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ORIGINAL ARTICLE

ASSESSMENT OF TREATMENT OUTCOME OF TUBERCULOSIS PATIENTS UNDER REVISED NATIONAL TUBERCULOSIS CONTROL PROGRAMME IN NANDED, MAHARASHTRA

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ABSTRACT: INTRODUCTION: Tuberculosis (TB) remains a world-wide public health problem despite the fact that the causative organism was discovered more than 100 years ago and highly effective drugs and vaccine are available making TB a preventable and curable disease. **OBJECTIVE:** To assess the treatment outcome of tuberculosis patients under Revised National Tuberculosis control Programme. **MATERIAL AND METHODS:** The present record based study was conducted during July 2013-September 2013. The treatment outcome of all tuberculosis patients were assessed from the RNTCP treatment cards that were on DOTS during 1st Jan 2011 to 30th June 2012 at City Tuberculosis Center, Nanded-Waghala Municipal Corporation, Jangamwadi, Nanded. Before starting the study, the ethical approval was obtained from the Institutional Ethics Committee of the college. The data was directly entered on the Microsoft Excel regarding epidemiological variables and outcome of tuberculosis patients. The data was tabulated and analyzed by using statistical software Open Epi Version 2.3 by maintaining confidentiality. **RESULTS:** Thus we had included 442 TB patients. The findings of treatment outcome of TB patients were Cured 104 (23.53%), treatment completed 289 (65.38%), defaulters 20 (4.52%), treatment failures 1 (0.23%), deaths 25 (5.66%) and transferred out 3 (0.68%). **CONCLUSION:** Our study showed the treatment outcome rates as per the expected norms RNTCP.

KEYWORDS: Tuberculosis, Treatment outcome, RNTCP.

INTRODUCTION: Tuberculosis (TB) remains a world-wide public health problem despite the fact that the causative organism was discovered more than 100 years ago and highly effective drugs and vaccine are available making TB a preventable and curable disease.[1] The annual incidence of TB is nearly eight million, with two million deaths worldwide.[2] India is the highest TB burden country in the world and accounts for nearly one-fifth (20%) of global burden of TB.[1] Around 1.8 million people are detected to have tuberculosis every year in India, of which about 0.8 million are new smear positive highly infectious cases. Over 0.4 million die of this disease every year (17% of global TB deaths) [3]. Worldwide, more men than women are known to be suffering from TB. As the TB affects the most productive age groups, the impact of the disease is felt by the children and their families. In India also the prevalence of TB is higher among males as compared to females [4]. The one of the pillar of the revised strategy is Direct Observed Therapy Short-term (DOTS) which is recognized as the fastest expanding programme in India today. Death rate under Revised National Tuberculosis Control Programme (RNTCP) has been cut 7-fold from 29% to around 4% in smear positive cases[1].

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DOTS is a community based TB treatment and care strategy which combines the benefit of community based care and support. It ensures high cure rate through its 3 components namely appropriate medical treatment, supervision and motivation by health workers and monitoring of the disease status by health personnel[5].

RNTCP being a switch-over programme from the previous NTP, more and more operational researchers are needed at this juncture when it is moving from one phase to another to know whether it is heading towards the right direction as far as pace and quality of implementation are concerned[6]. Such type study was lacking in Marathwada region of Maharashtra. The present study was undertaken to assess the treatment outcome of tuberculosis patients under Revised National Tuberculosis control Programme.

MATERIALS AND METHOD: We included all TB patients those were on DOTS during 1st Jan 2011 to 30th June 2012 at City Tuberculosis Center, Nanded-Waghala Municipal Corporation, Jangamwadi, Nanded in the present record based study. The treatment outcome of all tuberculosis patients were assessed from the RNTCP treatment cards. Treatment outcomes details were not available for 10 subjects and were not included in the analysis. Before starting the study, the ethical approval was obtained from the Institutional Ethics Committee of the college.

The variables like demographic (age and Sex), clinical (TB Classification and type of TB and treatment outcomes) were studied. The data was directly entered in the Microsoft Excel and analyzed by using statistical software Open Epi Version 2.3 by maintaining confidentiality. The results were reported as percentages.

Definitions of tuberculosis cases and treatment outcome used in RNTCP[1]

Cured: Initially smear positive patient who completed treatment and had negative smear result on at least two occasions (one at treatment completion)

Treatment completed: Initially smear positive patient who received full course of treatment, or smear positive who completed treatment, with negative smear at the end of initial phase, but no or only one negative smear during continuation and none at treatment end.

Treatment default case: A patients who returns sputum smear positive, after having left treatment for at least two months.

Treatment failure case: A patient who was initially smear positive, who began treatment and who remained or became smear positive again at five months or later during the course of treatment.

Transfer out: A patient who has been transferred to another area register and treatment results are not known.

RESULTS: We included 442 patients in the present study, out of which 273 (61.76%) were males and 169 (38.24%) were females. The majority, 157 (35.52%) patients were belonged to economically productive age group of 21-30 years. The 286 (64.71%) patients had pulmonary tuberculosis and 156 (35.29%) extra-pulmonary tuberculosis. Among 442 tuberculosis patients, 387 (87.56%) belonged to category I (newly diagnosed) and 55 (12.44%) belonged to category II (retreatment cases) shown in table 1. Total cure rate was (104) 23.53%, total treatment completed 289 (65.38%), total defaulter rate was 20 (4.52%), total failure rate was 1 (0.23%), total death rate was 25 (5.66%) and total transferred out was 3 (0.68%) shown in table 2.

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DISCUSSION: In the present study found that TB affects the most productive age group 20-40 years i.e. 236 (53.39%). Similar finding also seen in Chennaveerappa PK[7] et al descriptive study conducted in district hospital, Hassan, Karnataka, South India., in which out of 181 patients, majority of them 159 (87%) belonged to economically productive age group. Kasi Srinivas et al[3] observed that 40 (88.89%) out of 45 cases belonged to age group less than 45 years.

In the present study incidence of TB was found to be higher 273 (61.76%) in male population and 169 (38.24%) in female population. Kasi Srinivas et al[3] observed that out of total 45 TB cases, 31 (68.89%) were males and 14 (31.11%) were females. Rajarao P et al[4] conducted a retrospective record based study found that out of 585 patients 220 (80%) were males and 55 (20%) were females. Similar finding also seen in Chennaveerappa PK et al[7] found that males were 123 (67.4%) and females were 58 (32.6%). Shrinath S et al[8] carried out a study in Andhra Pradesh and they found that out of 1009 patients 674 (67%) were males. Masti NRR et al[9] study, out of 88 patients majority 64.77% were males and 35.22% were females.

In the present study, out of 442 patients, pulmonary TB cases were 286 (64.71%) and extra-pulmonary TB were 156 (35.29%). Mishra A et al[5] carried a observational study in Gwalior found that out of 312 TB patients 269 (86.21%) were suffered from pulmonary TB and 43 (13.78%) were had extra pulmonary TB. Similar finding also seen in Chennaveerappa PK et al[7] in which out of 181 patients, 116 (65.0%) patients had pulmonary TB and 65 (35.0%) patients had extra pulmonary TB. Masti NRR et al[9] found that 86.36% patients had pulmonary TB and 13.64% had extra-pulmonary TB.

In the present study success rate DOTS treatment was 88.91% (Cured 23.53% and treatment completed 65.38%). Kasi-Srinivas et al[3] observed that treatment outcome of TB patients were 91.12% got cured, 4.44% were failure cases and 4.44% died during treatment. Mishra A et al[5] found that out of 107 new cases 91 cases were cured i.e. cured rate 85.04%. Chennaveerappa PK et al[7] found that treatment outcome among total 181 subjects was, 64 (84.2%) patients got cured, 4 (2.0%) patients were treatment failure, 11 (6.0%) patients died and 15 (8.0%) were treatment defaulters and treatment Success rate was 83.4 % (151 out of 181). Shrinath S et al[8] 80% were successfully treated (cured plus treatment completed). Masti NRR et al[9] study cure rate was 72.00%, treatment completion was 80.55%, and defaulted patients were 22.72%.

Our study showed the treatment outcome rates as per the expected norms of RNTCP, which showed that the implementation of RNTCP in the study area had achieved the prescribed goal.

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Outcome		Cured (%)	Treatment completed (%)	Default (%)	Failure (%)	Death (%)	Transferred out (%)	Total (%)
Sex	Male	66 (14.93)	172 (38.91)	14 (3.17)	1 (0.23)	19 (4.30)	1 (0.23)	273 (61.76)
	Female	38 (8.60)	117 (26.47)	6 (1.36)	0 (00)	6 (1.36)	2 (0.45)	169 (38.24)
Age	< 10	0 (00)	04 (0.91)	0 (00)	0 (00)	0 (00)	0 (00)	4 (0.91)
	11-20	20 (4.52)	58 (13.12)	6 (1.36)	0 (00)	1 (0.23)	1 (0.23)	86 (19.46)
	21-30	40 (9.05)	104 (23.53)	5 (1.13)	0 (00)	7 (1.58)	1 (0.23)	157 (35.52)
	31-40	16 (3.62)	50 (11.31)	4 (0.91)	1 (0.23)	8 (1.81)	0 (00)	79 (17.87)
	41-50	16 (3.62)	33 (7.47)	2 (0.45)	0 (00)	3 (0.68)	0 (00)	54 (12.22)
	51-60	4 (0.91)	19 (4.30)	1 (0.23)	0 (00)	2 (0.45)	0 (00)	26 (5.88)
	>60	8 (1.81)	21 (4.75)	2 (0.45)	0 (00)	4 (0.91)	1 (0.23)	36 (8.14)
Category of TB	Cat I	93 (21.04)	259 (58.59)	13 (2.92)	0 (00)	19 (4.30)	3 (0.68)	387 (87.56)
	Cat II	11 (2.48)	30 (6.79)	7 (1.58)	1 (0.23)	6 (1.36)	0 (00)	55 (12.44)
Types of TB	Pulmonary	103 (23.3)	151 (34.16)	11 (2.49)	1 (0.23)	17 (3.85)	3 (0.68)	286 (64.71)
	Extra-pulmonary	1 (0.23)	138 (31.22)	9 (2.04)	0 (00)	8 (1.81)	0 (00)	156 (35.29)

Table 1: Treatment outcomes of different categories

(Figures in parenthesis denotes percentages)

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Treatment outcome	TB patients	Percentages
Cured	104	23.53
Treatment Completed	289	65.38
Default	20	04.52
Failure	1	00.23
Death	25	05.66
Transferred out	3	00.68
Total	**442**	**100**

Table 2: Treatment outcomes of tuberculosis patients

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