

Factors associated with medical comorbid conditions in alcohol use disorders- preliminary findings from a general hospital setting in Bangalore, South India.

Priya Sreedaran^{1,*}, Bhuvaneshwari Sethuraman², Johnson Pradeep³

¹Assistant Professor, ²Senior Resident, ³Associate Professor, Dept. of Psychiatry, St John's Medical College, Sarjapura Road Bangalore-560034

***Corresponding Author:**

Email: drpriyasreedaran@gmail.com

Abstract

Background: Alcohol use disorders contribute significantly to global morbidity and mortality. Alcohol use disorders are also associated with presence of comorbid psychiatric as well as medical conditions. There is a need to study the factors associated with presence of comorbid medical conditions as this has important health implications.

Methods: A chart review of 57 men with alcohol use disorders in a general hospital setting in Southern India was conducted. Data extracted was analyzed to study association of presence of comorbid medical conditions with the following variables: age of individual, age of onset of use, average amount of alcohol consumed and presence of delirium tremens.

Results: Most individuals had comorbid medical conditions. Age of individual had a significant association with presence of comorbid medical conditions in alcohol use disorders. Lifetime history of delirium tremens tended towards a significant association with presence of comorbid medical conditions in Alcohol use disorders.

Conclusions: Individuals with longer duration of alcohol use disorders are more likely to be diagnosed with comorbid medical conditions. These findings have implications for management of alcohol use disorders

Keywords: Alcohol use disorders, Medical, Comorbid, Delirium tremens.

Introduction

Prevalence of alcohol use in India ranges from 20-40%.^(1,2) Trends reveal that these figures are rising.^(1,2,3) The effect of alcohol on an individual's health is harmful with worldwide research demonstrating that 3.8% of global deaths and 4.6% of global disability adjusted life years are attributable to alcohol.⁽⁴⁾ Disease burden is also closely associated with average volume of consumption of alcohol and around 25 chronic diseases and conditions in International Classification of Disease (ICD)-10 are completely attributable to chronic alcohol use.^(4,5)

While a favorable association between low alcohol use and ischemic heart disease, diabetes mellitus and ischemic stroke has been noted; even average alcohol use has been linked with increased risk of tuberculosis, epilepsy, fetal alcohol syndrome, lower respiratory tract infections and cirrhosis of liver¹⁰. Digestive tract conditions associated with chronic alcohol use include pancreatitis, cancers of nasopharynx, esophagus and alimentary system and alcohol liver disease.⁽¹¹⁾ Research has shown that there is an increased prevalence of hospital deaths for individuals with alcohol dependence and this increase is attributed to greater medical comorbidity.⁽¹²⁾ Medical comorbid conditions are also noted to worsen the prognosis of alcohol use conditions.⁽¹³⁾

General hospitals are important sites for delivery of psychiatric care to subjects with alcohol dependence.¹³ Studies in Indian medical settings have reported that prevalence of alcohol use disorders amongst patients

primarily presenting to emergency and other medical settings is as high as 20%.⁽¹⁴⁾ In emergency settings in South Asia, alcohol use has been associated with as high as 60% of subjects presenting with injuries, which is disproportionately higher than the alcohol use prevalence in the general population.^(15,16)

Thus general hospital settings could provide valuable data in assessing the interactions between alcohol use and medical comorbid conditions especially in the Indian context.

It is with this background that we describe findings from our study which has attempted to study the association between alcohol use and comorbid medical conditions.

Materials and methods

Aims: To study the association between alcohol use and comorbid medical conditions

Inclusion criteria: Consecutive charts of individuals with alcohol use disorders admitted from the period of January to June 2016 in the psychiatry ward of a general hospital in Bangalore, South India.

Exclusion criteria: Charts of those individuals with missing data of more than two variables of interest

Ethical considerations: Approval from Ethics committee was obtained prior to conducting this study. All data was entered in protected excel data sheets by first author and alphanumeric identifiers were given to each individual in order to maintain confidentiality.

Methods

We extracted data pertaining to age, marital status, religion, presence and type of medical comorbid conditions, age of onset of use of alcohol consumption and lifetime history of delirium tremens.

Statistical Analysis

Statistical analysis was performed using Statistical package for the Social Sciences (SPSS) version 16.0. Normality was calculated using Shapiro Wilk study. As

data was not normally distributed, we used Mann Whitney test to compare continuous variables and Chi-square test to find out the association between categorical variables.

Results

We reviewed a total of 57 charts and all these charts were of men. We separated the sample into two groups: those with medical comorbid conditions and those without.

Table 1: Distribution of socio-demographic variables between those with medical comorbid conditions and those without medical comorbid conditions

| N=57 | Medical comorbid conditions present (N=47) | Medical comorbid conditions absent (N=10) |
|-----------------------|--|---|
| Religion | | |
| Hindu | 37 (77.8%) | 9 (90%) |
| Christian | 10 (22.2%) | 0 |
| Muslim | 0 | 1 (10%) |
| Marital status | | |
| Married | 40 (84.8%) | 9 (90%) |
| Single | 6 (13.0%) | 1 (10%) |
| Separated | 1 (2.2%) | 0 |

The sociodemographic data of the sample shows that in both groups the majority were Hindu and married

Table 2: Type of medical comorbid conditions present

| | |
|---|------------|
| Alcoholic liver disease | 5 (10.63%) |
| Hematemesis | 5 (10.63%) |
| Pancreatitis | 3 (6.38%) |
| Gastroesophageal reflex | 2 (4.25%) |
| Gastritis | 2 (4.25%) |
| Hypertension | 7 (14.89%) |
| Diabetes | 3 (6.38%) |
| Coronary heart disease | 1 (1.75%) |
| Respiratory illness (COPD, Tuberculosis, Pneumonia, Asthma) | 4 (8.51%) |
| Anemia | 4 (8.51%) |
| Head injury | 1 (1.75%) |
| Amnestic syndrome | 1 (1.75%) |
| Alcohol induced dementia | 1 (1.75%) |
| Wernicke's encephalopathy | 1 (1.75%) |
| Skin lesions | 4 (8.51%) |
| Viral fever | 1 (1.75%) |
| Others(scrotal ulcer, abscesses etc) | 2 (4.25%) |

The medical comorbidities most commonly associated are hypertension, alcoholic liver disease, respiratory illnesses and anemia.

Table 3: Comparison between age, age of onset of dependence and average use of alcohol

| | Co-morbidity present | Co-morbidity absent | Mann Whitney U statistic | P |
|---------------------|----------------------------|-----------------------------|--------------------------|--------------|
| Age of individual | Median: 40 Range: 25-68 | Median:33.5 Range: 25-45 | 141.5 | 0.05* |
| Age of onset of use | Median: 19 Range: 10-40 | Median: 20.5 Range: 5-31 | 203.5 | 0.638 |
| Average drink | Median: 18 Range: 6-36 | Median: 12 Range: 5-60 | 122 | 0.113 |

Comparing the groups with and without medical comorbidities on the three parameters of- age of presenting to the hospital, age of onset of alcohol use and average amount of alcohol used per day showed

significant difference in the age of presentation to the hospital, with those having medical comorbidities being older to those without comorbidities.

Table 4: Chi-square test of association between presence of delirium tremens and presence of medical comorbid conditions

| | Comorbid present | Comorbid absent | Chi-square | df | P |
|--------------------------|------------------|-----------------|------------|----|------|
| Delirium tremens present | 19 | 1 | 3.351 | 1 | 0.06 |
| Delirium tremens absent | 28 | 9 | | | |

A lifetime history of delirium tremens tended towards significant association with presence of comorbid medical conditions

Discussion

Studies from India have noted a significant association of prevalence of comorbid gastro-intestinal medical conditions and cardiovascular conditions with presence of alcohol use disorders.^(7,17) Our findings are similar to these studies.^(7,17) While the high prevalence of gastrointestinal problems is expected, the prevalence of cardiovascular conditions with alcohol use disorders is an important finding. These findings will need to be further confirmed by case-control studies, comparing individuals with alcohol use disorders with matched controls. This is necessary as our study findings are in contrast to findings from Western studies which show lower regular levels of alcohol consumption associated with reduced prevalence of certain cardiovascular conditions while higher levels of consumption of alcohol being associated with greater risk of ischemic heart disease.⁽⁹⁾ Findings from Indian settings have demonstrated that men with alcohol dependence syndrome have lower rates of metabolic syndrome as compared to matched controls without alcohol dependence⁽¹⁸⁾ However, another study from Southern India indicated that persons with alcohol dependence who were being detoxified had lower heart rate variability as compared to healthy controls indicating autonomic neuropathy that could have cardiac consequences.⁽¹⁹⁾

Our study demonstrated anemia as a prominent comorbid condition. However the prevalence in our sample is lower than a study published in 2004 from

Haryana that showed a much higher prevalence of anemia in rural males.⁽²⁰⁾ This is similar to findings from western countries that have shown a reduced prevalence of iron deficiency anemia in those who consume regular amounts of alcohol as compared to those who don't consume alcohol.⁽²¹⁾ This is a finding that needs to be assessed in greater details using community based population studies on account of its health implications.

Findings from a study that examined associations between alcohol use and psychiatric comorbidity in general hospital setting in Delhi did not show any association between age of onset of alcohol use and age at which dependence developed with presence of psychiatric comorbid conditions⁽²²⁾ Our study did not show any relationship between age of onset of use of alcohol or average amount of alcohol consumed with presence of medical comorbid conditions. Our study however showed findings similar to that of Sarkar et al with respect to association between individual's age and presence of medical comorbid conditions⁽⁷⁾ Our study leads to the possible inference that older age of individual is more likely to be associated with comorbid medical conditions while early age of alcohol use or heavy consumption of alcohol might not have a significant relationship with presence of comorbid medical conditions.

Our study demonstrated that a lifetime history of delirium tremens tended towards significant association with presence of comorbid medical conditions. This

finding differs from Shu et al who did not find a significant association between complicated withdrawal and comorbid medical conditions as assessed by Charlson comorbidity index⁽²³⁾ This is an important inference as this is a possible additional negative prognostic factor associated with Delirium Tremens.

Limitations

The study limitations include limited sample size and cross-sectional design. This study focused only on patients admitted in psychiatry wards and those patients with alcohol use disorders who are admitted in other wards were not included, thereby possibly excluding patients with serious medical conditions. This study was also conducted over six months and hence prevalence rates of certain medical conditions like asthma which have seasonal variations were probably not adequately assessed. The strength of this study is a systematic assessment of comorbid medical conditions.

Conclusions

Older Individuals with alcohol use disorders are more likely to be diagnosed with comorbid medical conditions. Presence of lifetime history of delirium tremens also tended to have a significant association with presence of comorbid medical conditions. These are important factors that need to be considered while determining the prognosis in individuals with alcohol use disorders with comorbid medical conditions.

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