



ORIGINAL RESEARCH PAPER

Psychiatry

PREVALENCE AND OUTCOMES OF DELIRIUM TREMENS IN CONSULTATION-LIAISON PSYCHIATRY

KEY WORDS: Delirium Tremens, Prevalence, Complicated Alcohol Withdrawal, Mortality

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ABSTRACT

Alcohol Withdrawal is a cluster of symptoms, behaviors and/or physiological features, varying in degree of severity and duration, that occurs upon cessation of use of alcohol. Delirium Tremens, is a disturbance of attention and awareness developing in a short period of time with fluctuations in consciousness, associated with cognitive disturbances. Complicated Alcohol Withdrawal, i.e., presence of delirium or convulsions or both, is a severe manifestation of alcohol withdrawal. Symptoms begin within 6-8 hours after last consumption of alcohol, peak after 72 hours and resolve in 5-7 days of cessation. Mainstay of treatment of Alcohol withdrawal is administration of benzodiazepines. In Delirium tremens, intramuscular antipsychotic medications can be administered. This study aims to assess the prevalence of Delirium tremens and the outcomes of management and highlights the importance of early management of Delirium tremens.

INTRODUCTION

According to ICD 11, Alcohol Withdrawal is a clinically significant cluster of symptoms, behaviors and/or physiological features, varying in degree of severity and duration, that occurs upon cessation or reduction of use of alcohol in individuals who have developed alcohol dependence or have used alcohol for a prolonged period or in large amounts.^[1] Alcohol withdrawal is usually characterized by tremulousness, sleep-wake cycle disturbances, autonomic hyperactivity, psychomotor agitation, and anxiety.^[1] Withdrawal may also be associated with delusions, perceptual disturbances, or seizures.

Delirium Tremens, occurring in severe alcohol withdrawal, manifests as a disturbance of attention and awareness developing over a short period of time with fluctuations in consciousness through the day, and may be associated with cognitive disturbances.^[7] Clinical features of delirium include acute onset and fluctuating course; disturbance of consciousness, arousal, and awareness; attention disturbances; disorientation; cognitive disturbances including memory impairment and executive dysfunction; perceptual disturbances; disorganized thinking; delusions; psychomotor agitation (hyperactive delirium); sleep-wake cycle disturbances and neurological signs.^[7] Complicated Alcohol Withdrawal, i.e., presence of delirium or withdrawal seizures or both, is a severe manifestation of alcohol withdrawal syndrome^[2], with mortality as high as 13.4%.^[5] If left untreated, the mortality in Delirium tremens can be as high as 37%.^[9]

Symptoms of withdrawal usually occur after acute cessation of alcohol consumption which results in sudden reduction in the blood alcohol levels. Symptoms begin within 6-8 hours after last consumption of alcohol, peak after 72 hours and typically resolve in 5-7 days of cessation.^[2] Delirium tremens begins within 8 hrs-3 days after onset of withdrawal symptoms and typically resolve within 1-8 days.^[2] Withdrawal seizures and hallucinations in clear sensorium may occur within 12-48 hours after the last consumption.

Several risk factors, such as amount and duration of alcohol consumption, past history of complicated withdrawal, abnormal liver function, comorbid infections or medical conditions and electrolyte abnormalities have been identified for developing complicated withdrawal states.^[2] Autonomic hyperactivity, due to upregulation of Glutamate

receptors by chronic alcohol use, often leads to cardiovascular collapse which increases the risk of mortality in complicated withdrawal.^[8]

Mainstay of treatment of Alcohol withdrawal is administration of Benzodiazepines, via oral or injectable routes, in a fixed-dose or symptom triggered regimen.^[3] In complicated withdrawal, intramuscular antipsychotic medications can be administered along with benzodiazepines.^[3]

MATERIALS AND METHODS

Study Design: Observational, Cross-sectional Study

Study Period: 6 months

Sample Size: 105 patients admitted in a Tertiary care hospital

Inclusion Criteria

- Age: Above 18 years
- Signed consent from the patient or a responsible caregiver in a language best understood by them
- Patients admitted in a Tertiary Care Hospital referred to Department of Psychiatry in Consultation-Liaison in view of Alcohol Withdrawal

Exclusion Criteria

- Age: Below 18 years
- Patients or caregivers who did not give their consent to be a part of the study
- Patients in delirium who did not have history of alcohol consumption

Tools Used

Confusion Assessment Method

- Standardized tool for screening of delirium.
- 4 items (Acute Onset & Fluctuating Course; Inattention; Disorganized Thinking; Altered Level of Consciousness) marked as Absent (0) or Present (1)
- CAM is diagnostic of Delirium based on the CAM algorithm: presence of acute onset or fluctuating course AND inattention with EITHER disorganized thinking OR altered level of consciousness.^[4]

Study Procedure

This research was cross-sectionally carried out in patients in the inpatient setting of a Tertiary Care Centre over 6 months. Prior approval by the Institutional ethics committee was obtained. 105 patients who met the criteria for inclusion were enrolled in the study after obtaining a written informed consent by a responsible caregiver. Demographic and

clinical data of the patient, including presence of alcohol withdrawal seizures and a detailed substance history was collected using a semi-structured proforma. Confusion Assessment Method (CAM) tool was applied as a delirium screening tool for assessing the presence of Delirium tremens. Patients were observed and analysed and the most commonly occurring symptoms were recorded. Outcomes of management were assessed for any relation between treatment initiation and mortality of the patients.

RESULTS

During the period of assessment, 105 patients were referred to Department of Psychiatry in view of Alcohol withdrawal, most commonly from Department of Medicine or Surgery, out of which 98% (n=103) were Males and 2% (n=2) were Females. (Figure 2)

Analysis of the age distribution reveals that the largest age group is 31-40 years, accounting for one-third (33%) of the population, while the smallest age group is those over 60 years, representing 10%. The intermediate age groups, 41-50 years and 51-60 years, account for 29% and 15% of the population, respectively, whereas the 21-30 years group makes up 13%. (Figure 1)

Detailed history was recorded, Mental status examination was conducted to evaluate neuropsychiatric symptoms and presence of withdrawal seizures was noted. CAM tool was applied on patients to check for the presence of delirium by assessing various cognitive function domains.

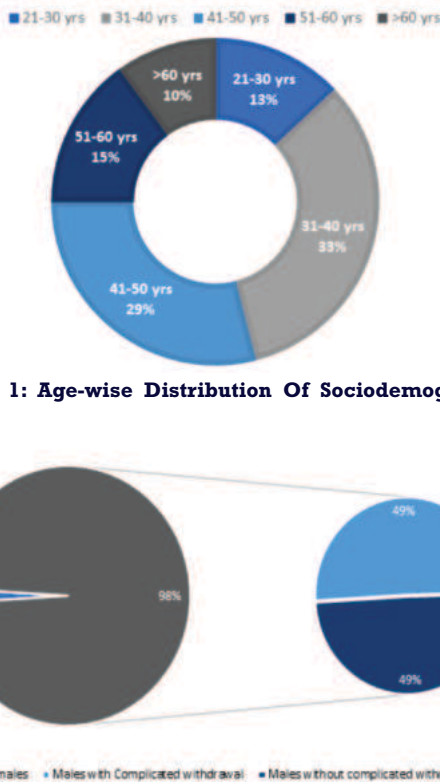


Figure 1: Age-wise Distribution Of Sociodemographic Data.

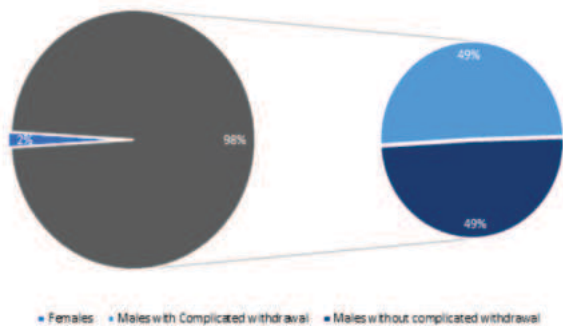


Figure 2: Sex-wise Distribution Of Sociodemographic Data.

Out of 105 patients, 49% (n=51) patients were found to have Complicated Alcohol withdrawal, out of which, 40% (n=42) had Delirium Tremens only, 4% (n=4) had Withdrawal seizures only, 5% (n=5) had both Delirium tremens and Withdrawal seizures concomitantly. (Figure 3)

Demographic analysis of patients with Complicated Alcohol Withdrawal revealed a mean age of 40-45 years (42.4y), all of whom were Males.

Table 1 Depicts The Most Commonly Occurring Symptoms That Were Observed In The Present Study.

Table 1: Commonly Occurring Symptoms In Study Subjects

MOST COMMON SYMPTOMS	OTHER SYMPTOMS OBSERVED
Disorientation	Nausea/Vomiting
Tremors	Hyperthermia
Auditory Hallucinations	Auditory/Tactile Hallucinations
Sleep-wake cycle disturbances	Agitation
Withdrawal seizures	Hyperreflexia
Autonomic hyperactivity	Paranoia
Anxiety	

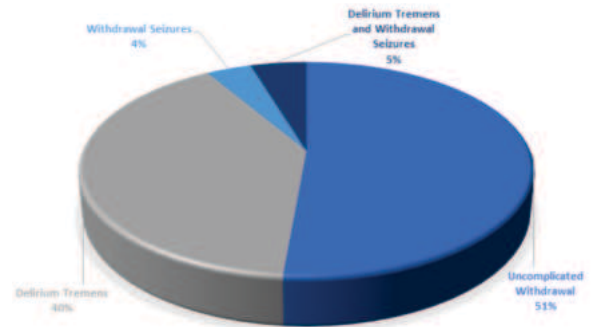


Figure 3: Diagnosis Wise Distribution Of Study Subjects.

Patients that were initiated on treatment on Day 1 of onset of Delirium tremens had an average duration of 4 days of alcohol withdrawal, all of whom recovered from the withdrawal state. Patients that were initiated on treatment on or after Day 2 of onset of Delirium tremens had an average duration of 7 days of alcohol withdrawal, out of which 2 deaths were recorded, mortality being 3.92%. (Figure 4, Figure 5)

Mainstay of treatment initiated were Benzodiazepines (Lorazepam or Chlordiazepoxide), in a Symptom Triggered Treatment regimen. No significant difference in duration of recovery was seen in patients that were given antipsychotics as adjunctive to benzodiazepines, but they contributed to resolution of sleep-wake cycle disturbances in these patients.

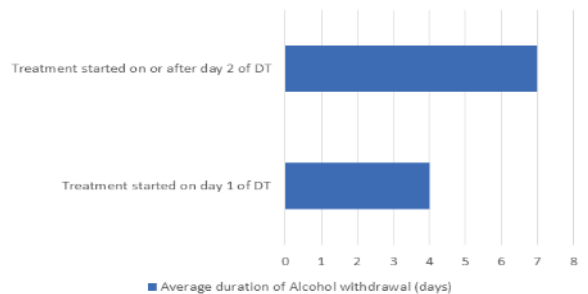


Figure 4: Average Duration Of Alcohol Withdrawal In Delirium Tremens Patients

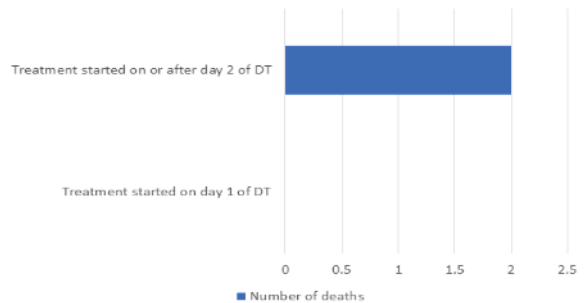


Figure 5: Mortality In In Delirium Tremens Patients

DISCUSSION

The findings of the present study were in concordance to the literature available from various research studies available.

In a study conducted in 2013 in 112 patients, Grover et al found a mortality rate of 13.4%, much higher than the results of this study (3.92%), although the mean duration of Delirium tremens was found to be similar i.e., 4 days, and concluded that patients with delirium tremens more often have delusions and thought process abnormality.^[6]

The presence of delirium tremens at the time of admission is a risk factor for increased mortality^[10], reiterating the correlation between autonomic hyperactivity and mortality. Other risk factors identified were chronic pathologies other than liver disease, and the need for assisted ventilation or presence of pneumonia.

In 2017, Sarkar et al studied 80 patients for the factors associated with development of alcohol withdrawal delirium which included heavy drinking, continuous pattern of drinking, past history of delirium, alcohol induced psychosis, and presence of cognitive deficits.^[8] this emphasises the role of several underlying risk factors which may have played an essential role contributing to the development of Delirium tremens.

In 2021, Grover et al conducted a systematic review of Delirium research in India, which reiterates the role played by underlying medical and surgical conditions in precipitating Complicated withdrawal.^[6] Benzodiazepines are the mainstay of treatment of Complicated Withdrawal and that Symptom triggered treatment regimen reduces doses required and duration of treatment as compared to the traditional fixed dose regimen.^[3]

CONCLUSION

Delirium Tremens formed a significant share of patients referred in view of Alcohol withdrawal. Several risk factors, including advancing age, contribute to the precipitation of Delirium tremens, and must be identified early to reduce morbidity and mortality in patients. Early intervention helps in reducing the severity of autonomic hyperactivity in complicated withdrawal, thus preventing cardiovascular collapse, and reducing the mortality.

Early detection of patients of Delirium tremens helped in early initiation of treatment, early resolution of withdrawal, shorter hospital stays and reduction of overall costs as well as reducing the mortality associated with the same. Benzodiazepine administration contribute to early resolution of withdrawal, and adjunctive antipsychotics contribute to resolution of sleep-wake cycle disturbances in these patients.

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