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General Medicine

A STUDY OF CLINICAL PROFILE OF PATIENTS WITH NEW ONSET ALCOHOL RELATED SEIZURES.

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ABSTRACT

Aim: To study the clinical profile of patients with new onset alcohol related seizures (ARS)

Materials and Methods: This was a prospective, hospital based, observational study of 50 consecutive patients without a prior diagnosis of epilepsy presenting with seizures related to alcohol intake, to either emergency room or out-patient department, Department of General Medicine, SVS Medical College, Mahabubnagar, Telangana state, between October 2015 to September 2017. An informed and written consent was taken from the patient or immediate responsible attendant. Detailed history including the personal and family history was obtained from all patients. AUDIT scoring was done in all patients. Detailed examination findings were noted down. EEG and CT Scan Brain was done in all patients. MRI Brain was done when required.

Results: A total of 50 patients with alcohol withdrawal seizures were included in the study of which 24(48%) were males and 26(32%) were females. Majority of the patients presented with seizures within 6 days following the last bout of alcohol (85%). All the 50(100%) patients presented with generalized tonic clonic seizures (GTCS) and 8(16%) progressed in to status epilepticus. Withdrawal symptoms were present in 24(48%) patients. Family history of seizures in the first degree relative was present in 4(8%) patients. CT evidence of cortical atrophy was present in 10 (20%) patients. EEG suggestive of seizures was present in 15 (30%) patients.

Conclusion: There was a slight female preponderance of alcohol related seizures in this study. Majority presented within 6 days after the last bout of alcohol. All presented with GTCS. EEG and CT Scan Brain reports were normal in majority of the patients.

KEYWORDS : Alcohol use disorders identification test. Electroencephalograph (EEG), magnetic resonance imaging, Alcohol related seizures.

INTRODUTION

Morbus convivialis or "disorder related to partying" was recognised by Romans and even acknowledged by Hippocrates. Huss introduced the term *Alcoholismus Chronicus* and showed that alcoholics may have seizures after prolonged intoxication, many centuries later after Hippocrates[1]. Subsequently, the relation between the two pathologies became the object of various interpretations (for example, genetic links between criminality, epilepsy, and alcoholism have been proposed.) (hauser 1990). Although the ideas are now outdated, the fact remains that the relationship between the two pathologies is complex. The existence of chronic epilepsy related to alcohol is generally accepted in France and some European countries but has been given little or no recognition by the international community[2,3,4,5].

AWS (alcohol withdrawal seizures) is a well known symptom complex of tremulousness, hallucinations, seizures, confusion, psychomotor and autonomic overactivity. Although a sustained period of chronic inebriation is the most obvious factor in the causation of these symptoms, they become manifest only after a period of relative or absolute abstinence from alcohol, hence the designation, abstinence or withdrawal syndrome. In the setting of alcohol withdrawal either as relative or absolute abstinence, following a period of chronic inebriation, convulsive seizures are common. More than 90% of AWS occur between 7 to 48 hour period following cessation of drinking with a peak incidence between 13 to 24 hours. During the period of seizure activity, the EEG is usually abnormal but it reverts to normal in a matter of days, even though the patients may go on to develop DT (delirium tremens). During the period of seizure activity and for days afterwards the patient is unusually sensitive to stroboscopic stimulation; almost half the patients respond with generalised myoclonus or convulsive seizures[6].

Alcohol consumption, one of five most important risk factors for the global burden disease and disability [7,8] has been shown to be associated with epilepsy[9]. Numerous studies have examined the complex relationship between alcohol consumption and epilepsy, with the main focus on alcohol-induced seizures due to withdrawal[10,11]. Historically, several mechanisms have been suggested to play a role in the development (i.e., etiology) of AW(alcohol withdrawal).For example, researchers initially thought that withdrawal might be caused by nutritional deficiencies[12,13] and that some complications of withdrawal (e.g., seizures) might result directly from alcohol use or intoxication[14]. Although alcoholic patients exhibit many metabolic and nutritional disturbances overwhelming laboratory and clinical evidence now indicates that the constellation of signs and symptoms known as AW are caused by interrupting the constant exposure of the CNS to alcohol. The hypothesis that withdrawal occurs as a result of "insufficient" alcohol intake or abstinence in dependent patients rather than because of nutritional deficiencies was supported by and early study of men who received large daily doses of alcohol [18]. The study participants, who also were well fed, each consumed upto almost 30 standard drinks per day for up to 3 months. Upon abstaining from this alcohol intake, these men invariably developed withdrawal symptoms.

AIMS AND OBJECTIVES: To study clinical profile of patients with new onset alcohol related seizures.

MATERIALS:

This was a prospective, hospital based, observational study of 50 consecutive patients without a prior diagnosis of epilepsy presenting with seizures related to alcohol intake, to either emergency room or out-patient department, Department of General Medicine, SVS Medical College, Mahabubnagar, Telangana state, between October 2015 to September 2017. An informed and written consent was taken from the patient or immediate responsible attendant. An institutional ethics committee approval was obtained.

INCLUSION CRITERIA: All patients greater than 15yrs of age presenting to medicine OPD/Ward and emergency/ casualty, SVS Medical college, Mahabubnagar, with an episode of seizures included.

EXCLUSION CRITERIA: All patients who had a well known provoking cause of seizure (E.g. Subdural hematoma, dyselectrolytemia and hypoglycemia) other than alcoholism, CNS infections, head injury, known cases with space occupying lesions, patients with other substance abuse were excluded from study.

A detailed personal history regarding the duration of alcohol intake, Type of alcohol used, amount consumed per day, recent change in drinking habits, amount of alcohol consumed in the bout preceding the seizure and time interval between last bout and seizure and withdrawal symptoms and its temporal relationship with seizure also assessed. *Alcohol use disorders identification test (AUDIT*) was performed in each patient and "AUDIT" scores were calculated to identify persons with hazardous and harmful patterns of alcohol consumption.

The Alcohol Use Disorders Identification Test: Interview Version 15 Read questions as written. Record answers carefully. Begin the AUDIT by saying "Now I am going to ask you some questions about your use of alcoholic beverages during this past year." Explain what is meant by "alcoholic beverages" by using local examples of beer, wine, vodka, etc. Code answers in terms of "standard drinks". Place the correct answer number in the box at the right.	
1. How often do you have a drink containing alcohol? (0) Never [Skip to Qs 9-10] (1) Monthly or less (2) 2 to 4 times a month (3) 2 to 3 times a week (4) 4 or more times a week	6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily
2. How many drinks containing alcohol do you have on a typical day when you are drinking? (0) 1 or 2 (1) 3 or 4 (2) 5 or 6 (3) 7, 8, or 9 (4) 10 or more	7. How often during the last year have you had a feeling of guilt or remorse after drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily
3. How often do you have six or more drinks on one occasion? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily Skip to Questions 9 and 10 if Total Score for Questions 2 and 3 = 0	8. How often during the last year have you been unable to remember what happened the night before because you had been drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily	9. Have you or someone else been injured as a result of your drinking? (0) No (2) Yes, but not in the last year (4) Yes, during the last year
5. How often during the last year have you failed to do what was normally expected from you because of drinking? (0) Never (1) Less than monthly (2) Monthly (3) Weekly (4) Daily or almost daily	10. Has a relative or friend or a doctor or another health worker been concerned about your drinking or suggested you cut down? (0) No (2) Yes, but not in the last year (4) Yes, during the last year
Record total of specific items here If total is greater than recommended cut-off, consult User's Manual. A score of 8 or more is considered to indicate hazardous or harmful alcohol use.	

The family history was also noted. Detailed general and systemic examination was done in all patients and the findings were noted in the proforma. Routine hematological and biochemical investigations for liver and renal functions, Serum electrolytes, sodium, potassium, calcium and magnesium, computed tomography (CT) of the brain and EEG was done in all patients. Magnetic resonance imaging of the brain was done as whenever needed.

RESULTS

A total of 50 patients with alcohol withdrawal seizures were included in the study of which 24(48%) were males and 26(32%) were females. The mean age of the study population was 43.6 years, the median age was 45 years and the range was 25years to 68years. The maximum number of patients were in the age group of 40 – 49 years of age (28%) as shown in *Table 1*

Table 1. Age distribution of patients

Sl.No	Age group in years	No.of.patients	% of patients
1	15 – 29	9	18%
2	30- 39	8	16%
3	40 – 49	14	28%
4	50 – 59	9	18%
5	60>	10	20%

Temporal association between the last bout of alcohol and onset of seizures in depicted in Table 2. Majority of the patients presented with seizures within 6 days following the last bout of alcohol (85%).

Table 2. Temporal association between last bout of drink and seizure

Sl. No	Time duration	No. of patients	% of patients
1	Within 1 day	3	6%
2	2-4 days	19	38%$
3	4-6 days	21	42%
4	≥ 7days	7	14%

All the 50(100%) patients presented with generalized tonic clonic seizures (GTCS) and 8(16%) progressed in to status epilepticus.

As shown in the Table 3 withdrawal symptoms were present in 24(48%) patients and absent in 26 (52%) patients.

Table 3. Withdrawal symptoms in patients with AWS

Sl. No.	Withdrawal symptoms	No.of patients	% of patients
1	Present	24	48%
2	Absent	26	52%

Family history of seizures in the first degree relative was present in 4(8%) patients.

Among the 50 patients CT evidence of cortical atrophy was absent in 40 (80%) patients and present in 10 (20%) patients.

EEG suggestive of seizures was present in 15 (30%) patients and it was normal in 35 (70%) patients that is shown in *Table 4.*

Table 4. EEG findings in patients with AWS

Sl. No.	EEG findings	No. of patients	% of patients
1	Normal	35	70%
2	Suggestive of seizures	15	30%

Relationship between cortical atrophy on CT brain and duration of alcohol intake and audit score is shown in *Table 5.*

Table 5. Relationship between cortical atrophy on CT brain and duration of alcohol intake and audit score

Sl. No	CT findings	No. of patients	Mean duration of alcohol intake	Mean AUDIT score
1	Cortical atrophy	10	22.1 yrs	18.2
2	Normal	40	15. 875yrs	19.45
3	Study population	50	17.62 yrs	19.2

Relationship between mean age, mean duration of alcohol intake, mean audit score and EEG finding is depicted in *Table 6.*

Table 6. Relationship between mean age ,mean duration of alcohol intake, mean audit score and EEG finding.

Sl.No	EEG finding	No of patients	Mean age in years	Mean duration of alcohol intake in years	Mean audit score
1	Seizure disorder	15	41.2	15.66	17.4
2	Normal	35	44.62	18.025	18.714
3	Study population	50	43.6	17.62	19.2

DISCUSSION.

The present study included 50 patients with new onset alcohol related seizures. Out of 50 patients 24(48%) were males and 26(52%) were females. Almost equal occurrence of ARS may be because of rampant alcohol consumption by both the sexes in rural Telangana. Maximum number (28 %) of patients were in age group of 40-49 years. The youngest patient being 25 years and oldest patient being 68 years of age. The mean age of patients in present study is 43.6 years. The median age in the present study was 40 years and the range was 25 – 68 years. The findings were similar to a study by P.Sandeep, Ajith Cherain

et al[16] where the mean age of the patients was 43.7 years and the median age was 45 years and the range was 25 – 67 years.

In present study 48 % of patients had history of withdrawal symptoms prior to seizure episode, 30% of patients had after the seizures and 22% had no history of withdrawal symptoms. In another study, by Sandeep, Ajith Cherain et.al, about 68 % of patients had withdrawal symptoms prior to seizure episode, 20% had after the seizures and 15% had no history of withdrawal symptoms.

In the present study, all patients presented_with GTCS and about 8(16%) patients progressed to status epilepticus. In the study by Sandeep & Ajith, Cherain et.al. 88 % had GTCS, 12 % had focal seizures and none of the patients had status epilepticus.

In the present study about 4 patients [8%] had a family history of seizures in first degree relative. In the study by Sandeep &Ajith Cherain et.al. 8 % 0f patients had family history of seizures in first degree relative. In another study done by Murthy P, Taly AB & et al.,[17] about 25 % of patients had family history of seizures in first degree relative.

In the present study about 20 % 0f patients had evidence of cortical atrophy on CT-scan brain. In a study by Sandeep Ajith Cherain &et.al. about 27 % of patients had cortical atrophy on CT – scan brain. In another study by Dam et al,[18] about 74 % of patients had evidence of cortical atrophy on CT-scan brain.

In the present study ,70 % of patients had a normal EEG recording while 30 % of patients had EEG evidence suggestive of seizure disorder. In the study by Sandeep, Ajith Cherain et al 67 % of patients had normal EEG recording while 2% of patients had EEG suggestive of seizure disorder. In another study by Rathlev NK, Ulrich AS et al.,[19] about 22 % of the study population had EEG s/o seizure disorder.

CONCLUSION.

Alcohol consumption is common in both sexes in rural Telangana. Probably that was the reason for almost equal occurrence of ARS in both the sexes. It is very important to take detailed history so that we can recognize ARS and treat early. This study lays emphasis on importance of conducting awareness programs in rural population regarding the complications arising out of alcohol consumption .

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