International Journal of Community Medicine and Public Health
Akarkar NS et al. Int J Community Med Public Health. 2017 Mar;4(3):831-834
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20170767

Original Research Article

Treatment outcomes among tuberculosis patients at an urban health centre, Goa, India- eight year retrospective record based study

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Received: 17 December 2016
Accepted: 25 January 2017

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ABSTRACT

Background: India contributes the highest TB burden globally and DOTS being the key strategy of RNTCP needs evaluation. The objective of this study was to assess treatment outcomes in TB patients on DOTS in terms of success rates in new and retreatment cases.
Methods: Retrospective record based study was conducted at urban health centre, Santa Cruz Goa, India including 135 TB cases registered from January 2008 to January 2016 for DOTS. Data on treatment outcomes was analysed using appropriate statistical methods and percentages were calculated.
Results: Out of total 135 TB cases, 64.4% had pulmonary while 35.6% had extra-pulmonary TB. Percentage of new cases was 84.4% whereas 15.6% were retreatment cases. Success rate (cure rate plus treatment completion rate) for new cases was 84.2% and for retreatment cases was 76.2% while the overall success rate was 83%.
Conclusions: Successful treatment outcome was lower compared to the RNTCP norm.

Keywords: DOTS, Treatment outcome, Tuberculosis, Urban Health Centre

INTRODUCTION

Globally, Tuberculosis (TB) still remains as an important public health problem contributing to significant morbidity and is one of the top ten causes of mortality.[1,2] India contribute nearly one fourth of the global tuberculosis burden and is the highest TB burden country in the world.[1] The World Health Organisation statistics for 2015 gave an estimated incidence of 2.2 million cases of TB for India out of a global incidence of 9.6 million.[3]

Revised national tuberculosis control programme (RNTCP) was a revised and intensified version of national tuberculosis control programme (NTCP) due to its failure and occurrence of Multi-drug resistance cases.[4] Also stigma and discrimination associated with this disease further worsen the problem.[5] The current programme was launched in 1997 and gradually covered the entire country of India by March 2006. RNTCP covered a population of 1.28 billion in India in 2015.[3] The main objectives of this programme are to achieve and maintain a cure rate of 85% among new sputum positive cases and to achieve and maintain case detection rate of 70%[6] with directly observed treatment short course (DOTS) as its main strategy. In the state of Goa, India it was implemented in September 2004.

Studies on treatment outcomes of TB patients is crucial for knowing the effectiveness of DOTS, but few such studies have been conducted in the state of Goa.[7,8] Therefore the present study was a felt need, conducted to know the demographic profile and treatment outcomes of patient registered for DOTS under RNTCP in urban health centre, Santa Cruz Goa.

METHODS

The present study was conducted in the month of October 2016 at urban health centre Santa Cruz, which is a field practice area of the Department of Preventive and Social Medicine, Goa Medical College, Goa, India serving a population of about 21,000. It was a retrospective record based study of pulmonary tuberculosis (PTB) as well as extra-pulmonary tuberculosis (EPTB) patients registered for DOTS according to the RNTCP guidelines from January 2008 till January 2016 (8 years). The RNTCP register maintained at the urban health centre was used to obtain the secondary data.

The majority of the TB patients received either Category 1 or Category 2 DOTS regimen. Some received Category 3 regimen until it was discontinued from the programme in 2012. Standard case and treatment outcome definitions were used.[9] Data obtained was entered in Microsoft Office Excel 2007 and then analysed using SPSS version 14 with appropriate statistical tests and percentages were calculated. Ethical approval was taken from the local ethics committee of Goa Medical College, Goa, India.

RESULTS

Over the period of eight years, 135 TB patients were registered for DOTS at the urban health centre. All these patients were residents of Santa Cruz panchayat. Majority i.e. 14.8% and 14.1% were registered in the year 2009 and 2015 respectively (Table 1).

Table 1: Year wise registration of TB cases for DOTS.

Year	Number of patients	%
2008	15	11.1
2009	20	14.8
2010	14	10.4
2011	18	13.3
2012	14	10.4
2013	16	11.9
2014	14	10.4
2015	19	14.1
2016	5	3.7
Total	135	100.0

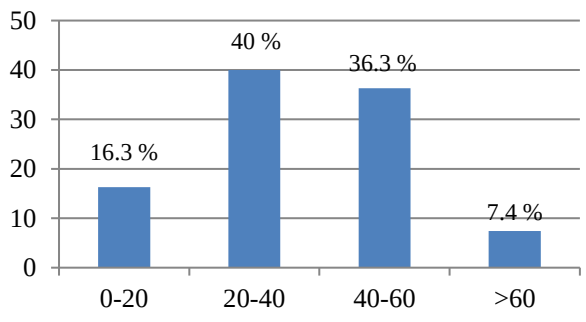

Figure 1: Age wise distribution of the TB cases.

With respect to age, 54 (40%) and 49 (36.3%) were belonging to the age group of 20-40 years and 40-60 years respectively and least (7.4%) was geriatric population (Figure 1).

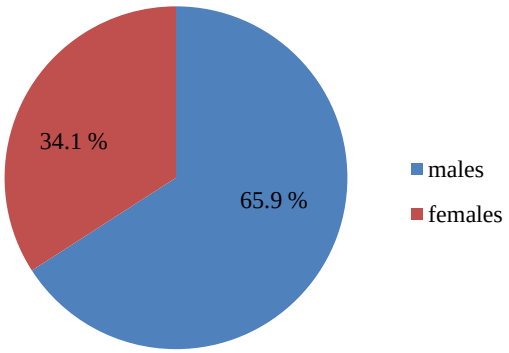

Figure 2: Sex wise distribution of the TB cases.

Out of the total 135 patients, 89 (65.9%) were males and 46 (34.1%) were females (Figure 2). Most of the patients i.e. 96 (71.1%) were Hindus followed by Catholics 28 (20.7%) and a minority 11 (8.1%) belonged to Muslim religion.

Table 2: Distribution of cases according to the type of TB.

Type of TB	Frequency	%
Pulmonary	87	64.4
Extra-pulmonary	48	35.6
Total	135	100.0

The present study showed that 87 (64.4%) were pulmonary tuberculosis cases (PTB) while remaining 48 (35.6%) were extra-pulmonary tuberculosis (EPTB) cases (Table 2). Out of 87 PTB cases, 69 (79.3%) were sputum smear positive and 18 (20.7%) were sputum smear negative.

Table 3: Distribution of TB cases according to the category at the commencement of treatment.

TB category	Frequency	%
New	114	84.4
Relapse	18	13.3
Treatment after default	2	1.5
Failure	1	0.7
Total	135	100.0

Out of the 135 cases registered, 114 (84.4%) were new cases and 21 (15.6%) were retreatment cases. Of the retreatment cases; 18 were “relapse”, 2 were treatment “defaulters” and one was “treatment failure” (Table 3). A total of 95 (70.4%) received Category 1 treatment, 31 (23%) received Category 2 and 9 (6.7%) received Category 3 DOTS treatment.

With respect to the treatment outcomes in the study; 65 (48.2%) were cured, 47 (34.8%) completed the treatment; 5 (3.7%) expired during the course of treatment; 5 (3.7%) had treatment failure; 6 (4.4%) defaulted the treatment and remaining 7 (5.2%) were transferred out (Table 4).

Table 4: Distribution of total TB cases based on the treatment outcome.

Treatment outcome	Frequency	%
Cured	65	48.2
Treatment complete	47	34.8
Expired	5	3.7
Failure	5	3.7
Default	6	4.4
Transferred out	7	5.2
Total	135	100.0

Total success rate i.e. cured and treatment completed was 83%. Success rate separately for new cases was 84.2% while for retreatment cases was 76.2% (Table 5).

Table 5: Success rate in new cases and retreatment cases.

TB case category	Outcome		Total
	Successful (%)	Unsuccessful (%)	(%)
New	84.2	15.8	100.0
Retreatment	76.2	23.8	100.0
Total	83	17	100.0

DISCUSSION

This 8 year record based retrospective study included all TB patients registered for DOTS under RNTCP at urban health centre Santa Cruz, Goa, India. The present study had majority (76.3%) of the TB patients from the economically productive age group contributing to loss of wages; Also it showed that TB was more common in males than females which was similar to the findings by Chennaveerappa PK et al, Veeramani G et al and N.M. Khan et al in their respective studies.[10-12] This is because of greater mobility of males for earning as compared to females hence increases the risk of exposure.

With respect to religion, majority (71.1%) were Hindu patients followed by Catholic (20.8%) and minority were Muslims (8.1%). This is perhaps because of larger Hindu population in the Santa Cruz community.

In the present study, 64.4% of the patients had Pulmonary TB while 35.6% had extra-pulmonary TB which differs from the national statistics which showed higher number of pulmonary TB cases (85-90%) compared to extra pulmonary.[6] While a study by A. L. Da Costa et al in a tertiary care institute Goa and by A. Mishra et al in 6 DOTS centres in Gwalior city gave similar results with respect to the type of TB.[8,13]

Most patients (70.4%) were given CAT 1 drugs, followed by CAT 2 (23%) and least (6.7%) were given CAT 3 drugs as CAT 3 was discontinued from RNTCP in 2012. Study by Asha A. Bellad et al in a primary health centre, Belgaum also obtained similar results.[14]

With respect to treatment outcomes, total success rate was 83% while it was 84.2% and 76.2% separately for new and retreatment cases respectively. Comparable results were found by Dilip D. Motghare et al and Veeramani G et al in their respective studies in Goa and Tamil Nadu India.[7,11]

CONCLUSION

Tuberculosis largely affects males of the economically productive age group and causes economic losses. Success rate for new cases was higher compared to retreatment cases though the overall success rate was lower compared to the RNTCP norm.

ACKNOWLEDGEMENTS

Authors would sincerely like to thank the entire staff of Urban Health Centre, Santa Cruz Goa, India for their valuable co-operation and support.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee of Goa Medical College, Bambolim-Goa, India.

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Cite this article as: Akarkar NS, Pradhan SS, Ferreira AM. Treatment outcomes among tuberculosis patients at an urban health centre, Goa-eight year retrospective record based study. Int J Community Med Public Health 2017;4:831-4.