

A Study of Etiological Profile of Acute Symptomatic Seizures in Adults

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Abstract: *Background:* Seizure is a paroxysmal event due to abnormal excessive or asynchronous neuronal activity in the brain. Seizures could be acute symptomatic or unprovoked. Misclassification of acute symptomatic seizure as unprovoked can frequently occur, because the age distribution and frequency of both are similar. The appropriate therapeutic management, risk of developing epilepsy, and mortality depends largely on the underlying disorder. Thus it is crucial to distinguish acute symptomatic from unprovoked seizure and identify its etiology. *Methods:* All patients admitted to wards and presenting at casualty/opdin ESIC-MC & PGIMSR with first onset seizures were taken for study considering the inclusion and exclusion criteria. The semiology of the seizure was studied and the relevant investigations required were done. *Results:* Of 100 patients 75% were acute symptomatic seizures. The seizure types were GTCS in 67% and focal seizures with and without dyscognitive features in 20% and 13% of the patients respectively. Among the acute symptomatic seizures cerebrovascular accident was the leading cause found in 28% followed by metabolic in 27%. It occurred predominantly in males with male to female ratio of 2:1. Most of the patients were above the age of 40 years. Neuroinfections and alcohol withdrawal stood as the 3rd and 4th common causes in the spectrum. *Conclusion:* This study illustrates that the acute symptomatic seizures were more common in adults as compared to unprovoked seizures. Etiologies varied according to the age group. Unprovoked seizures occurred mostly in the younger age group. Cva and metabolic were predominant causes among the elderly and neuroinfections among the middle aged adults.

1. Introduction

Acute symptomatic seizures is defined as a clinical seizure occurring at the time of a systemic insult or in close temporal association with a documented brain insult. Recommendations are made to define acute symptomatic seizures as those events occurring within 1 week of stroke, traumatic brain injury, anoxic encephalopathy, intracranial surgery; at the presence of an active central nervous system infection; in the presence of severe metabolic derangements documented within 24 hours by specific biochemical or hematologic abnormalities

Studies have reported that 25-30% of first seizures are acute symptomatic seizures. A first seizure caused by an acute disturbance of brain function has recurrence in only about 3 – 10% of cases. However unprovoked seizures have 30 – 50% chances of recurrence and after a second unprovoked seizure 70 – 80 % will recur.

A remote symptomatic seizure is a seizure that occurs later than 1 week following a disorder that is known to increase the risk of developing epilepsy. The seizure may occur a long time after the disorder. These disorders may produce static or progressive brain lesions. An example of a remote symptomatic seizure is a seizure that first occurs 6 months following a traumatic brain injury or stroke.

Earlier the classical definition of epilepsy required the occurrence of at least two unprovoked seizures > 24 hours apart. The International League Against Epilepsy (ILAE) accepted recommendations of a task force altering the practical definition for special circumstances that do not meet the two unprovoked seizures criteria. The task force proposed that epilepsy should be considered to be a disease of the brain defined by any of the following conditions: (1) At least two unprovoked (or reflex) seizures occurring >24 h apart; (2) one unprovoked (or reflex) seizure and a probability of further seizures similar to the general recurrence risk (at least 60%) after two unprovoked seizures, occurring over the next 10 years; (3) diagnosis of an

epilepsy syndrome. Epilepsy is considered to be resolved for individuals who either had an age-dependent epilepsy syndrome but are now past the applicable age or who have remained seizure-free for the last 10 years and off anti seizure medicines for at least the last 5 years.

Objectives of the Study

- To study the etiological profile of acute symptomatic seizures.
- To differentiate acute symptomatic seizures from cryptogenic seizures.

Methodology

Source of data: All patients admitted to wards and presenting at casualty/opdin ESIC-MC & PGIMSR, Rajajinagar with first onset seizures will be taken for study considering the inclusion and exclusion criteria.

Inclusion Criteria

Patients aged >18 years
Patients presenting with first onset seizure.

Exclusion Criteria

- Migraine
- Known case of seizure disorder
- Movement disorders
- Psychiatric patients or those considered as having pseudo seizures/psychogenic attacks.

Methods of Collection of Data

- 1) Information was collected through preformed proforma for each patient.
- 2) All patients were interviewed as per the proforma and a complete clinical examination was done.
- 3) Cases of new onset seizures diagnosed with clinical history, examination, laboratory and radiological studies.
- 4) Patients demographic, social, economic and medical details was recorded in the proforma sheet.
- 5) The lab investigations done were complete hemogram, renal function tests, serum electrolytes, liver function tests, urine routine, blood glucose, serum calcium,

magnesium, CT brain sos, MRI brain sos, csf analysis and eegsos.

Results were analyzed with appropriate statistical methods. It was an observational study. A sample size of 100 patients weretaken considering the patient load expected during the particular time period. Duration of study was 18 months from January 2016 to June 2017.

2. Results

In our study out of 100 patients 67% were males, 33% were females with male to female ratio of 2: 1. Majority of the patients > 40 years. Patient's age ranged from 18 years to 86 years, with Mean of 47.47 years.

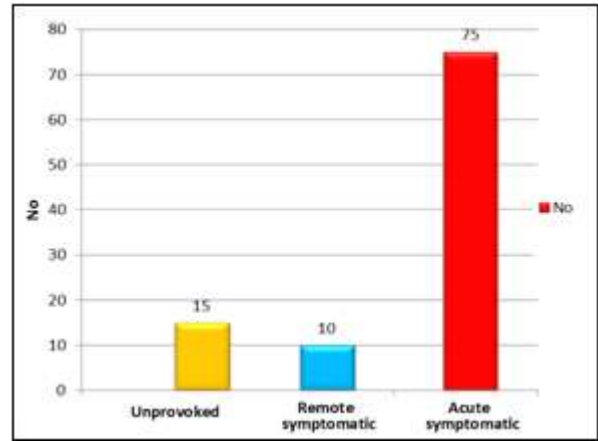


Figure 1: Classification of seizures

Generalized seizures was the most common seizure type Acute symptomatic seizures was the most common type in 75% of the patients, unprovoked occurred in 15% and remote symptomatic in 10% of the patients. Unprovoked seizures was common among young adults.

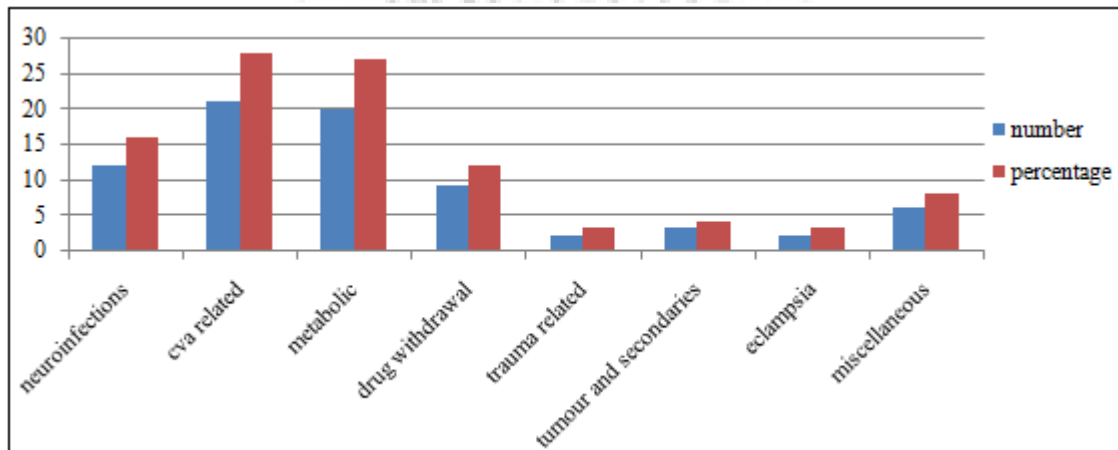


Figure 2: Etiological profile of acute symptomatic seizures

Cerebrovascular accidents was the most the most common etiology followed by metabolic both together accounting for 55% of acute symptomatic seizures. CVA appeared to be distributed among all age groups predominantly occurring in elderly population over the age of 60 years. Infarct was seen in 43% of the patients. Intracranial bleed and cerebral venous thrombosis accounting for 33% and 24% of the cases respectively.

50% of seizures in people >60 years of age was due to metabolic encephalopathy and was the leading cause in elderly population. Hyponatremia and hypoglycemia was found in 40% and 30% of the patients respectively. Dialysis disequilibrium, uremic encephalopathy, hypocalcemia, hypernatremia and hyperglycemia were among the other metabolic causes.

Neuroinfections was responsible for most of the seizures in the middle aged individuals. Meningoencephalitis was responsible for most of the cases ie..in 54% of the patients followed by neurocysticercosis which prevailed in 33% of the cases studied. Tuberculoma and cerebral malaria were found in 8% of patients each.

Alcohol withdrawal related seizures was observed mostly among the patients in the 4th and 5th decades of their life. Tumour, trauma, eclampsia, sepsis, hypoxia, vasculitis were the other causes noted under the etiological spectrum.

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