Original Research Article

A study of clinical profile of seizure disorders at tertiary health care center

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Abstract

Background: A seizure (from the latin word "to take possession of") is a paroxysmal event due to abnormal, excessive, hypersynchronous discharge from an aggregate of central nervous system neurons. **Aims and Objectives:** To Study Clinicalprofile of Seizure disorders at Tertiary health care center**. Methodology:** This was a cross-sectional study in 100 patients of seizure disorder in the age group 15 and above years at tertiary health care center of D Y patil hospital general medical department during 2014 to 2015. **Result:** Out of the 100 patients, 63% were males and 37% were females 91% (91 patients) of the study patients had generalized tonic seizure, 4% (patients) had partial seizure with secondary generalization, 3% (3 patients) had complex partial seizures and 2% (2 patients) had simple partial seizures 65% (65 patients) of the cases, no cause could be found in spite of rigorous investigation and they were termed 'idiopathic' or 'cryptogenic'. 16% (16 patients) of the cases were due to space occupying lesions. 8% (8 patients) had electrolyte imbalance, 6% (6 patients) had metabolic derangements. 3% (3 patients) had post-stroke convulsion, and 2% (2 patients) had hippocampal sclerosis. **Conclusion:** It can be concluded from our study that most common type was GTS, in most common etiology was idiopathic followed by Space occupying lesion, electrolyte imbalance, metabolic derangements, post-stroke convulsion, hippocampal sclerosis etc.

Key Words: GTS (Generalized Tonic Seizures), Space occupying lesion, electrolyte imbalance, metabolic Seizures, Post-stroke convulsion.

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INTRODUCTION

A seizure (from the latin word "to take possession of") is a paroxysmal event due to abnormal, excessive, hypersynchronous discharge from an aggregate of central nervous system neurons.[1] About 50 million people suffer from seizure disorders worldwide[2]. Seizure disorders affect 0.5% population worldwide[3,4], about 1.5- 5.0% may have a seizure in their lifetime.[3,4] the prevalence in India is estimated to be around 5.33%[5]. The prevalence is fairly uniform at different age group reaching about 6-8 case per thousand individuals by adolescens[5] except for an increase by 80 years where prevalence reaches 23 per thousand.[5]

MATERIAL AND METHODS

This was a cross-sectional study in 100 patients of seizure disorder in the age group 15 and above years at tertiary health care center of D Y patilhospital general medical department during 2014 to 2015. The Patients on treatment but not evaluated completely from the etiological point of view were included while Pediatric patients, Hysterical seizure and Patients above 50 years of age were excluded from the study. A detailed clinical examination, focusing on the nervous system was performed. The goal was to determine whether the event was truly a seizure. Questions focused on symptoms before, during and after the episode in order to determine the type of seizure from their paroxysmal events. The History Was Focused On Risk Factors Like Family history of seizures, Space occupying lesion(suggestive

symptom), Head trauma, Stroke, Sleep deprivation, Systemic diseases like hepatic encephalopathy, uremia, Electrolyte or metabolic disturbance, Drug abuse, infection. All patients underwent complete general physical examination with respect to infection or systemic illness. All patients underwent complete neurological examination, with particular emphasis on eliciting signs of cerebral hemispheric disease. Careful assessment of mental status including memory, language function and abstract thinking was done. The investigations like Complete blood count, Serum electrolytes, Liver function test, Blood sugar levels, Computerized tomography (CT) scan of brain. Electroencephalogram (EEG) was done in all patients, Magnetic resonance imaging (MRI) was done in those patients where diagnosis was not reached on computerized tomography, Serum calcium and serum magnesium levels, Fundoscopy, Lumber puncture (if meningitis or encephalitis was suspected, or in human immunodeficiency virus-HIV affected patients) etc. was done.

RESULT

Table 1: Distribution of the patients as per the sex

Sex	No.	Percentage (%)
Male	63	63 %
Female	37	37 %
Total	**100**	**100%**

Out of the 100 patients, 63% were males and 37% were females.

Table 2: Distribution of the patients as per the type of seizure

Type of Seizure	No.	Percentage (%)
generalized tonic seizure	91	91 %
partial seizure	4	4 %
complex partial seizures	3	3%
simple partial seizures	2	2%

In the present study 91% (91 patients) of the study patients had generalized tonic seizure, 4% (patients) had partial seizure with secondary generalization, 3% (3 patients) had complex partial seizures and 2% (2 patients) had simple partial seizures.

Table 3: Distribution of the patients as per the Causes Of Seizure Disorders

Causes of Seizure	No.	Percentage (%)
Idiopathic	65	65%
Space occupying lesions	16	16%
Electrolyte imbalance	8	8%
Metabolicderangements	6	6%
Post-stroke convulsion	3	3%
hippocampal sclerosis	2	2%

In the present study 65% (65 patients) of the cases, no cause could be found in spite of rigorous investigation and they were termed ‘idiopathic’ or ‘cryptogenic’.16% (16 patients) of the cases were due to space occupying lesions. 8% (8 patients) had electrolyte imbalance, 6% (6 patients) had metabolic derangements. 3% (3 patients) had post-stroke convulsion, and 2% (2 patients) had hippocampal sclerosis.

Table 4: Distribution of the patients as per the Space Occupying Lesions

Space occupying lesions	No.	Percentage (%)
Tuberculomas	9	56%
Neurocysticerconsis	5	31%
Glioma	2	13%
Total	**16**	**100%**

In the present study 16% (16 patients) had space occupying lesions in the brain. Among them, 9 patients had tuberculomas (56%), 5 patients had neurocysticerconsis (31%), 2 patients (13%) had glioma.

Table 5: Distribution of the patients as per the Electrolyte Imbalance

Electrolyte Imbalance	No.	Percentage (%)
Hypomagnesemia	3	37%
Hyponatremia	3	37%
Hypocalcemia	2	25%
Total	**8**	**100%**

In the present study, 8% (8 patients) had seizure due to electrolyte imbalance out of which 3 patients (37%) had hypomagnesemia, 3 patients (37%) had hyponatremia, and 2 patients (25%) had hypocalcemia.

Table 6: Distribution of the patients as per the Metabolic Derangements

Metabolic Derangements	No.	Percentage (%)
Hypoglycemia	2	33%
Alcohol withdrawal	2	33%
Uremic encephalopathy	1	17%
Hepatic encephalopathy	1	17%
Total	**6**	**100%**

In the present study 6 patients (6%) had seizure associated with metabolic derangements, among them 2 patients (33%) were due to hypoglycemia, 2 patients (33%) had alcohol withdrawal, 1 patients (17%) had uremic encephalopathy, and 1 patients (17%) had hepatic encephalopathy.

FAMILY HISTORY OF SEIZURE: Out of 100 patients, 8 patients had family history of seizure.

SLEEP DERPVATION: In present study, 3 patients reported lack of sleep the preceding night.

DISCUSSION

Out of the 100 patients, 63% were males and 37% were females. In the present study 91% (91 patients) of the study patients had generalized tonic seizure, 4% (patients) had partial seizure with secondary generalization, 3% (3 patients) had complex partial seizures and 2% (2 patients)

had simple partial seizures. These studies are similar to Narayanan JT *et al*, Sendil *et al*, Hirani MM *et al* GTCS was found to be the pre-dominant seizure type.[6-8] However Chalasani S *et al* showed that partial seizure to be predominant intheir study accounting for 46% and GTCS accounting for 44%.[9] In the present study 65% (65 patients) of the cases, no cause could be found in spite of rigorous investigation and they were termed'idiopathic' or 'cryptogenic'. 16% (16 patients) of the cases were due to space occupying lesions. 8% (8 patients) had electrolyte imbalance, 6% (6 patients) had metabolic derangements. 3% (3 patients) had post-stroke convulsion, and 2% (2 patients) had hippocampal sclerosis.16% (16 patients) had space occupying lesions in the brain. Among them, 9 patients had tuberculomas (56%), 5 patients had neurocysticerconsis (31%), 2 patients (13%) had glioma8% (8 patients) had seizure due to electrolyte imbalance out of which 3 patients (37%) had hypomagnesemia, 3 patients (37%) had hyponatremia, and 2 patients (25%) had hypocalcemia. 6 patients (6%) had seizure associated with metabolic derangements, among them 2 patients (33%) were due to hypoglycemia, 2 patients (33%) had alcohol withdrawal, 1 patients (17%) had uremic encephalopathy, and 1 patients (17%) had hepatic encephalopathy. Similar to Hirani *et al* [8] where seizure due to unknown cause was most common 40%. but in contrast to Ashwin T *et al* they found[10] Most common cause of seizure in his study was stroke followed by infection followed by metabolic cause. Stroke was leading cause of seizures in present study accounting for 21%. Infection was next leading cause of seizures accounting for 17%. Metabolic cause accounts for 15%. Calcified granuloma accounts for 8% and alcohol withdrawal accounts for 5%. Tumours accounts for 6%. Gliotic changes accounts for 5%.Sander *et al* with a larger sample size than present study in UK have reported around 9% of seizures due to alcohol withdrawal.[11] also Swati Sunil Jagtap they found that [12] they found that Total 200 cases were studied over a three year period. The age range for seizures was from 2 month to 75 years, with maximum number of cases were in first and second decade. The male: female ratio was 2.7:1. The main etiological factor was idiopathic in 114 cases (76.51%) followed by neurodegenerative disorders (7.38%), developmental disorders (5.3%), head trauma (2.6%), organic lesions (2.0%) and other with infections, cerebrovascular diseases, alcoholism, psychological, metabolic etc. while International League Against Epilepsy (ILAE) in 2010[13]. The common causes for elder patients are cerebro-vascular disease, primary neuron degenerative disorders, CNS tumors and trauma to head[14].

CONCLUSION

It can be concluded from our study that most common type was GTS, in most common etiology was idiopathic followed by Space occupying lesion, electrolyte imbalance, metabolic derangements, post-stroke convulsion, hippocampal sclerosis etc.

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