

**Original research article**

# Study of treatment outcome among tuberculosis patients on directly observed short course therapy in a primary health centre under Goa medical college Goa

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## **Abstract**

The Revised National Tuberculosis Control Programme (RNTCP) was started with the objective to detect 70% of the estimated cases and achieve a cure rate of at least 85% through administration of Directly Observed Treatment Short course chemotherapy (DOTS) so the burden of disease could be reduced. The study participants were those patients who had registered for DOTS therapy at PHC Sankhalim DOTS centre from January 2013 to December 2016. There were 197 subjects. Data was entered into excel sheet and analysed using Statistical Package for Social Sciences software version 14.0. Approval from the institutional ethics committee was taken. Majority of cases were in Category I 84.8% (167) i.e., new cases followed by 12.7% (25) in category II and 2.5% (5) were in category IV treatment at the initiation of treatment. Among 25 cases in category II, most of them were relapse cases 44% (11) followed by treatment after default 28% (7) and failure were 16% (4) in number. Around 79.74% had favourable outcome among patients on treatment.

**Keywords:** Tuberculosis patients, directly observed short course therapy, treatment outcome

## **Introduction**

Tuberculosis is a chronic communicable disease worldwide. Though India is the second-most populous country in the world, one-fourth of the global incident TB cases occur in India annually. In 2013, out of the estimated global annual incidence of 9 million TB cases, 2.1 million were estimated to have occurred in India [1]. The Revised National Tuberculosis Control Programme (RNTCP) was started with the objective to detect 70% of the estimated cases and achieve a cure rate of at least 85% through administration of Directly Observed Treatment Short course chemotherapy (DOTS) so the burden of disease could be reduced. The present study is aimed at assessing to what extent the objective of RNTCP programme has been met.

## **Objective**

To estimate the cure rate of patients on DOTS therapy registered at the DOTS centre at Primary Health Centre (PHC) Sankhalim.

## **Materials and methods**

**Study design:** The study was record based retrospective study, the data was collected from records from January 2013 till December 2016.

**Study area:** The study was carried out at PHC Sankhalim Goa.

**Study participants:** The study participants were those patients who had registered for DOTS therapy at PHC Sankhalim DOTS centre from January 2013 to December 2016. There were 197 subjects. Data was entered into excel sheet and analysed using Statistical Package for Social Sciences software version 14.0. Approval from the institutional ethics committee was taken.

## **Results**

Out of 197 study participants 47.3% (93) were in age group 21-40 years group, 30% (59) were between 41-60 years, 12.1% (24) were less than 20 years and 10.6% (21) were more than 61 years. The age of study participant ranged from 1 year 6 month to 85 years.

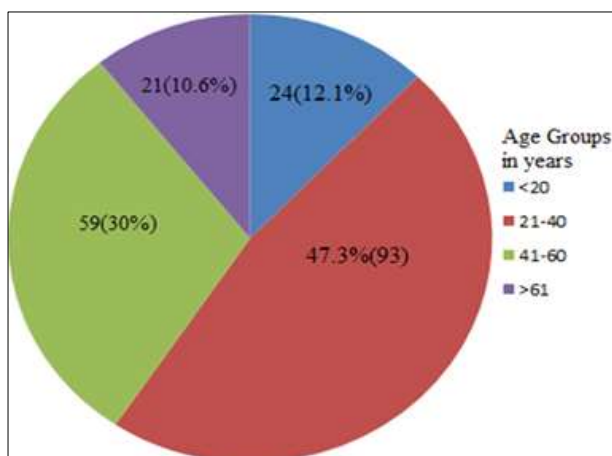


Fig 1: Age distribution of study subjects

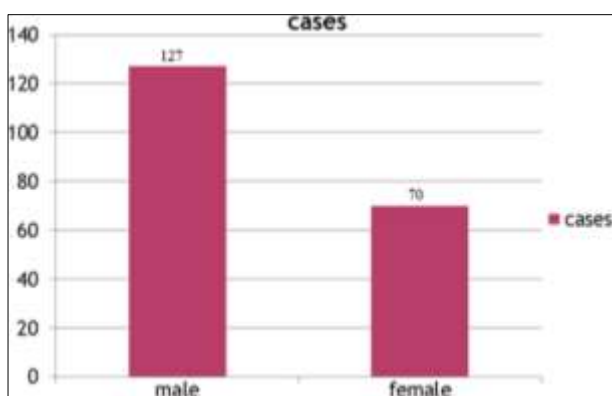


Fig 2: Sex distribution of study participants

In the present study 44.8% subject had negative, 28.64% had 1+, 17.7% had 3+ and 4.7% had 2+ and 4.16 had scanty sputum results at the initiation of treatment.

Table 1: Diagnosis of study participants at initiation of DOTS Treatment

Diagnosis	Numbers	Percentage (%)
Pulmonary	127	64.5
Extra pulmonary	65	33
MDR	5	2.5
Total	197	100

Majority of cases were in Category I 84.8% (167) i.e., new cases followed by 12.7% (25) in category II and 2.5% (5) were in category IV treatment at the initiation of treatment.

Among 25 cases in category II, most of them were relapse cases 44% (11) followed by treatment after default 28% (7) and failure were 16% (4) in number.

There were 14.2% (28) Diabetes subjects in the study and 3 cases who were TB HIV coinfectd.

Table 2: Treatment outcome among the subjects

Outcome	Numbers	Percentages (%)
Cured	86	43.7
Completed	71	36.04
Defaulted	10	5.07
Expired	8	4.1
Transferred out	10	5.07
Failure	5	2.5
Switched to MDR	2	1.01
Not known	5	2.5
Total	197	100

The treatment outcome was further classified into favourable and unfavourable outcome, favourable outcome encompassed cure and completed outcomes whereas unfavourable included treatment failure, default, death etc.

Around 79.74% had favourable outcome among patients on treatment.

The factors associated with the favourable outcomes or unfavourable outcome is shown in table 3.

**Table 3:** Factors associated with treatment outcome in Tuberculosis

Variable	Unfavourable outcome No (%)	Favourable outcome No (%)	total	OR (95% C I)	P value
<b>Diabetes mellitus</b>					
Present	12(42.8)	16(57.2)	28	3.78 (1.61- 8.85)	0.001
Absent	28(16.6)	141(83.4)	169		
<b>HIV/AIDS</b>					
Present	1(33.3)	2(66.7)	3	1.99 (0.18- 22.48)	0.8
Absent	39(20.1)	155(79.9)	194		

### Discussion

In the present study, the cure rate was 43.7% (86) and 36.04% (71) completed the treatment giving a success rate of 79.7%. The rate of defaulter and failure were 5.07% (10) and 2.5% (5) respectively. In a study conducted in a chest clinic run by Municipal Corporation of Delhi the success rate was 91% in category I and 73.3% in category II patients respectively, defaulter rate was 7.7% and treatment failure rate was 1.6%<sup>[2]</sup>.

Among HIV/AIDS were concerned, TB HIV coinfecting had 66.7% favourable outcome compared to non HIV TB patients who had 79.9% favourable outcome OR=1.99(0.18-22.48 CI). In a study carried out in South India by Chennaveerappa PK *et al* one of the reasons for low success rate in DOTS treatment was co-infection with HIV<sup>[3]</sup>.

A significant association was seen between Diabetes mellitus and unfavourable outcome. Among diabetes mellitus the favourable outcome was 57.2% compared to non-Diabetic who had 83.4% favourable outcome. This difference was statistically significant with p value = 0.001 and odds ratio of 3.78 (1.61- 8.85 CI). Similarly a Study by Motghare *et al* in goa showed a significant association between diabetes mellitus and unfavourable outcome, in this study among diabetes mellitus only 69.2% had a favourable outcome compared to 87.8% among non-diabetics<sup>[4]</sup>.

### Conclusion

Study showed the 79.74% success rate which was little lesser than the success rate stated in RNTCP objective. Patients with HIV and Diabetes mellitus were having higher levels of un-favourable outcomes; therefore such patients require continuous monitoring and support to ensure treatment success.

### References

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