Original Article

A Comparative Study of Clinical Profile, Metabolic Parameters and Outcome of Patient Among Subtypes of Alcohol Dependence Syndrome in Tertiary Level Hospital of Kathmandu Valley

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ABSTRACT

Introduction: Alcohol is a legally allowed substance used for recreation associated with harmful health consequences both on using it and trying to quit (withdrawal phase). Many patients of alcohol dependence are brought to hospital or emergency in withdrawal phase and require intensive treatment. It's associated with life threatening condition and associated with occurrences of seizures and confusion. Based on severity, it can be subtyped and managed differently. The study tries to compare and contrast the subtypes of withdrawal phases of alcohol in terms of clinical, outcome and metabolic parameters

Materials and Methods: This is a cross-sectional study of all patients diagnosed as alcohol dependence syndrome admitted over a period of two years (June 2016 to June 2018) in psychiatric ward of KIST medical college and teaching hospital. It's divided into two phase namely complicated and uncomplicated phase and clinical, outcome and metabolic parameters are compared and contrasted.

Results: Out of 166 patients studied, 54% of the patients were diagnosed of complicated withdrawal features. Significant changes were noticed in increase duration of stay, low level of platelets and potassium and SGPT level in complicated group compare to uncomplicated group. Mortality was not seen in any of the group

Conclusions: Patients can be treated in ward setting successfully and if the diagnosis is of complicated withdrawal then metabolic parameters like potassium, platelet level has to be taken into consideration. Complicated withdrawal features increase the chance of morbidity and increase duration of stay.

Keywords: Alcohol; Alcohol dependence; Alcohol withdrawal; Delerium Tremens

INTRODUCTION

Alcohol is a legally allowed substance that is taken for recreation.[1,2] In the context of Nepal, its availability is rampant and use of branded as well as homemade alcohol without strict system of monitoring and distribution is a common practice.[3-6] Many people who fall into addiction patterns don't know that there are medical help available to quit alcohol and only land in hospital when they have other medical co-morbidities.[7] Many are forcefully kept in rehabilitation centers for long duration with poor monitoring and no supervision by doctors.[8] There have been reports of mishandling of clients, abuse and death in rehabilitation centers secondary to violence and medical co morbidities.[9] Few are brought to emergency during withdrawal phase when they start to behave in a bizarre way and needs immediate help. Many patients and family members then got to know about treatment and help to quit alcohol. Patient with complicated withdrawal features has been associated with increased risk of morbidity and mortality and has high likelihood of treatment in inpatient settings.[10] Clinical and metabolic parameters are also different in comparison to uncomplicated withdrawal cases. This study tries to focus on hospital based inpatient management of patient admitted in psychiatric ward with definite diagnosis of alcohol dependence and comparing and contrasting clinical and metabolic profile among two subtypes of alcohol withdrawal syndromes namely complicated and uncomplicated withdrawal syndromes.

MATERIALS AND METHODS

This is a cross-sectional study of all patients diagnosed as alcohol dependence syndrome admitted over a period of two years (June 2016 to June 2018) in psychiatric ward of KIST medical college and teaching hospital. All patients admitted in the ward regardless of the age and gender meeting the criteria for alcohol dependence were enrolled in the study. Exclusion criteria were patients with dependence on other psychoactive substances except for nicotine and those with a primary diagnosis of other psychiatric disorders. Patient diagnosed of alcohol dependence syndrome admitted in medical ward or directly in ICU during the study period has not been included in the study. There were a total of 169 patients. Three patients discharged on LAMA (left against medical advice) on the same day were not included in the study. Patients were broadly classified into two groups as alcohol dependence with complicated withdrawal and alcohol dependence with uncomplicated withdrawal. Complicated withdrawal was categorized as patients with features of Delirium tremens, alcoholic hallucinations, withdrawal seizures and features of Korsakoff's psychosis and Wernicke's encephalopathy.[11] Uncomplicated withdrawal was features of anxiety, sleep disturbances, sweating, tremors and cognitive features(poor attention, concentration) without developing DT or withdrawal seizures.[11]

Patients admitted in the ward were diagnosed based on ICD-10 criteria[12] and during the stay were evaluated by at least two qualified Psychiatrists. The Statistical package for social sciences (SPSS) Windows version 21 was used to analyze the data (SPSS Inc., Chicago, IL, USA). For summarizing the data (both socio-demographic and clinical), mean and standard deviations were performed for continuous data. Discrete data were expressed in number and percentage. Chi-square test/Fisher exact test was used to analyze categorical variables to know the differences between patients having uncomplicated withdrawals and complicated withdrawals. Independent sample t-test was used to compare the continuous variables between patients having uncomplicated and complicated withdrawals.

RESULTS

Out of 166 patients, 153 patients were of male gender (n=141; 92.2%) and mean age in years was 41.39 (SD-10.41). During the study period of two years, 3 patients were admitted twice and 1 was admitted three times. In the study, each patient is taken as different discrete patient due to difference in clinical and metabolic parameters.

Out of total 166 patients, 90(54.2%) were diagnosed of complicated subtype of alcohol dependence where as rest were diagnosed of Uncomplicated withdrawal. Out of 90 cases of complicated alcohol withdrawal, 42(46.6%) had withdrawal seizures, 36 (40.0%) had delirium tremens and 12 (13.3%) had both sets of symptoms in their presentation. Mean duration of hospital stay was 8.67 days (median stay was 8 days) and 129 (77.7%) patient had routine mode of discharge, and 3 (1.8%) patients were referred to ICU after being admitted to the ward.

METABOLIC PARAMETERS

Out of 166 patients, around 10% of the patients were treated without investigations as they couldn't afford investigations. Remaining patients had basic tests as shown in table 1.

Table 1: Various laboratory findings done in the study populations

Investigation	Number of patients (n)	Mean value	SD
Bilirubin (T)	146	1.51 mg/dL	1.10
Bilirubin(Direct)	146	0.83 mg/dL	3.61
SGOT	149	124.70 IU/L	110.43
SGPT	148	97.18 IU/L	71.71
ALP	137	110.28 U/L	59.21
Albumin	113	4.32 gm/dL	4.12
Sodium	158	138.98 mEq/L	5.95
Potassium	158	3.54 mEq/L	0.56
Platelets	153	201725.49/ cumm	74125

Mean Sodium and potassium level was 139.24meq/l and 3.54 meq/l respectively. Mean value of liver function test viz, SGOT, SGPT, Bilirubin (Direct and total), ALP and serum albumin are given in the (table no 1)

Among the significant changes noted, low potassium level of 3.5 was seen in 70 patients(42%) and platelet level less than 150000 was seen in 37(22.3%) of the patients where as if value of 150,000 was considered 33.3% i.e one third of the patient with alcohol withdrawal had borderline to low level of platelets. SGOT/SGPT ratio came as 1.28.

The clinical and metabolic profile of patient with and without complicated withdrawal dependence, were compared and contrasted esp. focusing on clinical and metabolic profile. There was significant change noted in mean potassium, platelet, duration of stay, SGPT level. The details have been given in the table below (Table no 4,5,6)

Table 2: Platelet value among complicated and uncomplicated alcohol dependence syndrome

Diagnosis	Platelet level (/cumm)		
	< 150,000	≥150,000	Pearson chi-square 13.95 P value- 0 .91
Complicated withdrawal	51	38	
Uncomplicated	19	50	

Table 3: Potassium value among complicated and uncomplicated alcohol dependence syndrome

Diagnosis	Potassium (mEq/L)		
	< 3.5	< 3.5	Pearson chi-square- 13.95 P value- 0 .000
Complicated withdrawal	51	38	
Uncomplicated	19	50	

Table 4: Mean duration and other laboratory parameters among complicated and uncomplicated alcohol dependence syndrome

Category	Complicated	Uncomplicated	T and P value
Age of patients	40.94 years	41.91years	.59/0.55
Mean duration of stay	9.63 days	7.53 days	2.98/0.004
Potassium	3.39 mEq/L	3.72 mEq/L	3.67/0.000
Sodium	1 3 8 . 3 9 mEq/L	139.66 mEq/L	1.0/0.32
SGOT	148.71 IU/L	111.82 IU/L	1.9/0.47
SGPT	109.83 IU/L	71.06 IU/L	2.26/0.02
Platelet	183,270 / cumm	224, 794 /cumm	3.47/0.001
Albumin	3.64 gm/dL	3.90 gm/dL	1.69/0.09

DISCUSSION

The average age of patient with alcohol dependence and predominance of male gender (92%) were consistence with other studies done in Nepal. Though number of female alcohol use and dependence has increased, the number of male gender has always out number females. Similar study done in TUTH, Nepal[13] had 90% of male patient and average age was 39.9 +/- 9.4 years which was similar to our study where average age was 41.39(SD-10.41).

We had 54 % of patient admitted in our setting had complicated withdrawal and similar findings were found in other studies.[13] As per Dhungana et al[13], complicated withdrawal features were seen in 52 % of the admitted patients with diagnosis of alcohol dependence.

Out of clinical profile of patients with complicated withdrawal feature, 46% had withdrawal seizures. The pattern of seizure was generalized tonic-clonic type. As this study has only included inpatient cases and are usually of serious withdrawal features, its findings are consistent with studies that has only included subjects with moderate to severe withdrawal symptoms.[14,15]

Average duration of treatment in inpatient setting was similar to other studies. In study done by Dhungana et al it was 13 days.[13] The difference in admission duration is less compare to rehab centers. This also reflects that majority of inpatient centers focus on alcohol withdrawal detoxification and less emphasis on counseling services or motivational therapy.

The patient requiring ICU care was just 1.8 % with no mortality in two year study period. This is a very good result compare to other studies. However it's also due to type of patient selection in psychiatry ward. Patient with head injury, liver failures, other co-morbid condition are admitted in medicine ward and in ICU setting which will be admitted there directly from emergency department.[10,16] Regarding metabolic parameters as a whole, low level of platelet count and potassium level was seen which was consistent with other similar studies.

Significant changes were noticed in increase duration of stay, low level of platelets and potassium and SGPT level in complicated group. This finding is consistent with outcome from a systemic review and meta analysis which have found initial high level of SGPT, low level of platelets and potassium with risk factors for developing Delirium tremens and developing complicated withdrawal features.[17]

CONCLUSIONS

Patients can be treated in ward setting successfully and if the diagnosis is of complicated withdrawal then metabolic parameters like potassium, platelet level has to be taken into consideration. Complicated withdrawal features increase the chance of morbidity and increase duration of stay.

LIMITATION OF THE STUDY

Rating scales and tools are not used and prospective changes in metabolic parameters are not compared. Serious cases of dependence directly admitted in ICU are not included in the study. Only inpatient patient for short duration is studied so outcome can't be compared for longer duration. Cases of mild withdrawal features treated in OPD basis are not included in the study. Future studies with application of rating scales and compare of serial metabolic profile will give the better picture.

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