

Prevalence of alcohol dependence syndrome cases with and without delirium during the first phase of lockdown in Telangana

Aditya U¹, Vijay Kumar M², Sireesha Srinivasa Rao^{3*}

¹Post Graduate 2nd Year, ²Senior Resident, ³Professor, Dept. of Psychiatry, IMH, Osmania Medical College, Hyderabad, Telangana, India

Corresponding Author: Sireesha Srinivasa Rao

Email: s283572@gmail.com

Abstract

Objectives: To determine the prevalence, association of socio-demographic factors, medical comorbidities with delirium in alcohol dependence syndrome individuals hospitalized during the lockdown period.

Design: 667 alcohol-dependent patients attending the institute of mental health, Hyderabad during the 1st phase of lockdown were studied retrospectively with the help of hospital records.

Results: Out of 667 samples 266 individuals presented with delirium. There is no significance of sociodemographic factors on delirium except sex. There is a positive correlation between severity of dependence ($r=0.26$, $p=0.000$), number of drinks ($r=0.271$, $p=0.000$) per day, duration of intake of substance ($r=0.137$, $p=0.000$) with delirium. Individuals with medical comorbidity hypertension, both hypertension and diabetes have presented a greater number of delirium cases.

Conclusion: Current lockdown scenario is the first time we had faced. We found a greater prevalence of delirium in alcohol dependence cases which is a threat to the health care system. Hence further research in risk factors involving delirium presentation is needed. Stringent rules to control alcohol dependence to avoid a similar situation in the future and effective management of health care facilities are needed.

Keywords: Alcohol dependence syndrome, Prevalence, Delirium.

Introduction

Alcohol use is a common condition that has been associated with severe impairments in social functioning and medical problems. About 20% of the population had been noted to exhibit alcohol abuse during their lifespan.¹ Alcohol dependence syndrome is one of the most common and most researched illnesses among psychiatric disorders. In India, epidemiological studies have shown a prevalence rate of 68% for alcoholism.² In Telangana, it is about 53.9%.³ More than 50% of those with a history of alcohol abuse can exhibit alcohol withdrawal symptoms, on discontinuing or decreasing their alcohol use. However, only a few (3% to 5%) exhibits symptoms of severe alcohol withdrawal with delirium.¹ As a preventive measure to avoid an exponential increase in the number of COVID-19 cases, Govt. of India announced a complete lockdown from March, 23, 2020, which in turn led to forced abstinence for alcohol dependent individuals. This led to the surge of alcohol withdrawal cases. Hence, this study was carried out with cases reported during this lockdown period. In a state like Telangana, where there is high alcohol consumption, an insight into the matter of alcohol dependence cases, and its complications during abstinence gives directions to handle situations like this in the future.

Aim of the study

To estimate the prevalence of alcohol dependence syndrome cases with and without delirium during the first phase of lockdown in Telangana.

Objectives of the Study

1. To study the association between socio-demographic parameters and alcohol dependence syndrome with or without delirium
2. To study the association between medical comorbidities and alcohol dependence syndrome with or without delirium.
3. To study the association between the severity of alcohol dependence and delirium.

Materials and Methods

The study was conducted at the Institute of Mental Health (IMH), Erragadda, Hyderabad by convenient sampling which was a retrospective study. All patients who visited during the first phase of lockdown i.e from March 23, 2020, to April 15th, 2020 were enrolled in the study after they fulfill the inclusion and exclusion criteria.

Inclusion criteria

1. Male, Female.
2. All patients in the age group of 18 – 60 years, meeting diagnostic criteria of ICD-10⁴ for alcohol dependence syndrome (ADS)

Exclusion criteria

1. Co-morbid psychiatric disorders: schizophrenia, delusional disorder, anxiety disorders, and mood disorders including dysthymia.
2. Non-alcoholic delirium

Study procedure

Before conducting the study permission from administrative authorities of IMH and the institutional ethical committee

was obtained. It is a hospital record analysis study. Patients with a clinical diagnosis of alcohol dependence syndrome and its spectrum (withdrawal) as per ICD-10 and meeting the inclusion and exclusion criteria were included in the study. Socio-demographic details, history, general physical examination, and mental status examination was recorded on a semi-structured proforma designed for the study. The severity of alcohol dependence by Severity of Alcohol Dependence Questionnaire (SADQ) and severity of alcohol withdrawal by CIWA as per entered in the case sheets was noted. Our study was a retrospective study, gathering information from case sheets of our hospital. In our hospital, generally all ADS cases getting admitted into deaddiction, APCU wards will be assessed by a committee of PG, senior resident, assistant prof., & professor. Same procedure is followed for OP cases. In wards also pts. will be seen daily by PG, assistant prof. Severity of withdrawal symptoms will be assessed by using CIWA on daily basis by PG. Once the pt. got resolved from delirium about 7-10 days after admission, severity of ADS will be assessed, using SADQ by PG, supervised by assistant prof. The same will be documented in case sheets.

This data was compiled and analyzed by SPSS version 22, Chi-square, Student t-test, Spearman correlation. $P < 0.05$ was accepted as statistically significant.

SADQ has a high degree of test-retest reliability and a very good evidence of construct & concurrent validity⁵, consists of 20 questions to measure the severity of alcohol dependence. Each item is scored on a 4-point scale giving a scoring range of 0 to 60. It is divided into 5 sections like physical withdrawal symptoms, affective withdrawal symptoms, craving and relief drinking, typical daily consumption and reinstatement of dependence after period of abstinence. Maximum score: 60; scores greater than 30 correlates with clinicians' ratings of "severe alcohol dependence." Test-retest reliability of 0.85. Factor analysis yields single main factor accounting for 53 percent of variance. SADQ had been used in previous Indian studies.⁶⁻⁹

Clinical Institute Withdrawal Assessment for Alcohol, revised (CIWA-Ar)¹⁰ is the most objective and best-validated tool to assess the severity of alcohol withdrawal, which consists of 10 items. Zero to 7 points are assigned to each item, except for last item, which is assigned 0-4 points, with a total possible score of 67.

Results

A total sample of 667 Alcohol Dependence Syndrome individuals meeting both inclusion and exclusion criteria were taken into the study and values are noted in table.01.

Table 1: Prevalence of delirium

	Total Sample (667)	Prevalence
Delirium	266	39.88%
Without delirium	401	60.12%

Table 2: The Severity of alcohol dependence (SADQ) scores of the sample.

	SADQ		t value	p-value
	Mean	SD		
Males (481)	21.53	3.935	10.315	0.000*
Females (186)	18.20	3.193		

The mean score of SADQ (denoting the severity of alcohol dependence) was found to be 21.53 for males and 18.20 for females which were statistically significant.

Table 3: Showing sociodemographic factors of the study sample.

Associated factors	With delirium	Without delirium	Chi-square	P-value
Age				
21-30	20	20	1.97	0.57
31-40	64	95		
41-50	104	160		
51-60	78	126		
Sex				
Male (481)	216	265	18.17	0.000*
Female (186)	50	136		
Domicile				
Rural (89)	36	53	0.01	0.90
Urban (578)	230	348		
Religion				
Hindu (552)	225	327	1.04	0.59
Muslim (112)	40	72		
Others (3)	01	02		

Marital status				
Unmarried (33)	12	21		
Married (577)	236	341	2.48	0.47
Divorced (07)	03	04		
Widowed (50)	15	35		
Socioeconomic status				
Lower (341)	141	200		
Upper lower (264)	103	161	1.87	0.6
Lower middle (56)	21	35		
Upper middle (05)	01	05		
Upper (00)	00	00		

There is no association between socio-demographic parameters (except sex) and alcohol dependence with and without delirium.

Table 4: Showing medical comorbidities of the study sample.

Medical comorbidities	Delirium		Chi-square	P-value
	Present	Absent		
Nil	208	293	9.99	0.01*
Hypertension	42	62		
Diabetes	4	27		
Both	12	19		

Among medical comorbidities it was found that for person with hypertension or both hypertension and diabetes, delirium was more evident than diabetes or without any comorbidity, which was statistically significant.

Table 5: Association between severity of alcohol dependence with delirium.

SADQ	Delirium	
	R-value	0.260**
	P-value	0.000*

R = spearman correlation coefficient.

It was found that as the severity of dependence (SADQ) increases the probability of delirium increases, which was statistically significant. Most of the samples clustered at higher values of SADQ in those presented with delirium.

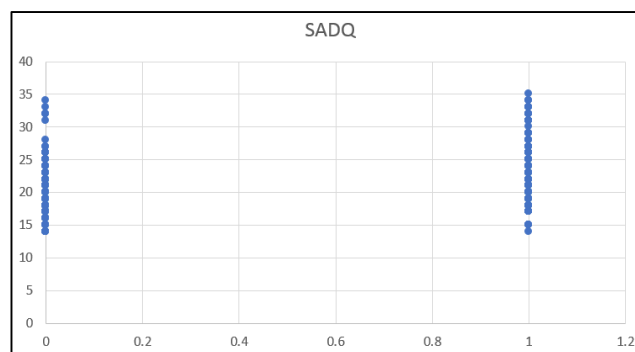


Fig. 1: Association between SADQ and delirium.

Table 6: Association between the type of substance with delirium.

Substance	Delirium		Chi-square	P-value
	Present	Absent		
Whiskey-W (cheap liquor)	22	30	9.33	0.02*
Toddy-T	92	185		
Both(W+T)	91	105		
W/T + Nicotine	61	81		

It was found that the prevalence of delirium was more in individuals consuming both whiskey + toddy (46.4%), whiskey/toddy with nicotine (42.9), whiskey alone (42.3%) compared to toddy alone (33.2%).

Table 7: Correlation between duration of intake of substance with delirium.

Duration of intake	Delirium	
	R-value	0.137**
	p-value	0.000*

As the duration of intake of substance increasing the prevalence of delirium was found to be increasing which was statistically significant.

Table 8: Correlation between the number of drinks/day with delirium.

Number of drinks/day	Delirium	
	R-value	0.271**
	p-value	0.000*

It was found a positive correlation between the number of drinks per day and the prevalence of delirium.

Table 9: Association between the history of seizures, withdrawal seizures, delirium with current delirium state.

History	Delirium		Chi-square	P-value
	Present	Absent		
Nil	191	332	13.952	0.007*
Seizures)	8	11		
Withdrawal seizure)	60	55		
Both	4	1		
Withdrawal delirium	3	2		

It was found that individuals with a history of seizures or withdrawal seizures or delirium have more propensity for withdrawal delirium compared to individuals without any significant history.

Discussion

Delirium Tremens (DT) falls in the most severe spectrum of alcohol withdrawal, which could potentially result in death unless managed promptly and adequately. In our study, the prevalence of delirium in alcohol dependent individuals were found to be 39.88%, which was pretty high compared to previous studies.^{1,11-13} It might be due to lockdown, only severe cases were able to come to the hospital whereas mild cases didn't attend the hospital. Similar to our finding, a study in Germany (2000), shown the proportion of patients with DT among patients with Alcohol Dependence Syndrome as 13.5%.¹² When compared, the impact of sociodemographic factors between with and without delirium, no significant differences.¹⁴⁻¹⁶ found, except gender. Among total of 667 patients, 216 males and 50 females presented with delirium. The difference in terms of delirium presentation is statistically significant ($P = 0.000^*$). Our study findings are in agreement with other studies (Kraemer et al. and Wetterling et al.)^{17,18} that there is no relation between age and development of delirium in alcohol dependent individuals. We found that individuals with medical co-morbidity hypertension (42 of 104) and both hypertension & diabetes (12 of 31) have presented a greater number of delirium cases compared to diabetes alone (4 of 31), without any comorbidity (208 of 503), which was statistically significant ($p = 0.01^*$) ($X^2 = 9.9$). Earlier one study found elevated blood pressure as a risk factor for delirium.¹⁸ (Ferguson et al (1996)). We found a positive correlation between the severity of alcohol dependence and withdrawal delirium ($R = 0.260$ and $P =$

0.000^*) - implies that as the severity of dependence increases, the probability of delirium presentation also increases, which is in line with a study by Sarkar et al¹⁴

finding of continuous drinking as a risk factor for delirium. Most of the samples clustered at higher values of SADQ in those presented with delirium. Individuals with prior history of seizures (8 of 19) or alcohol withdrawal (67 of 125) were associated with an increased risk of delirium compared to individuals without any past history (191 of 523) which was statistically significant ($X^2 = 13.95$ and $P = 0.007^*$). Our findings support the results of prior studies that have found an increased risk of delirium in patients with a prior history of alcohol withdrawal seizures or delirium^{12,20-22} (Schuckit et. al, David A et. al, Goodson et. al, Wright T et. al). A similar finding was found in a study by Sarkar et al ($X^2=21.6$, $P=0.001$). Individuals consuming both toddy and whiskey (cheap liquor) (46%) has presented more in number with delirium than individuals taking either toddy or whiskey with nicotine (42%) or whiskey (cheap liquor) alone (42%) or only toddy (38%) with $X^2 = 9.33$ and $P = 0.02^*$. Even though consumption of toddy is more in our state, delirium presentation is more in individuals consuming cheap liquor because it contains more amount of ethanol and trace alcohol (methanol) ultimately leading to complications with abstinence. A positive correlation was found between the duration of intake of substance in years and the number of drinks per day with delirium, using Spearman correlation coefficient [($R=0.137$ and $P = 0.000$) ($R=0.271$ and $P = 0.000$) respectively]. This finding was

against T. Wetterling et al. in which they found no correlation.¹⁸ A study by Sarkar et al found a positive correlation between the number of drinks per day with delirium ($t=-2.99$, $P=0.004$).¹⁴

Limitations

The current study is a retrospective study, gathering information from case sheets presented to the hospital setting and period of observation was during the lockdown, which was the first time that we had ever faced. Hence there might be a chance of information bias, recall bias. As the sample taken in the study are of severe cases presented to the hospital, we can't attribute the prevalence of delirium to the general population.

Conclusion

DT is a fatal complication of severe alcohol dependence syndrome. Due to its high mortality and various associated complications, prevention and identification of the condition are needed. In the present study, a history of withdrawal (complicated or uncomplicated), type of substance, duration of substance intake and the number of drinks per day, and the presence of medical comorbidities emerged as significant clinical predictors of delirium. Recognizing individuals with a history of alcohol abuse help to prevent the progression of withdrawal symptoms. Our findings provide insight into the prevalence of delirium in alcohol dependence syndrome and its health burden in our state.

Recommendations

Further, a detailed follow-up study helps in better understanding the risk factors for the development of delirium in alcohol dependence syndrome cases. There is a need for stringent policies to curb excessive alcohol consumption in our state. The US Preventative Services Task Force recommends screening individuals age 18 years or older involved with risky drinking and engaging these individuals with behavior therapy and interventions to decrease alcohol misuse. Strengthening the primary health care system, availability of deaddiction centers at all district levels will help to tackle a situation like this in the future.

Conflict of Interest

None.

Source of Funding

None.

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