum conversion among Cat-I (89.4%). A Mishra *et al.*¹⁴ reported sputum conversion rate of 56% and Abhijit M *et al.*¹² Md Shamim Akhtar *et al.*¹⁹ have reported very low level of sputum conversion rate, in contrast to these studies Gurpreet K *et al.*¹⁷ have reported highest sputum conversion rate among Cat-II patients.

Age distribution

In the study, most common affected age group was 15-34 years followed by 45-54 years of age. This suggests that most of physical and economically groups was affected, which may lead to increase in dependency, loss of income, poverty and a significant gain for the people affected by pulmonary tuberculosis. Similar extra-pulmonary tuberculosis was also found higher among same age groups. Similar findings were reported by Bawri S. *et al.*¹⁶ Whereas study done by Mohandas B reported that, most common age group 45-64 (35.2%)²⁰.

Treatment outcome

In the present study the cure rate among pulmonary tuberculosis cases were found more 51.9% as compared to study done by Mahesh C *et al.*²¹ (43.3%), however, studies conducted by A. Mishra *et al.*¹⁴ (85.04%) and SL Chadha *et al.*¹⁵ (90%) had high cure rates among pulmonary tuberculosis cases. In the present study, treatment completion rate was found 35.2%. The success rate was observed 87.1% for PTB and 90.5% got EPTB. Similar findings of average cure rate was given by A Mishra *et al.*,¹⁴ S L. Chandha *et al.*,¹⁵ Puwar B *et al.*,²¹ Abhijit M *et al.*,¹² Md Shamim Akhtar *et al.*¹⁹ and Simmi Tiwari *et al.*¹⁸

In this study, the success rate was found to be 87.1%, similar findings was found by R Prasad *et al.*²³ of 89.4%. The level of default rate (3.4%) was achieved below 5% in the current study as per RNTCP guidelines^{7,8} and was low as compared to 32.5% in the study by Mahesh C *et al.*²¹ and 3.79% by R Prasad *et al.*²³ In this present study, high death rate (5.7%) as compared to SL Chadha *et al.*¹⁵ (0.93%). Among pulmonary TB cases, the failure rate was found 3.4% in the current present which was slightly higher in study by SL Chadha *et al.*¹⁵ (1.5%) and R Prasad *et al.*²³ (1.25%). Transferred out cases (0.4%) were very less as compared to AL Da Costa *et al.*¹³ (16.09%).

Among patients with extra-pulmonary TB, the treatment completion rate (90.5%) in the present study was higher compared to AL Da Costa *et al.*¹³ (85.05%), Mohandas B²⁰ (89%) and the study achieved the targets of Revised National Tuberculosis Control Programme (RNTCP) guidelines^{7,8} ($\geq 90\%$). However, in their study mortality rate was lower (2.29%), whereas both transferred out (16.09%) and default rates (12.65%) were very high compared to the present study.

The results of outcome of extra-pulmonary tuberculosis, deaths, failures, failures, failures, and transferred cases are within the target set by the

revised National Tuberculosis Control Guidelines (RNTCP).^{7,8}

Conclusion

In the TB unit, patients are satisfied with the services provided under the revised TB Control Program. Although microscopic and DOS activities are appropriate, there is a shortage of trained staff and a lack of treatment outcomes as recommended by the National TB Control Program.

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