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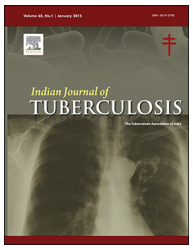

Original Article

Alcohol use disorders among pulmonary tuberculosis patients under RNTCP in urban Pondicherry, India

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ABSTRACT

Background: Alcohol use is implicated in a wide variety of diseases and disorders including TB.
Objectives: To study the prevalence and pattern of alcohol use among the PTB patients registered under RNTCP in urban Pondicherry and the association of various socio-demographic variables with alcohol drinking during treatment.
Methods: A cross-sectional study was conducted among 235 PTB patients from 6 randomly selected urban PHCs of Pondicherry from Jan 2013 to March 2014. Alcohol Use Disorder Identification Test (AUDIT) was used for screening the PTB patients for their severity of alcohol use. Data were entered in Epi-data v3.1 and was analyzed by SPSS v20. Chi-square test and multiple-logistic regression were used.
Results: Prevalence of alcohol use among PTB patients at the time of diagnosis was 59% and during treatment was 31.5%. Around 54% PTB patients had alcohol use disorders (AUD) during diagnosis, whereas the same during treatment was 26.4%. Among drinkers at the time of diagnosis ($n = 139$), 80% modified and 20% did not modify their alcohol use even after TB diagnosis. Male gender was significantly associated with alcohol use ($p \leq 0.001$). Univariate analysis showed that lower level of education, lower SES, unemployed/unskilled/semiskilled/skilled occupational group, and Category II were significantly associated with alcohol use among male patients ($p < 0.05$). Multivariate analysis showed that none of the variables were associated.
Conclusions: One-third of PTB patients were drinking alcohol during the treatment. Though 80% modified alcohol use after TB diagnosis, the rest 20% did not modify. Necessary interventions need to be planned to screen for alcohol use.

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1. Introduction

Tuberculosis continues to be a major public health problem in the world.[1] India is one of the high TB burden countries contributing to almost 1/4th of global TB cases. As per WHO estimated burden of tuberculosis in India in 2012, the incidence of TB was 176 per 100,000 and the prevalence was 230 per 100,000 population.[1]

Alcohol use is implicated in a wide variety of diseases, disorders and injuries, including TB.[2] The association of alcohol use and tuberculosis had been known for a long time, even before the aetiology of tuberculosis was known. Benjamin Rush as early as 1785 listed tuberculosis and pneumonia as infectious squeal of sustained heavy alcohol use.[3] Alcohol use significantly increases the risk of active TB.[2] This may be due to increased risk of infection related to specific social mixing patterns associated with alcohol use and also as a result of decreased immunity among the alcohol users. Jurgen Rehm et al.[4] found that heavy alcohol use strongly predicts both the incidence and adverse outcome of tuberculosis. Heavy alcohol use was found to be linked to altered pharmacokinetics of TB medication, social marginalization and drift, higher re-infection rate, higher default rate and development of multi-drug resistant TB. It has also been found that there is delay in diagnosis of TB among the TB suspects with the history of alcohol abuse.[5] In India, alcohol intake is one of the major risk factors for treatment non-compliance and mortality under DOTS (directly observed treatment, short-course) therapy.[6] Even though the ill effects of alcohol use are well known, health care providers in India do not routinely screen for 'alcohol use disorders' (AUD) while treating for TB. Screening for AUD among TB patients is routinely carried out in developed countries like Russia.[7]

Screening for alcohol disorders is expected to improve TB treatment outcomes by planning appropriate intervention. In the present study, Alcohol Use Disorders Identification Test (AUDIT) was used to screen the PTB patients for assessing their magnitude of alcohol use. The objectives were to study the prevalence and pattern of alcohol use among the pulmonary tuberculosis patients registered under RNTCP in urban Pondicherry and to study the association of various socio-demographic variables with alcohol drinking during treatment.

2. Materials and methods

This was a community-based cross-sectional study carried out between January 2013 and March 2014 in Pondicherry district. The total population of Pondicherry[8] is 12,44,464. Around 68% of populations in Pondicherry live in urban areas.

The sample size was calculated to be 235 by using the prevalence of alcohol use among tuberculosis patients, aged 15 years and above, and was 29% in urban area,[9] with relative precision of 20% and 95% confidence interval. The study was restricted to urban PHCs of Pondicherry. Six out of 12 urban PHCs[10] were selected randomly till the cumulative total of PTB patients of previous year satisfied the sample size necessary for the study. Inclusion criteria were PTB patients aged 15 years and above. Category IV tuberculosis patients were excluded. All the eligible consecutive PTB patients from selected six PHCs were included in the study. The location of these PHCs was scattered all over urban Pondicherry, thus this was expected to represent total PTB patients of urban Pondicherry. Eligible patients were interviewed in the Continuation Phase (CP) of their TB treatment. During the Intensive Phase (IP) of TB treatment, patients are frequently monitored by health worker. Thus during the IP, patient motivation to follow advice and adopt healthy lifestyle is high, study during the IP may falsely undermine the magnitude of alcohol use. Interviewing them during the CP of TB treatment may reflect the true picture of alcohol use pattern.

The study was approved by the Institute Ethics Committee. Demography details of eligible PTB patients were obtained from the TB treatment cards maintained for each patient in their respective PHCs. All the eligible TB patients were contacted at their place of residence. Adequate time was spent with each PTB patient to build up rapport with them, and informed consent was taken from participants before collecting information. The houses which were either locked or where the patient was not present at the time of the visit were revisited one more time at a later date. Patient who could not be contacted during the 2nd visit was not contacted further.

2.1. Study tools

A pre-tested interview schedule was used to collect information from the study participants' socio-demographic factors such as age, gender, education and occupation were obtained from the subject by personal interview. Education status was classified based on the Tamil Nadu Education Board.[11] Socio-economic status was classified using Modified Kuppusamy classification – 2012[12] for the urban areas. Occupation was classified using National Classification of Occupations, 2004.[13]

The Alcohol Use Disorder Identification Test (AUDIT)[14] was used to assess TB patients alcohol use status, and accordingly, alcohol dependence level was categorized as low risk, hazardous or harmful use and probable alcohol dependence. AUDIT has 10 items. Each of the items had a score ranging from 0 to 4; thus, the total score was 40. Aggregate score of less than 8 was interpreted as Low risk and score of 8 or more was considered to have Alcohol Use Disorder (AUD). AUD meant that the person's pattern of alcohol use was hazardous or harmful to his health (Score 8–19), or person probably suffers from alcohol dependence (Score ≥ 20).

2.2. Definitions

Ever Drinker: those who had consumed alcohol anytime in the past; *Current Drinker:* those who had consumed alcohol in the past one year; *Former Drinker:* those who had consumed alcohol before the past one year; *Never Drinker (Lifetime abstainers)*: those who had not consumed alcohol anytime in the past. In our study, following operational definitions were used. *Drinkers at the time of diagnosis:* PTB patients who consumed alcohol anytime during the period, one year before the date of interview to till the time of diagnosis; *Drinkers during treatment*: PTB patients who consumed alcohol any time after the diagnosis to till the date of interview.

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