Original Article

Late Onset Shake-Etiology At Stake - A Prospective Study

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Abstract

Background: Late onset seizure is a major cause of morbidity & mortality in the population. Clinical evaluation & etiological analysis paves the way for early and specific treatment.

Objectives: The purpose of this prospective study is to determine the clinical profile of late onset seizure & to determine the etiology of late onset seizure.

Methods: In this descriptive, prospective, cross sectional study, all patients who presented to the department of medicine with one or more episode of seizure with the onset after age 25 yrs were included. Study for a period of 12 months march 2010-march 2011 study population was obtained by random sampling.

Results: Among 50 patients, 16 patients (32%) etiology could not be ascertained. Among the 34 symptomatic patients (68%), 16 patients (47.05%) had post stroke, 1 patient (2.94%) had NCC, 3 patients (8.84%) had tumor, 3 patients (8.84%) had metastasis, 7 patients (20.58%) had metabolic etiology and 4 patients (11.76%) had infective etiology.

Conclusion: In this study of late onset seizure, mean age of onset of seizures was 49.3 & male preponderance was noted. Most common seizures type was GTCS-(64%). Underlying causes were recognized in 68% (i.e., symptomatic seizures). Most common etiology of seizure with onset after 25 years of age was post stroke (16 out of 34 patients accounting for 47%). Between 30 to 60 years, most frequent etiologies were Idiopathic, post stroke and Metabolic.

Keywords: Etiologies, Idiopathic, Metabolic, Post stroke, Seizure

INTRODUCTION

Late onset seizure may be simply defined as seizure beginning in adult life >25 yrs.[1] Much attention has been focused on determining the etiology of late onset seizure. The difference in the emphasis is due to the view that the incidence of idiopathic seizures is greatest during childhood and adolescence. After the age of 25 the risk of developing seizure disorder is low. The importance of late onset seizures is its frequent association with secondary causes. Seizure that begins after age of 25 years may be associated with head trauma, CVA, CNS infection, Brain tumors, congenital CNS abnormality, illicit drug use, metabolic derangement. The current study includes 50 patients with one or more than one seizure with the onset after age 25.[2] The purpose of this study is to know the etiology of seizures after 25 years, since they are due to secondary causes and to find the etiology in our hospital, since they vary according to geographic locations.[3,4]

AIMS OF THE STUDY

- To study the clinical profile of late onset seizure
- To determine the etiology of late onset seizure.

MATERIALS AND METHODS

The current study includes 50 patients with one or more episode of seizure with the onset after age 25. A detail history and clinical evaluation was performed as per the proforma. Basic work up including CBC, RBS, Sodium, potassium, RFT, EEG, Radiological investigation and CSF analysis was performed when it was appropriate.

INCLUSION AND EXCLUSION CRITERIA

Inclusion Criteria

- A diagnosis of seizure was made on the basis of semiology according to the ILAE (International league against Epilepsy) classification scheme revised 1981.

Exclusion Criteria

- Pseudoseizures
- Age of onset before 25 years but who continue to have seizures after 25 years.

RESULTS

Study was done including 50 patients, with 31 males and 19 females. EEG was done in 37 patients, 35 underwent CT scan and 11 underwent MRI & 1 both.

Mean age of onset of seizure was 49.3 ± 28.2 (SD) yrs, youngest patient being 25 yrs and oldest being 86 yrs.

Male to female ratio was 1.63:1.

1. Time of Occurrence of Seizures

Seizures occurred during the day time in 34 patients (68%), 13 patients (26%) seizures occurred at night and 3 patients (6%) had seizures both during day and night.

2. Types of Seizures

Among 50 patients, 32 patients (64%) had GTCS, 5 patients (10%) had SPS, 2 patients (4%) had CPS, 1 patient (4%) had SPS with secondary generalization, 10 patients (20%) had CPS with secondary generalization.

3. Status Epilepticus

Among 50 patients, 7 patients (14%) presented with status epilepticus, of these 4 patients had GTCS & 3 patients had CPS-sec Gen type of seizures, and the etiology among them being Idiopathic in 2 patients, post stroke in 4 patients & in 1 patient due to tumour.

4. Prodrome-11 Patient had Prodromal Symptoms

Among 11 patients who had prodromal symptoms, 8 patients (72.72%) presented with headache, 1 patient (9.09%) had fearfulness & 1 patient (9.09%) had mood changes, and 1 patients (9.09%) had irritability.

5. Aura

Among 50 patients, 10 patients (20%) had elementary aura, 3 patients among elementary aura (30%) had sensory aura, 6 patients (60%) had motor aura & 1 patient (10%) had autonomic aura.

Among 50 patients, 7 patients (14%) had complex aura, 2 patients had complex aura (28.57%) had cognitive aura, 3 patients (42.85%) had affective aura & 2 patients (28.57%) had psych motor/sensory aura.

6. Tongue Bite

Among 10 patients had tongue bite during seizures, of these 7 patients had GTCS and 3 patients had Partial seizures with secondary generalization.

7. Post-ictal Phenomena

Among 50 patients with post ictal phenomenon, 24 patients (48%) had cofusion, 8 patients had (16%) loss of consciousness, 6 patients (12%) had drowsiness 6 patients (12%) had headache, 6 patients (12%) had generalized bodyache.

8. Incontinence

Bladder incontinence was seen in 15 patients (30.0%) & Bowel incontinence was seen in 3 patients (6.0%).

9. Past History

9 patients (18%) had past history of stroke.

10. Family History

6 patients (12%) had family history of seizures.

11. Clinical Examination

Abnormalities on neurological examination identified in 9 patients (18%), among them 2 patients (22.22%) had right hemi paresis, 5 patients (55.55%) had left hemi paresis and 2 patients (22.22%) had Aphasia.

12. EEG Abnormalities

EEG abnormalities were seen in 16 patients (32%), among them 7 patients (14%) had focal EEG abnormalities and 9 patients (18%) had generalized EEG abnormality.

13. ETIOLOGY

Etiology in generlized seizures

Table 2 shows, among 50 patients, 32 patients (64%) had generalized seizures, among them 10 patients (31.25%) etiology could not be ascertained. Among the 22 symptomatic patients (68.75%), 9 patients (28.12%) had post stroke, 1 patient (3.12%) had metastasis, 7 patients (21.82%) had metabolic etiology, 4 patients (12.5%) had infective etiology & 1 patient (3.12%) had tumor intracranial.

Table 1: Etiology in generalized seizures

Generalized	No (n=50)	%
1. Idiopathic	10	31.25
2. Symptomatic		
a) Post stroke	9	28.12
c) Metastasis	1	3.12
d) Metabolic	7	21.82
e) Infection	4	12.5
f) Tumour	1	3.12
Total	32	100

Etiology in partial seizures

Table 2 shows, among 50 patients, 18 patients (36%) had partial seizure; among them 6 patients (33.33%) etiology could not be ascertained. Among the 12 symptomatic patients (66.66%), 7 patients (11.11%) had post stroke, 2 patients (11.11%) had tumor intracranial, 2 patients (11.11%) had metastasis, 1 patient (5.55%) had infective etiology.

Etiology of late onset seizures

Table 3 shows, among 50 patients, 16 patients (32%) etiology could not be ascertained. Among the 34 symptomatic patients (68%), 16 patients (47.05%) had post stroke, 1 patient (2.94%) had NCC, 3 patients (8.84%) had tumor, 3 patients (8.84%) had metastasis, 7 patients (20.58%) had metabolic etiology and 4 patients (11.76%) had infective etiology.

FOLLOW UP

- Patients were followed up for 6 months
- Out of 50 patients 3 expired and 11 dropped out
- Of these 36 patients 7 had recurrence due to non compliance, were on 2 AED (Antiepileptic drugs)
- Remaining were seizure free of which 22 were on 1 AED and 7 were on 2 AED.

DISCUSSION

In this study of clinical profile and etiological analysis of late onset seizures, a total of 50 patients were included over a period of 2 years.

Table 2: Etiology in partial seizures

Partial seizures	No (n=50)	%
1. Idiopathic	6	33.33
2. Symptomatic		
a) Post Stroke	7	38.88
b) Tumor	2	11.11
c) Metastasis	2	11.11
d) NCC	1	5.55
Total	18	100

Table 3: Etiology in the present study

Causes	No (n=50)	%
1. Idiopathic	16	32.0
2. Symptomatic	34	68.0
a) Post stroke	16	47.05
b) NCC	1	2.94
c) Tumour	3	8.84
d) Metastasis	3	8.84
e) Metabolic	7	20.58
f) Infection	4	11.76
Total	50	100

There was male preponderance in this study as quoted by other studies in United States and Europe (Granieri et al. 1983).[3]

It is well known fact that as one enters adult life, partial seizures with or without generalization becomes the predominant seizure type. In current study partial seizures with or without secondary generalization accounted for 36% of the cases.

Simple partial seizures were observed in 6 patients (12%) 4 had motor and 2 had sensory seizures, one of the patient with sensory seizure had no focal neurological deficit but CT scan showed tumor in the temporal region, olfactory and gustatory symptoms are most often associated with temporal lobe involvement (Howe & Gibson 1982).

Simple partial motor seizures seen in 4 patients of this 3 had localized to upper limb & 1 to the face. Such a frequent involvement of hand and face is because of disproportionate involvement of motor cortex in representing hand and face.

Of the 12 patients with complex partial seizures with or without secondary generalization 5 (10%) were idiopathic and 7 symptomatic of this 4 post stroke, 1 Neurocysticercosis & 1 tumor.

A positive family history was noted in 3 (6%) patients in first degree relatives, which was similar to studies in India observed in 5.2% to 8.9% (Koul et al, Rural Kashmir India, Das SK et al. Rural Bengal).[4,5]

Neurological abnormalities were detected in 9 (18%) patients; radiological abnormalities were detected in all patients (100%). In remaining 41 patients neurological examination were normal and radiological abnormalities were noted 15 (30%) patients. These results can be compared to study in Spain 1985 where a total of 250 patients were studied, of these only 41 (16.4%) patients had focal neurological deficit. CT scan abnormalities were found in 92.6% (38 of 41 patients) of the patients with focal neurological findings and 42.5% (89 of 209 patients) with normal neurological examination.

Almost all grey matter conditions can result in seizures and the range of causes is strongly age dependent. In current series 32% were Idiopathic & 68% were symptomatic seizures. Most frequent cause was post stroke seizures (32%), metabolic (14%), Infections (8%), Tumour and metastasis (6%) each.

These Results can be Compared with Few Studies as Follows

In a study of 248 patients by Martinez et al. [13] (1998) Spain, with age of onset after 20 years the most frequent etiologies

were stroke (26.2%), tumors (26.2%), unknown (24.6%) and chronic alcoholic intake (18.5%). Stroke was the most common etiology in patients over 60 yrs of age.

In another study Jimenez et al (1990),[6] etiology was unknown in 51.3% of cases. The most common identified causes were Cerebrovascular disease (20%). Chronic alcoholic abuse (10%), tumors (6.3%), neurocysticercosis (6.3%) and post traumatic (2.5%).

In a study of 250 patients with Late Onset Seizures by perez Lapez et al (1985),[7] Etiology was identified in 201 patients with most frequent cause being chronic alcohol abuse (24.8%) followed by tumor (16.4%), post stroke (13.2%) and post traumatic (11.2%).

In a study in Mexico by medina et al (1990), a total of 100 patients, 50 patients (50%) had neurocysticercosis as the cause.

In a more recent study in Madagascar[8] based on serological analysis of epileptic Vs nonepileptic controls, neurocysticercosis was suggested most important etiological factor for late onset seizures.

The most common cause identified was post stroke which was noted in 16 patients (32%). The mean age at presentation was 58 years with male to female ratio 1.28:1.4 of these patients presented with status epilepticus. Of these patients generalized seizures was observed in 9 patients (56.25%), simple partial seizures in 2 patients (12.5%), 5 patients presented with complex partial seizures with secondary generalization (31%).[9,10] 12 of these patients had scan findings of ischemic infarcts whereas hemorrhagic stroke was noted only in 4 patients. 3 patients with scan evidence of old stroke presented with seizures. Such a presentation has been described in literature. In a care control study by Robert et al.[11] (1998), CT scan evidence of vascular pathology was found in 15 of 132 patients with seizures after the age of 40 years who presented with seizures without any neurological findings. This has also been reported by Shinton et al (1987) who found 8 of their 176 cases (4.5%) had history of seizures before they presented to the hospital with first episode of stroke. These patients were diagnosed to have "Vascular precursor Epilepsy" as coined by Barolin (1982).[12]

Cerebral venous thrombosis was diagnosed in 3 patients with mean age of 36.3 years.

Neurocysticercosis was diagnosed in 1 patient (2%) in this study, the diagnosis was made on radiological grounds & was confirmed by repeating CT scan after 2 months of therapy with albendazole (15 mg/kg for 4 weeks) which showed clearing of the lesion, patient presented with complex partial seizures. The frequency with which it occurs as a cause of late onset seizures varies according to the geographical area. It was the most common cause in Mexico & Madgascar.[8]

Cerebral tumor were noted as cause of seizures in 3 patients (6%) with mean age of presentation of 46.3, male to female ratio 1:2. Of which 2 had simple partial seizures, one presented with GTCS, 1 had meningioma and 1 had Glioma cerebral metastasis seen in 3 patients (6%) with mean age of 43 years and male to female ratio 2:1 of this one presented with simple partial seizures with secondary generalization, one with complex partial seizures with secondary generalization and one with GTCS, of this 2 had primary from lung.

It should be emphasized that despite careful investigation a sizeable proportion of patients (32%) were diagnosed as Idiopathic. More sensitive scanning techniques may help us to further sort out this group of Idiopathic seizure disorder into various etiologies.

CONCLUSION

1. In this study of late onset seizure, The mean age of onset of seizures was 49.3 & male preponderance was noted
2. Most common seizures type was GTCS (64%)
3. Underlying causes were recognized in 68.0% (i.e., symptomatic seizures)
4. Most common etiology of seizure with onset after 25 years of age was post stroke (16 out of 34 patients accounting for 47%).
5. Between 30 to 60 years, most frequent etiologies were Idiopathic, post stroke and Metabolic.

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