



A STUDY OF DISTRIBUTION OF SEIZURES IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA.

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ABSTRACT

There are about 70 million people with epilepsy worldwide, and most of them are in developing countries. Nearly 12 million persons with epilepsy are in India, which accounts to about 18% of the global burden. Many people with active epilepsy do not receive appropriate treatment for their condition due to reasons like lack of knowledge of antiepileptic drugs, poverty, cultural beliefs, stigma, poor health infrastructure, and shortage of trained professionals. Infectious diseases and neuroinfections play a major role in seizures and long-term burden causing both new-onset epilepsy and status epilepticus. Despite its varied etiology, majority of the epilepsy and seizures are manageable in nature. Appropriate health education and good health care services can lead to a significant change in a developing nation like India. This article attempts to study the distribution of various factors in seizures

KEYWORDS : Central Nervous System, Cerebrospinal Fluid, Electroencephalography, Magnetic Resonance Imaging, Quality of Life In Epilepsy questionnaire

INTRODUCTION

A seizure is a clinical manifestation, resulting from a brief episode of abnormal excessive or synchronous neuronal activity in the brain. Epilepsy is a brain disorder characterized by a chronic predisposition to generate epileptic seizures with secondary neurobiological, cognitive, psychological, and social consequences. By definition, epilepsy requires typically two unprovoked seizures, separated by greater than 24 hours.⁽¹⁾

There are about 70 million people with epilepsy worldwide, and most of them are in developing countries. Nearly 12 million persons with epilepsy are in India, which accounts to about 18% of the global burden. Infectious diseases and neuroinfections play a major role in seizures and in long-term burden causing both new-onset epilepsy and status epilepticus.

Patients with epilepsy suffer from lower socioeconomic status and lower quality of life compared to other general population in validated quality of life in epilepsy questionnaire (QOLIE). Fewer epilepsy patients married or had children, higher education or achievement in later life than the general population.^(2,3) Also, patients with poorly controlled epilepsy experience decline in memory and cognition.^(4,5) Co-morbid mood disorders such as depression and anxiety are common and more prevalent in patients with epilepsy compared to the general population.⁽⁶⁾

Many people with active epilepsy do not receive appropriate treatment for their condition due to reasons like lack of knowledge of antiepileptic drugs, poverty, cultural beliefs, stigma, poor health infrastructure, and shortage of trained professionals. Infectious diseases and neuroinfections play a major role in seizures and long-term burden causing both new-onset epilepsy and status epilepticus. Despite its varied etiology, majority of the epilepsy and seizures are manageable in nature. Appropriate health education and good health care services can lead to a significant change in a developing nation like India. This article attempts to study the distribution of various factors in seizures.

AIM:

To study the distribution of seizures in adult patients; based on age, gender, type of seizure and etiology.

METHODOLOGY:

A Hospital-based analytical study was done during the period of October 2016 to October 2017 in ASRAM Hospital, Eluru. This study included 50 subjects aged 20 years and above, that presented to our

hospital with history of seizures (both new onset and recurrent). Prior to the study, approval from the Institutional Ethical Clearance Committee was taken. Informed consent from the study population was also obtained.

The basic details of the all the patient including age, sex, occupation, place of residence were collected. History of the present seizure episode was taken in detail, along with history of previous episodes. Relevant past medical history, co-morbidities, family history and personal habits (including dietary history of pork consumption) was noted. All the patients were thoroughly examined including detailed examination of the nervous system.

Routine blood investigations were done for all the patients (including complete blood picture, serum blood glucose, serum creatinine, blood urea nitrogen, serum electrolytes etc.).

Imaging studies of the brain were done in appropriate patients based on the requirement (CT/MRI scanning of the brain was done).

EEG studies and CSF analysis were done in some of the patients when indicated.

The data was collected, compiled and analyzed thoroughly. Results were obtained and chi-square test for Significance was applied. Tables, pie diagrams were used to represent the results.

RESULTS:

In this study among the patients with generalised tonic clonic type of seizures, 12 patients were in the age group of greater than 60 years followed by 10 patients in 30-40 years age group and 9 patients in 50-60 years of age group [Table 1].

Based on the type of seizures, patients with generalised tonic clonic type of seizures occupy 40 out of 50 patients [Table 1].

In this study, among the sex distribution, there are 26 females and 24 males.

Based on presentation of seizures 36 patients presented with first episode of seizures, whereas 24 with recurrent seizures.

Among the etiological distribution, 6 patients with neurocysticercosis, 5 patients with tuberculoma of brain and another 5 patients with encephalitis were among the infectious etiology [Table 2].

In cerebro-vascular pathology, 7 patients were with haemorrhage, 3 patients were with infarct and another 3 have cerebral sinus venous thrombosis.

There were 4 patients with traumatic etiology. 5 patients were noted to have intracranial tumours. 5 patients were found to have metabolic causes.

Even after a thorough evaluation, no cause was found in 6 of the patients [Table 2].

DISCUSSION:

In this study it was observed that among all the age groups, maximum number of patients fall in the age group of greater than 60 years. With 16 patients among the total of 50 patients, they account to 32 % of the total study group. This was followed in the next place by the 30-40 years age group with 22 % (11 out of 50 patients) and 50-60 years age group with 9 patients. The patients were distributed across various age groups. And there seems to be no statistically significant distribution in a particular age group of patients.

According to the type of seizures, generalised tonic clonic seizures occupy 80% of the study group with 40 out of a total of 50 patients. This is in concurrence with various studies done in this aspect suggesting that generalised tonic clonic seizures are the most common variety of symptomatic seizures presenting to a hospital⁽⁷⁾.

Most common cause of seizure in our study is infections of the central nervous system, followed by cerebro-vascular causes. Infections are the cause of seizures in 32 % of patients (16 out of 50 patients). Our study correlates with other studies from south India in this aspect^(8,9).

Among the infections, neurocysticercosis is the most common cause with 6 out of 16 patients. This correlates with other studies done on this subject⁽¹⁰⁾.

Accurate diagnosis of the cause of acute symptomatic seizure is very important in the treatment and prognosis as the treatment of underlying condition in many cases will abolish the seizure episode.

Very few studies are present to deal with the causes of acute symptomatic seizures, from south India especially from coastal Andhra Pradesh. So it is very useful to study the different conditions producing seizures in such patients and the use of valuable and available investigations to find out the underlying problem.

CONCLUSIONS:

- In this study, Generalised tonic clonic seizures are the most common type of seizures.
- Among the patients distributed according to various age groups, the highest numbers of patients are present in age group more than 60 years, but there is no significant occurrence of seizures in a particular age group when compared to other age groups.
- There is no significant gender variation in occurrence of seizures in this study group.
- Infections are a leading cause of seizures in this study. Neurocysticercosis is the most common among them, followed by tuberculomas of brain and encephalitis.
- Among the patients with etiology of cerebro-vascular pathology, haemorrhage is significantly more common than ischemia.

LIMITATIONS OF THE STUDY:

Though the results were significant and have clinical relevance in the Indian scenario, there are a few limitations to this study. The sample size is small and the results would be more conclusive with a larger sample size, alongside with subjects taken into account from various centres and across various regions of our country.

TABLE 1: DISTRIBUTION OF SEIZURES BASED ON AGE AND TYPE OF SEIZURES

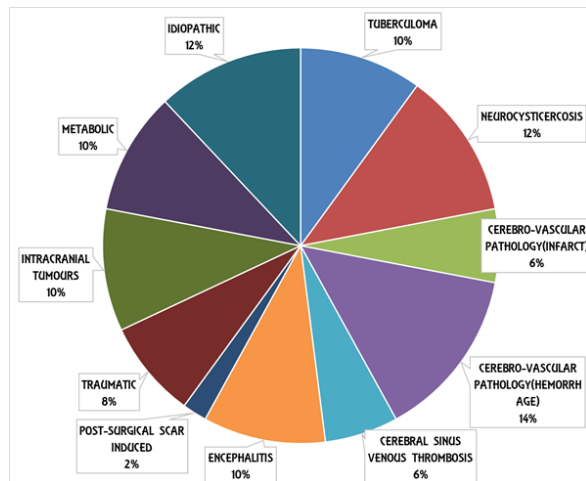
AGE GROUP	GTCS		CPS		SPS		UNDEFINED	
	No.	%	No.	%	No.	%	No.	%
< 30 yrs	2	5.0%	0	0.0%	0	0.0%	0	0.0%
30-40 yrs	10	25.0%	1	16.7%	0	0.0%	0	0.0%
40-50 yrs	7	17.5%	1	16.7%	1	33.3%	0	0.0%
50-60 yrs	9	22.5%	2	33.3%	1	33.3%	0	0.0%
> 60 yrs	12	30.0%	2	33.3%	1	33.3%	1	100.0%

	40	100%	6	100%	3	100%	1	100%
	Chi square value = 4.309, d.f = 12, p-value=0.977 (not-significant)							

TABLE 2: DISTRIBUTION OF SEIZURES BASED ON ETIOLOGY

	ETIOLOGY	NUMBER	PERCENTAGE
1.	CNS INFECTIONS:		
	NEUROCYSTICERCOSIS	6	12
	TUBERCULOMA	5	10
2.	VASCULAR:		
	CEREBRO-VASCULAR PATHOLOGY(INFARCT)	3	6
	CEREBRO-VASCULAR PATHOLOGY(HEMORRHAGE)	7	14
	CEREBRAL SINUS VENOUS THROMBOSIS	3	6
3.	INTRACRANIAL TUMOURS	5	10
4.	TRAUMATIC	4	8
5.	POST-SURGICAL SCAR INDUCED	1	2
6.	METABOLIC	5	10
7.	IDIOPATHIC	6	12
	TOTAL	50	100

FIG 1: PERCENTAGE DISTRIBUTION OF SEIZURES BASED ON ETIOLOGY



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