

Original Article**Alcohol Abuse: A Cause of Default in Tuberculosis Treatment in Rajkot**

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ABSTRACT

Background: Revised National Tuberculosis Treatment Programme was implemented along with Directly Observed Treatment Short Course to improve cure rate of tuberculosis in India. Alcoholism like social factor was the major to decrease the adherence of the treatment.

Aims: This study was conducted to estimate the effect of alcoholism in the default of tuberculosis treatment.

Material and Method: 150 cases (TB treatment Defaulter) and 150 controls (Who have completed whole course of treatment) from the Rajkot district of Gujarat were enrolled and interviewed. Alcoholics were identified by standard pre-structured questioner. Risk of treatment default was calculated in alcoholics.

Results: Odd ratio for alcoholism between cases and control was 4.75 (2.26- 9.95); which indicates in alcoholic patients (under the tuberculosis treatment) have 375% higher risk of being default than that of non-alcoholic patients.

Conclusion: Alcoholic tuberculosis patients should be considered as a high risk patients and managed accordingly to decrease the default rate of tuberculosis treatment.

Key words: Alcoholism, Tuberculosis, Default rate

INTRODUCTION

Tuberculosis is an ancient infectious disease caused by mycobacterial tuberculosis. Over the years social and economic factors along with medical factors impacted the tuberculosis and its treatment. [1]

In 1983 India launched RNTCP (Revised National Tuberculosis Programme) in phased manner using globally recommended DOTS (Directly Observed Treatment Short Course) strategy and with goals of curing 85% cure rate. To achieve 85% cure rate it is essential that all patients started on treatment should complete full course of treatment. To ensure treatment adherence DOTS was emphasized, where in each dose of treatment is given under the observation of health worker. Adaptation has given impressive results with higher treatment success, yet default continues to occur in certain situations and is a matter of concern [2, 3].

To improve treatment success rate it is necessary to understand the reasons for default after start treatment. Alcohol abuse is one of the leading causes for incomplete treatment for tuberculosis. Alcoholism is a social problem and it increases rate of forgetfulness, side effects to anti-TB drugs and

default rate [4, 5]. It is necessary to find out the real impact of alcohol abuse on the default rate of the tuberculosis treatment. This study was conducted with the aim to find the impact of alcohol abuse on the default of the tuberculosis treatment.

MATERIAL AND METHODS

Study design: This retrospective case control type of study was conducted in the Pandeet Dindayal Upadhyay Medical College, Rajkot, and Gujarat, India during the 2006-2008 after institutional ethical committee approval.

Defining case and inclusion criteria for case: in this study case was defined defaulter of the tuberculosis treatment. The case were selected as the subjects who were registered under RNTCP programme in the Rajkot district during January 2006 to December 2007 and defaulted in the tuberculosis treatment. RNTCP definition (A Tuberculosis patient who, at any time after registration has not taken anti-TB drugs for 2 months or more consecutively) and criteria were followed to identify the defaulter of tuberculosis treatment. Cases were enrolled by recalling them for treatment and home visit. Cases above the age of 15 years only were enrolled in the study after

informed and written consent. Cases below the age of 15 years were not included the study.

Defining control and inclusion criteria for control:

In this study Control was defined as the subject who has completed anti- tuberculosis treatment under RNTCP programme. The controls were selected as the subjects who were registered under RNTCP programme in the Rajkot district and completed treatment during January 2006 to December 2007. Controls were enrolled by recalling the subjects for follow-up and home visit. Controls above the age of 15 years only were enrolled in the study after informed and written consent. Controls below the age 15 years were not included in the study.

Systemic random selection method was used to select the 150 cases and 150 controls from the whole list retrieved after following the above inclusion and exclusion criteria.

Alcoholism: Alcohol abuse disorder patient were identified based on history given by the patient.

Data collection: Using structured interview questionnaires cases and control were interviewed. Statistical calculations and analysis was done by Microsoft excel 2007 and Epi info 7.0™ software.

RESULTS

In this study 150 cases (defined as default in tuberculosis treatment) and 150 controls (defined as patients with completed tuberculosis treatment) were interviewed. Out of 150 cases 38 (25.3%) were alcoholics; out of 150 controls 10 (6.66%) were alcoholics.

Difference in the alcoholics and non-alcoholic between case group and control group was statistically significant at 99.99% confidence interval (chi square value: 19.44, p value< 0.01). Odd ratio for alcoholism between cases and control was 4.75 (2.26- 9.95) that indicates in alcoholics patients (under the tuberculosis treatment) have 375% higher risk of being default than that of non-alcoholic patients.

Table 1: Sex wise distribution of alcoholism in cases and controls

Alcoholic	Cases (n=150)		Controls (n=150)	
	Male	Female	Male	Female
Yes	35 (30.97%)	3 (8.10%)	9 (8.91%)	1 (2.04%)
No	78 (69.03%)	34 (91.9%)	92 (91.09%)	48 (97.96%)
TOTAL	113	37	101	49

Out of 150 defaulter cases 113 were male and 37 were females; control group contained 101 male and 49 females [Table: 1]

Male: 30.97% (35 out of 113) male cases and 8.91% (9 out of 101) male controls were alcoholics. Difference between alcoholics and non-alcoholics was statistically significant between case and control group at 99.99 confidence interval (chi square value: 15.87, p value < 0.01). Odd ratio for male cases and controls was 4.58 (2.07- 10.12). It indicates in male alcoholics have patients under the treatment of tuberculosis have 358% higher risk of being default than that of non-alcoholic male patients.

Female: 8.10% (3 out of 34) female cases and 2.04% (1 out of 49) female controls were alcoholics. Difference between alcoholics and non-alcoholic was statistically not significant between case and control group (chi square value 1.75, p value = 0.18).

DISCUSSION

In the present study 25.8% defaulter (38 out of 150) cases were alcoholics. 16% (48 out of 300) patients were alcoholics.

Table 2: Comparison between the studies for alcohol abuse and defaulter of tuberculosis treatment

Study	Number of cases	Odds ratio
Gelmanova IY et al (2007)[6]	260	4.38
Bernard NM et al (2011) [4]	120	6.28
Kendell EA et al (2013) [5]	225	2.1
Present study	150	4.75

In this present study odd ratio was 4.75 for the risk assessment of alcoholic to be defaulter for tuberculosis treatment. Which was in the range of result of studies of Gelmanova et al (2007) and quite higher than the Bernard NM et al (2011). Although this was quite higher than the result of Kendel et al (2013). [Table: 2].

Difference in the odds ratio may because of variation of criteria for definition of alcoholism. Present study was conducted in Gujarat where alcohol is legally banned therefore there are chances subjects might have not disclosed the alcohol history.

In the present study alcoholism was not a found as a factor for treatment defaulter. This is because of

very low (4.86%, 4 out of 86) alcoholism rate was found in the female patients.

Alcohol increases side effects of the anti-tuberculosis drugs; forgetfulness in patients; social problems; impairs economic condition which may lead to noncompliance of treatment and make the patient defaulter.

CONCLUSION

Alcoholism is found significant cause of tuberculosis treatment defaulter; therefore at the time of registration under RNTCP programme careful history for the alcoholism should be taken, alcoholic patient should be put in high risk patient. These patients should be counselled, supported keenly observed to continue treatment.

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