Original Research Paper

Volume - 7 | Issue - 7 | July - 2017 | ISSN - 2249-555X | IF : 4.894 | IC Value : 79.96

Neurology

STUDY ON ETIOLOGICAL AND CLINICAL PROFIILE OF ACUTE SYMPTOMATIC SEIZURES IN ADULTS IN A TERTIARY CARE HOSPITAL

E. Amal Raj Iyadurai — Assistant Professor, Department of Neurology, Madurai Medical College.

Ganesan K — Assistant Professor, Department of Neurology, Madurai Medical College.

ABSTRACT Symptomatic epilepsy is the one in which seizures are the consequence of an identifiable lesion or other specific etiology. This study evaluated the clinical, etiological and radiological profile of acute symptomatic seizures in adults. Acute symptomatic seizures were more common in males than females and in 40-60 years of age. Cerebrovascular disease were the most frequent cause of acute symptomatic seizures, followed by Acute CNS infections. Eclampsia and cortical venous thrombosis were the common etiology among females. Cerebrovascular diseases and metabolic abnormality were common above 60 years of age where as eclampsia and alcohol related seizures were common in 20-60 years of age. Acute CNS infections were the predominant cause of acute symptomatic seizures below 20 years of age.

KEYWORDS : Symptomatic seizures, Etiology.

Introduction:
Epilepsy can be broadly divided into idiopathic and symptomatic disorders. Idiopathic epilepsies are not associated with brain lesions or neurological abnormalities ie they are relatively benign. They tend to be self limited and respond well to antiepileptic therapy. Symptomatic epilepsy is the one in which seizures are the consequence of an identifiable lesion or other specific etiology. This study is to evaluate the clinical, etiological and radiological profile of acute symptomatic seizures in adults.

AIM OF THE STUDY

- To study the etiological profile of acute symptomatic seizures in various age groups.
- To assess the common seizure type in patients with acute symptomatic seizures of varied etiologies.
- To study the Electro Encephalographic and Radiological profile of Acute symptomatic seizures.

MATERIALS AND METHODS

The study was done in the setting of the department of Neurology and Neuro surgery, Govt.Rajaji Hospital Madurai. The study had collaborations with the Department of Medicine, Trauma, Toxicology, Obstetrics and also with the departments of Biochemistry, Pathology, Radiology and Microbiology.

The study was designed to analyse all adult patients who are more than 12 years of age in whom the specific cause for seizure could be identified. The sample size was 150 and the study period was one year.

Inclusion criteria

All adult patients who presented with acute seizures in whom the specific cause for seizure could be identified.

Exclusion Criteria

Age less than 13 years
Known epileptic patients
Patients with family history of seizure

The clinical details were obtained from the patients or relatives with the help of the prepared proforma.

In depth probes in the history for provocation factors and features suggesting organicity were attempted. Significant past medical history if any were noted.

A thorough clinical examination was performed at the time of admission and relevant findings recorded. A routine metabolic screening which included blood sugar, Urea, serum creatinine, electrolytes and Liver functions tests were done at the time of admissions.

Lumber puncture and CSF analysis was done if infective etiologies were suspected. Earliest possible EEG was attempted and was performed using 32 channel digital.

Calculation of sample size and analysis of statistics.

Around 150 patients who presented with Acute seizures in whom the specific cause identified were followed up over a one year period, who attended the epilepsy outpatients clinic. P. value <0.05 was considered significant statistical value to correct for the multiple comparisons. SPSS 13.0 is used for statistical analysis.

OBSERVATIONS

Seizures in 150 adult patients aged more than 12 years were studied; of which 86 are males and 64 are females.

Table 1 Sex distribution of patients

Sex	*Number*	*Percentage*
Male	86	57.3%
Female	64	42.7%

The seizures are grouped into various types during the presentation and analysed.

Table 2: Seizure types found in the study

Seizure Type	*No of patients*	*Percentage*
GTCS	97	65%
Partical	34	23%
Status epilepticus	11	7%
Epileptia Partialis continua	5	3%
Myoclonic seizure	3	2%

Metabolic abnormalities at the time of admission were investigated as they are among the most readily treatable causes of seizures. The abnormalities in metabolic parameters were noted in 13% of patients in this study.

Table 3: Metabolic abnormality

Metabolic abnormality	*No of Patients*
Hyperglycemia	8
Hypoglycemia	7
Hyponatremia	3
Hypocalcemia	2

Table 4: Types of Cerebrovascular Disease

Cerebrovascular Disease	*No of patients*
Cortical Venous Thrombosis	12
Intracerebral Haemorrhage	14
Subarachnoid haemorrhage	6
Ischaemic stroke	4

Table 5: CNS Infections noted in the study

CNS Infection	No of patients
Viral Encephalitis	4
Tuberculous Meningitis	6
Neurocysticercosis	12
Tuberculoma	6

In obstetric ward, eclampsia patients having convulsions in both Antenatal and Posterior natal were studied.

Table 6: Eclampsia noted in the study

Eclampsia	No of patients
AP Eclampsia	12
PP Eclampsia	7
PRES	5

Table 7: Anoxic patients studied

Hanging	6
Post cardiac arrest	2

Head injury patients those developed Acute symptomatic seizure were studied.

Table 8: Traumatic Brain Injury

Type of Head Injury	*No of patients*
Haemorrhagic Contussion	5
Diffuse Axonal Injury	2
Traumatic SAH	3
Post Traumatic Meningitis	2

Table 9: Various Tumours noted in the study

Tumour	*No of patients*
Astrocytoma	1
Meningioma	2
Glioblastoma multiforme	1

For analyzing the type of seizures in various etiology in the study, the type of seizure and the percentage was enumerated and tabulated.

Table 10:

Etiology	*GTCS*		*PARTIAL*		*EPC*		*Status Epilepticus*		*Myoclonus*	
	No	%	No	%	No	%	No	%	No	%
Cerebro Vascular Disease	19	53%	14	39%	-	-	3	8%	-	-
CNS Infection	10	35%	15	54%	-	-	3	11%	-	-
Eclampsia	21	88%	1	4%	-	-	2	8%	-	-
Alcohol	18	100%	-	-	-	-	-	-	-	-
Metabolic abnormality	14	70%	-	-	4	20%	1	5%	1	5%
Anoxic	5	63%	-	-	-	-	1	12%	2	25%
Traumatic	9	76%	1	8%	1	8%	1	8%	-	-
Tumour	1	25%	3	75%	-	-	-	-	-	-

RESULTS

- In the present study Acute symptomatic seizures were slightly more in males than in females.
- Acute symptomatic seizures were most common in 40 – 60 years of age group.
- Generalised seizures were the most common seizure type encountered in the study.
- Head ache, vomiting and altered sensorium were the most common non convulsive presenting symptoms.
- Diabetes and Hypertension were the co morbid systemic illness associated with cerebrovascular accidents.
- Metabolic abnormality was found as the cause in 13% of the patients and the predominant age group was above 60 years.
- Cerebrovascular diseases were the most frequent etiology in acute symptomatic seizures.
- Among the cerebrovascular diseases, cortical venous thrombosis and intra cerebral haemorrhage were commonly presented with seizure.
- Next common cause of acute symptomatic seizures in this study was CNS infections consisting of 19%of the patients.
- Among CNS infections, Neurocysticercosis was the most common cause.
- In females eclampsia and cortical venous thrombosis were the common etiology for acute symptomatic seizures.
- Alcohol related seizures contributed to etiology in 12% of the patients.
- Hanging and post cardiac arrest were the common etiology the anoxic brain injury.
- EEG which was done in 76% of the patients in this study and abnormalities recorded in 81%.
- Vascular lesions and space occupying lesions were evaluated by CT brain and MRI brain.
- In 27 patients MRI uncovered the lesion which was missed by CT.
- Generalised seizures were common with cerebrovascular disease and alcohol related seizures. Partical seizures were common with Tuberculoma and Neurocysticercosis .
- Myoclonic seizures were common with anoxic brain injury.

DISCUSSION

In this study 150 patients of Acute symptomatic seizures were evaluated clinically and with EEG and CT scan.

The study group comprised of 86 males and females. Most authors report a small to moderate preponderance of men in their studies of Acute symptomatic seizures in adults (Van Donselaar, 1992; Musicco, 1997; Hopkins,1988; King 1998). A male to female ratio of 1.3: 1 is observed in this study, a trend noted in other studies.

Etiological profiles revealed CVA, CNS infections, Eclampsia, Alcohol Abuse, Metabolic abnormality, Anoxic Brain Injury, Traumatic Brain Injury andTumour as the cause of Acute symptomatic seizures.

Most of the studies showed the cerebrovascular disease as the common etiology in the elderly and CNS Infections in the young adults.

CONCLUSION

1. Acute symptomatic seizures were more common in males than females and in 40-60 years of age.
2. Cerebrovascular disease were the most frequent cause of acute symptomatic seizures, followed by Acute CNS infections.
3. Eclampsia and cortical venous thrombosis were the common etiology among females.
4. Cerebrovascular diseases and metabolic abnormality were common above 60 years of age where as eclampsia and alcohol related seizures were common in 20-60 years of age.
5. Acute CNS infections were the predominant cause of acute symptomatic seizures below 20 years of age.
6. Generalised seizures were the most common seizure type encountered in this study.