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Profile of Patients with Seizure Disorders in Adults Presenting to Manipal Teaching Hospital

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ABSTRACT

Background

Seizures can affect people of all ages, including adults. Symptoms of seizures can vary widely, including muscle convulsions, loss of consciousness, staring spells, confusion, repetitive movements, and sensory disturbances. Seizures can be caused by various factors, such as epilepsy, head injuries, brain infections, stroke, and other medical conditions. Diagnosis typically involves a thorough medical history, neurological examination, and sometimes ancillary tests. Treatment options depend on the underlying cause.

Methods

This was a prospective cross-sectional hospital-based study conducted on 63 cases presenting with adult onset seizures. Details of the patients of the age of 18 years and above were included and entered as per the structured performa. Statistical analysis was done by SPSS in terms of frequency and percentage.

Results

The mean age was with 46.84 years with male gender predominance. Adult onset seizures were most prevalent in the middle-aged adults than elderly; generalized seizures were more common than focal seizures. Most common neuroimaging finding was infarct followed by neurocysticercosis and intracranial bleed.

Conclusions

Identification and awareness about the possible etiological factors and seizure type help in better management of seizure patients.

Keywords: adult onset; hospital-based study; seizure.

INTRODUCTION

A seizure is a paroxysmal event due to abnormal, excessive, hyper synchronous discharge from an aggregate of central nervous system neurons. Seizure beginning in the adult life is more likely to have an identifiable cause as compared to those beginning in the childhood.[1] ILAE modified the classification of seizure in 2017 into focal, generalized and unclassified seizure.[2] In India, generalized tonic clonic seizure were found to be the most common pattern of seizure as compared to the focal seizure being the commonest pattern in the western countries.[3] With the available history, physical examination and interpretation of the imaging and laboratory findings the etiological analysis of seizure is made. Therefore, this study was done to evaluate the clinical and etiological profile of seizure in adults.

METHODS

This hospital-based cross-sectional study was conducted among admitted patients of Manipal Teaching Hospital, Pokhara, Nepal. Permission was taken from the Institutional Ethical Committee (MEMG/521/IRC) of Manipal Teaching Hospital (MTH), Pokhara, before the commencement of the study. All the patients presenting to the outpatient or emergency department with seizure presentation

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from 1st July 2022 to 31st December 2022 were included in the study. It included all those above 18 years of age provided they were willing to give consent. Excluded patients were the pregnant ladies and also those with psychogenic seizures. Convenient sampling method was employed and all cases that came to the emergency of Manipal Teaching Hospital during that period were included. Data entry, compiling and editing was done manually in a predesigned proforma. For statistical analysis, SPSS 16.0 was used. Quantitative variables of groups were calculated as arithmetic averages ± SD. Descriptive analysis was done in terms of frequency and percentage.

RESULTS

Majority belonged to the middle aged group. Males were affected more. Alcohol consumption history was present in nearly half of the cases. Fourteen cases were under anti-epileptic drugs previously (Table 1).

Table 1. Sociodemographic characteristics of the patients.

Variables	Frequency (%)
Age	
Mean (± S.D)	46.84(±13.46)
≤ 30 years	6 (9.5%)
30-40	11 (17.5%)
40-50	23 (36.5%)
50-60	16 (25.4%)
>60 years	7 (11.1%)
Gender	
Male	47 (74.6%)
Alcohol	31 (49.2%)
Family history of epilepsy	1 (1.6%)
Illicit drugs use	0
Under antiepileptic drugs	14 (22.2%)
Other comorbidities	17 (27%)

Table 2 shows the clinical, laboratory and neuroimaging data of the patients. Majority (61.9%) cases have generalized seizure on presentation. Normal neuroimaging was present in most of the cases.

Table 2. Clinico-radiological features.

Clinical features	Frequency (%)
Type of seizure at presentation	
Generalized type	39(61.9)
Focal type	24(38.1)
First seizure	47(74.6)
Abnormal EEG findings	17(27)
Abnormal neuroimaging finding/s	12(19)
Infarct	5(7.9)
Neurocysticercosis	2(3.2)
Intracranial bleed	2(3.2)
PRESS	1(1.6)
Atrophic brain changes	1(1.6)
Glioblastoma multiforme	1(1.6)
Metabolic abnormalities	14(22.23)
Alcohol withdrawal	10(15.87)
Hyponatremia	3(4.76)
Hypocalcaemia	1(1.6)

DISCUSSION

Seizure is a common presentation worldwide and includes provoked and unprovoked seizure.[1] It is difficult to observe seizure at the first medical examination and outpatient visit. With the available history, physical examination and interpretation of the laboratory findings the etiological analysis of seizure is made. Therefore, we aimed to evaluate the clinical profile of seizure in adults. The evaluation of etiology and clinical profile of seizure will help to reduce the burden of the disease by tailoring the treatment according to the cause. In our study, males were likely to have increased seizure presentation as compared to females. This finding was similar to a study done among adults in tertiary hospital in Turkey.[4] Another study conducted among 120 adult Egyptian patients with new-onset seizures showed similar findings with males (63%) predominance.[5] This is in agreement with other studies also.[6, 7] Age predominance for the seizure presentation was more common in the middle aged group and similar in the younger and older age group people. Similar results were reported in other studies with seizure presentation more common between the ages from 30 to 50 years.[4, 6-9] However, these findings were in contrary to the studies done in USA and Egypt.[5, 10-12] The likely reasons for variation in the age

group presentation is likely that the provoked seizures due to alcohol, metabolic derangements and infectious etiology are more common in our part of the country and the incidence of cerebrovascular disease and brain tumors are more common in the western world. Abnormal neuroimaging findings were seen in 19% of the cases. This was in contrast to other study done in Egypt that showed 75% had abnormal neuroimaging findings.[5] Other study also showed 53% abnormal imaging findings. [13] The likely variation is due to the predominant older age group people in the Egyptian study as compared to ours. Most common abnormal neuroimaging was infarct (7.9%) followed by bleed (3.2%) and neurocysticercosis (3.2%).Findings of infarct as the most common abnormality was also seen in other studies too.[5, 8] Generalized seizures type were the majority seizure types seen in approximately 62% cases. This was similar to other studies which showed higher prevalence of generalized seizures as compared to focal seizures.[6,14-16] Metabolic derangements were also common accounting for nearly one-fifth (22.23%) of seizures. Most common metabolic derangement was alcohol withdrawal syndrome (15.87%) followed by hyponatremia (4.76%) of all the cases. Different studies reported alcohol withdrawal seizure as the presentation varying from 3% to 31%.[6, 15, 16] Possible reasons for variation may be the difference in the population taken, the settings whether in the emergency or out-patient based or record-based datas. Also other factors that can be considered are the easy availability of alcohol and the local or national rules and regulations related to the purchase and use of alcohol and alcohol-related products.

CONCLUSIONS

Generalized tonic clonic seizure was the most common type of seizure presentation. Alcohol withdrawal was significantly associated with seizure presentation. Brain infarct was found to be the commonest abnormal finding in neuroimaging study.

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Conflict of interest: None

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