

Original article:

Prospective study of clinical and etiological profile of late onset seizures

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Abstract :

Background: Epilepsy is a chronic neurological condition and the third most frequent and serious neurological disorder in the elderly following stroke and dementia. Diagnosis and treatment presents a challenge in elderly due to differences in the clinical presentation. And etiology as compared to younger persons and the presence of co-morbidities, cognitive problems and physiological changes that affect pharmacological management'

Aims: To determine the clinical profile and etiology of seizures in elderly patients in tertiary care centre .methods and study design :In this cross sectional prospective of 55 elderly patients with Seizure were evaluated by necessary investigations , demographic details n etiological details are collected from November 2020 to may 2021 Results: Out of 55 patients, 36 (65.45%) were male and 19 (34.54%) were female. The most common etiology was cerebrovascular disease (30), followed by focal cerebral calcifications single or multiple (1), tumors (8), trauma (3) dementias (3) and unknown (10).The most common type of seizure in the group studied was generalized (28) followed by focal seizures (26).Hypertension was the most common comorbidity found in 25 patients

Conclusion: This study suggests seizures and epilepsy in the elderly in patients have etiological association with stroke, neoplasias and dementias.

Keywords: seizures, stroke , elderly, epilepsy

Introduction:

Seizures is a transient disturbance of cerebral function due to an abnormal paroxysmal neuronal discharge in the brain ¹. Seizure disorder affects about 50 million people worldwide ². . Epilepsy is a chronic neurological condition and the third most frequent and serious neurological disorder in the elderly following stroke and dementia³ And also The prevalence of active epilepsy in the elderly is up to 1.5%, almost three times higher than in younger adults, but among nursing home residents may exceed 5%⁵. Diagnosis and treatment presents a challenge in elderly due to differences in the clinical presentation. And etiology as compared to younger persons and the presence of co-morbidities, cognitive problems and physiological changes that affect pharmacological management. Worldwide, it is estimated that nearly 70 million people suffer from epilepsy, and nearly 90% of them are found in developing countries ⁴. There are more than 12 million persons with epilepsy in India, which contribute to nearly one-sixth of the worldwide burden. In Uttar Pradesh, which is one of the biggest states of India and accommodates.

Aims and Objectives of the study:

To determine the clinical profile and etiology of seizures in elderly patients in tertiary care centre .

Material and Method of collection of data:

Source of data: The study will be conducted on 55 elderly patients with seizures admitted in Department of medicine, Shivamogga Institute of Medical sciences and Research Institute and attached hospitals, Shivamogga

Study design: Prospective study.

Period of study: November 2020 to May 2021.

Place of study: Department of Medicine, Shivamogga Institute of Medical sciences and Research Institute and attached hospitals, Shivamogga.

Sample size:

55 elderly patients with seizures who give consent for study and satisfying the inclusion criteria and

Based on previous study by Archana verma et al⁶

Inclusion criteria :

Patients with seizures with Age >55 years

Exclusion criteria:

Age < 55 years , Seizures secondary to Metabolic causes

Details about each patient's medical history, family history, and seizure description, circumstances of seizures, neurological findings, and treatment were recorded by preformed questionnaires. The clinical data of these patients were consecutively, systematically, and prospectively recorded in a database.

All the patients who fulfilled the inclusion criteria were subjected to serum biochemical assay for glucose, electrolytes, liver and renal functions, and lipid profile. Besides these, patients underwent evaluation with chest X-ray, ultrasound abdomen, cardiac echo, routine ECG, and thyroid function tests (T3, T4, TSH) wherever deemed necessary. Routine electroencephalogram (EEG) was done over all the patients. All the patients underwent brain imaging in the form of computerized tomography (CT) scan of the brain (plain scan in all and contrast-enhanced CT whenever considered necessary). The MRI of brain was carried out, based on clinical indications and affordability.

Observation and Results:

A total of one hundred and ten patients were included in the study; among them, 36 (65.45%) were male and 19 (34.54%) were female

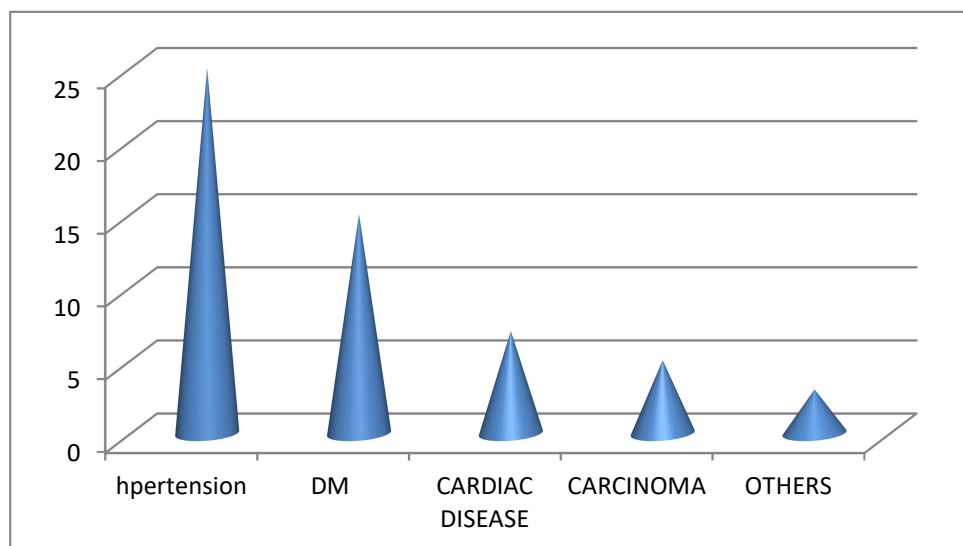
Table 1 . Clinical profile seizures(type of seizures) of patients

Type	Total subjects -55
1.Generalised seizure	
Tonic-clonic	20
Tonic	8
2.Focal	
Focal with motor	13
Focal with dyscognitive features	10
Focal with bilateral convulsive seizures	3
3.Unknown	1

Table2. Distribution of etiology among patients

Type of etiology	Numbers (55)
1.Infarct	20
2.Infarct with hemorrhagic transformation	3
3.Hemorrhage	7
4.Tumours	
Primary	4
Secondary	4
5 Trauma	3
6 Dementia	3
7 others	1
8 Unknown	10

Table3 . Co-morbidities with epilepsy



Graph showed the patients with hypertension have more seizures compare to other co morbidities

Discussion:

The study was conducted on 55 elderly patients with seizures, which includes new onset also. Sridharan et al⁶. (in their meta-analysis from India) demonstrate that prevalence rate was at its highest point in the age group of 10–19 years (0.89%), then continued to decline with age, reaching 0.21% for those >50 years. In this study we found that most common seizures is Generalised tonic clonic seizures(20), followed by focal motor seizures(13) followed by others, which is similar to study conducted by Archana et al⁷. Focal seizures occur more frequently than generalized seizures (of any type) in elderly⁸, but generalized seizure disorders do occasionally first manifest themselves in this age group⁹. Thus, EEG recording in this age group may be required to classify seizure type, particularly if there is the possibility of a generalized seizure disorder.

Stroke is the common cause of seizures in the elderly^{8,10}. The rate of seizures after stroke changes broadly in the literature (2.7–42.8%) because of diverse incorporation criteria, study outlines, and detection modes¹¹. The

Oxfordshire Community Stroke Project suggested a cumulative risk of 11.5% for the development of seizures within 5 years of age¹².

In our study also stroke found to be common etiology for the seizures among stroke, infarct noted more followed by Hemorrhage, unknown etiology and tumours. Which is similar to study conducted by Assis et al.'s result¹³, who also reported that ischemic stroke (37%) was more common than hemorrhagic stroke (12%). Predictors of seizures with ischemic stroke include severity (initial and persistent), large size, embolic cause, and involvement of the cortex, hippocampus or multiple brain areas^{14,15}

Hypertension (36.36%) was the most common co-morbidity present in our study followed by diabetes mellitus, which is fairly similar to other studies¹³.

Limitation:

Small sample size, hospital based study (not included random sample)

Conclusion:

Finally, this study suggests that seizures in the elderly patients have etiological relationship with stroke, tumors and dementias. CNS infections represent a considerable number of cases of remote symptomatic seizures in elderly in our region where neurocysticercosis is endemic. In spite of after imaging study few patients of this study showed no etiological association, However, the distinguishing proof of definite etiology relies upon the force of accessible workup, which is a

Restricting variable in developing nations. So large population study needed in developing countries like India to know real burden of disease

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For any images presented appropriate consent has been obtained from the subjects: NA

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