

A Study on Treatment Outcome of Tuberculosis Patients Registered at Tuberculosis Unit (TU) in Bareilly [U.P.],India.

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Abstract:

Introduction: Tuberculosis (TB) is a global health concern, India ranks first among the world's high-burden tuberculosis (TB) countries. Revised National Tuberculosis Control Program (RNTCP) was found successful in achieving its objectives; still there is concern of relapse cases and defaulters. **Materials and Methods:** This cross-sectional survey was conducted on 97 TB patients registered under DOTS at Bhojipura tuberculosis unit. Selection of Tuberculosis unit was done by simple random sampling. **Results:** Out of 97 registered patients, 65(67%) were males and 33% were females. Cure rate among category I and category II was 54.9% and 50.0% respectively. Majority of the patients 23 (23.7%) were in the age group of 21-30 years. Defaulters were more in category II than category I. No case of failure was reported in category II. **Conclusion:** Treatment success rate (54.9% in Cat I and 50.0% in CatII) was low and a comparatively higher death rate (5.2%) was found. There is a need for enhanced supervision and improved counseling activities in order to achieve better treatment success rate.

Key Words: DOTS, Treatment, Tuberculosis .

Introduction:

Tuberculosis (TB) is a global health concern; nearly one third of the global population is infected with Mycobacterium tuberculosis and at risk of developing the disease [1]. More than 90% of global TB cases and deaths occur in the developing world, where 75% of cases are in the most economically productive age group. [2] India ranks first among the world's high burden tuberculosis (TB) countries [3].

DOTS ensure the best possible results in treatment of TB. Here, an observer watches and assists the patient in swallowing the tablets; thereby ensuring that patient

receives the right drugs, in the right doses, at the right intervals and for the right duration [4].

The control of TB in India has shown remarkable progress with the entire country being covered under the RNTCP.[4] Despite encouraging results and high cure rates achieved in RNTCP, queries are often raised by clinicians regarding effectiveness of RNTCP regimens, particularly the dosage recommended and the intermittent drug administration. These concerns could be convincingly addressed through an assessment of treatment outcome.

The health status of TB patients' years after course of DOTS treatment is unknown. The knowledge of health status of these patients is necessary to know long-term effect of program strategy.

The aim of the present study was to assess the treatment outcome of TB patients, various demographic factors associated with treatment outcome and to assess the follow-up status of TB patients put on DOTS.

Materials and Methods:

The present cross sectional study was conducted in the tuberculosis unit located in the field practice area of Department of Community Medicine, Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly. The selection of Bhojipura Tuberculosis unit was made on the basis of the simple random sampling and all the patients registered at the selected TU comprised the study population. The study subjects included patients aged between 11- 65 years of age and having completed the treatment for at least one month. The patients were contacted at the TU and attached DOTS center and were interviewed using a pre-designed and pre-tested questionnaire by the investigator after obtaining verbal consent. Data were collected about the socio-demographic profile such as age, sex, education, occupation, type of TB, category of treatment regimen and outcome.

The study was approved by institutional ethical committee and data was entered in SPSS version 20 and percentages and appropriate statistical tests of significance were applied.

Definitions:

Cured: Initially sputum smear positive patient who has completed treatment and had negative sputum smears, on at least two occasions, one of which was at the end of treatment.

Treatment Completed: A sputum smear-positive patient who has completed treatment and had negative

smears, at the end of Intensive Phase (IP), but none at the end of treatment.

Defaulted: A patient who has not taken anti-TB drugs for 2 months or more consecutively, after starting treatment.

Failure: A patient who was initially smear positive, who began treatment and who remained or became smear positive again

Died: A patient who died during the course of treatment regardless of the cause of death.

Observations and Results :

Table 1 : Age Distribution of Tuberculosis subjects

Age (In years)	Frequency	Percentage
11-20	20	20.6
21-30	23	23.7
31-40	22	22.7
41-50	12	12.4
51-60	15	15.5
61-65	5	5.2

A total of 97 subjects participated in the study of which 65(67%) were males and 33% were females. Out of the total 97 patients, majority of the patients 23 (23.7%) were in the age group of 21-30 years followed closely by 22 patients (22.7%) who were in the age group of 31-40 while the least number of subjects (5.2%) were in the age group of >60 years of age. 71 (73.2%) patients were registered in Category I and 28.6% were registered for Category II.

Table 2-Distribution of tuberculosis patients according to their treatment outcome

Outcome	Frequency	Percentage
Cured	52	53.6
Treatment completed	32	32.9
Defaulted	7	7.3
Failure	1	1.0
Died	5	5.2
Total	97	100.0

Table-2 shows the treatment outcome of TB patients in which cure rate among category I and category II was 54.9% and 50.0% respectively. Treatment completion rate was 36.6% and 23.1% among category I and Category II respectively. Defaulters were more in category II than category I. No case of failure was reported in category II.

Table 3: Outcome of the patients with respect to their category of the treatment

Treatment outcome	Cured	Treatment completed	Defaulted	Failure	Died	Total
Cat I	39 (54.9)	26 (36.6)	4 (5.6)	1 (1.4)	1 (1.4)	71 (100.0)
Cat II	13 (50.0)	6 (23.1)	3 (11.5)	0 (0.0)	4 (15.4)	26 (100.0)
Total	52 (53.6)	32 (33.0)	7 (7.2)	1 (1.0)	5 (5.2)	97 (100.0)

Figures in parenthesis are percentage

It is evident from table-3 that cure rate was higher among the patients with age group 41-50 years whereas patients in the age group of 51-60 years age group showed lower cure rate (26.7%). The treatment completion rate was higher among the patients aged 51 years and older. The defaulters were found to increase with advancing age. The mortality was high in the age group of 51-60% as compared to other age groups.

Table 4- Sex wise distribution of the treatment outcome among patients of tuberculosis

Sex	Cured	Treatment completed	Defaulted	Failure	Died	Total
Male	36 (55.4)	20 (30.8)	4 (6.2)	1 (1.5)	4 (6.2)	65 (100.0)
Female	16 (50.0)	12 (37.5)	3 (9.4)	0 (0.0)	1 (3.1)	32 (100.0)
Total	52 (53.6)	32 (33.0)	7 (7.2)	1 (1.0)	5 (5.2)	97 (100.0)

Figures in parenthesis are percentage

Table-4 shows the cure rate was higher among the males (55.4%) as compared to females but the treatment completion rate was higher among the females (37.5%) as compared to males (30.8%). The percentage of defaulter was high among the females as compared to males. The percentage of defaulters was higher among the females (9.4%) as compared to males (6.2%).

Discussion:

In the present study it was found that out of the 97 subjects, 67% were males and 33% were females which is comparable to a study done in Karnataka where 67.4% of the study subjects were males and 32.6% were females [5]. Sex distribution of the present study is also comparable to a study by Lanjewar B et al in Pune where 62% were males and 38% were females [6].

In our study cure rate was found to be 53.6% which is slightly higher compared to a lower cure rate as observed in a study in Pune [6]. The cure rate observed in the present study is lower as compared to a study by Chadha S.L et al in Delhi revealed cure rate as 92.6% [7]. Studies done in Mumbai and China have shown cure rate of 83.59% and 95.3% respectively [8,9].

The present study revealed treatment success rate as 54.9% and 50.0% in category I and category II respectively. The treatment success rate was found to be higher in study done in Delhi where treatment success rate in Category I and Category II were found to be 91% and 73% respectively [7]. Death rate of 5.2% in the present study is comparable to a study by Karanjekar VD et al where a death rate of 3.2% was found [10].

In our study cure rate was higher among the males as compared to females which is in accordance with the findings of a study by Karanjekar VD et al where also the cure rate was higher among the males (39.7%) as compared to females (27.7%) [10]. On the contrary, the cure rate was found to be higher among the females (84.1%) as compared to males (76.9%) in a study by Addis et al in North West Ethiopia [11].

Conclusion:

The findings of the present study suggest that treatment success rate was low and a comparatively higher death rate was found. To improve treatment success rate and minimize the death rate, default tracing and home visit made by health extension workers must be strongly implemented as observed in other regions. Enhanced supervision and improved counselling activities also need to be implemented so

that the default rate can be minimized for better treatment success rate.

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