

A Study on Clinical Profile of New Onset Focal Seizures in a Tertiary Care Centre

Dr. K. S. Amaravathi*, Dr. R. Nagamani**, Dr. P. Sakuntala*, Dr. M.N.Shyamsunder**, Dr.P.V. Rajasekhar***, Dr. V. Gopalakrishna****

* Asst Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.

** Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.

*** Assciatet Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.

**** Postgraduate Resident, Osmania Medical College, Hyderabad, Telangana State, India.

Abstract- Background: Epilepsy can be associated with profound physical, social and psychological consequences. Seizures beginning in adult life are likely due to an identifiable cause as compared to those beginning in childhood which are more likely to be idiopathic.

Objectives: To study the clinical profile of new onset focal seizures

Materials and methods: This is a prospective study of 50 cases of new onset focal seizures attending Osmania general hospital medical outpatient department and admitted in medical wards between January 2013 to June 2014. Thorough clinical examination to detect any abnormality in the central nervous system and also to screen the systemic diseases with special attention to tuberculosis and neurocysticercosis was done. Diagnosis was verified by investigations like CT Scan, MRI, EEG and CSF analysis.

Results: Majority of the patients belonged to the age group of 28-37 years. Male to female ratio was 1.5:1. Etiological factors in the decreasing order of frequency are as follows: Post stroke epilepsy (38%), Calcified granuloma (14%), Neurocysticercosis (14%), Tuberculoma (10%), Idiopathic (10%), Brain tumor (6%), Brain abscess (4%) and Meningitis(4%).

Conclusion: Cerebrovascular disease was the most common etiology after 50 years of age whereas calcified granuloma, neurocysticercosis, tuberculoma and epilepsy were common in younger individuals.

Index Terms- New onset focal seizures, Cerebrovascular disease, Calcified granuloma, Neurocysticercosis

I. INTRODUCTION

Epilepsy describes a condition in which a person has recurrent seizures due to chronic underlying process that affects people of all ages. Epilepsy refers to a clinical phenomenon rather than a single disease entity, since there are many forms and causes of epilepsy.^{1,2}

Epilepsy is a major public health concern in terms of the burden of the disease, nature of illness and its impact on individuals and families. It has been estimated that, globally, at any time there are at least 50 million people with epilepsy and 85% of them are in developing countries.^{3,4} However, in developing countries, given the high incidence of epilepsy, the

prevalence is relatively low, which may be due to the poor prognosis and high mortality for people with epilepsy⁵. This poor prognosis is mainly because of a large treatment gap along with poor health seeking behaviour of people⁵. In a meta-analysis of previously published and unpublished community-based studies, the overall prevalence of epilepsy in India was found to be 5.3%; slightly higher in the rural areas with a prevalence of 5.5%⁶. The incidence of epilepsy in India is estimated to be 49.3 per 100 000, leading to about half a million new cases every year⁷.

Focal seizures arise from a neuronal network either discretely localized within one cerebral hemisphere or more broadly distributed but still within the hemisphere. With the new classification system, the subcategories of "simple focal seizures" and "complex focal seizures" have been eliminated. Instead, depending on the presence of cognitive impairment, they can be described as focal seizures with or without dyscognitive features. Focal seizures can also evolve into generalized seizures.⁸

With the history and clinical examination, if proper analysis of etiology is made with available investigations, the epilepsy can be treated accordingly thus reducing the morbidity and mortality associated with it.

Hence, this study is aimed at evaluating the clinical profile and etiological analysis of new onset focal seizures in adults of more than 18 years of age.

II. OBJECTIVES

To study the clinical profile of new onset focal seizures and to analyze the etiological agents of new onset focal seizures.

III. METHODOLOGY

Patients with age at onset of seizures >18 years and epilepsy diagnosed according to ILAE, attending Osmania General Hospital between January 2013 to June 2014 were included in the study. Patients with age at onset of seizures <18 years, patient who is known case of seizure disorder and seizures due to metabolic causes and Pseudo Seizures were excluded from the study. All patients selected were subjected to detailed history, clinical examination and investigations (Complete Blood Picture, Random Blood Sugar, Blood urea, Serum creatinine, Serum electrolytes, HIV1&2, VDRL, CT Brain, CSF analysis, MRI

Brain, EEG and other relevant investigations). The patients were classified according to the ILAE classification.

International League against Epilepsy (ILAE) Commission on Classification and Terminology, 2005 -2009 has provided an updated approach to classification of seizures

1. FOCAL SEIZURES
a. Focal seizures without dyscognitive features (with motor, sensory, autonomic or psychic symptoms),
b. Focal seizures with dyscognitive features ,
c. Evolution of focal seizures to generalized seizures .
2. GENERALIZED SEIZURES
a. Typical absence seizures ,
b. Atypical absence seizures ,
c. Generalized, tonic-clonic seizures,
d. Atonic seizures,

e. Myoclonic seizures
3. UNCLASSIFIABLE SEIZURES
Epileptic spasms

All patients were started on appropriate antiepileptic drugs and other medications depending on the etiological factors.

IV. RESULTS

From January 2013 to June 2014 a total of 50 patients with new onset focal seizures attended medical OPD and admitted to medical wards. There were 30 males and 20 females with a male to female ratio of 1.5: 1. The maximum number of patients were in the age group of 28 - 37 years of age.

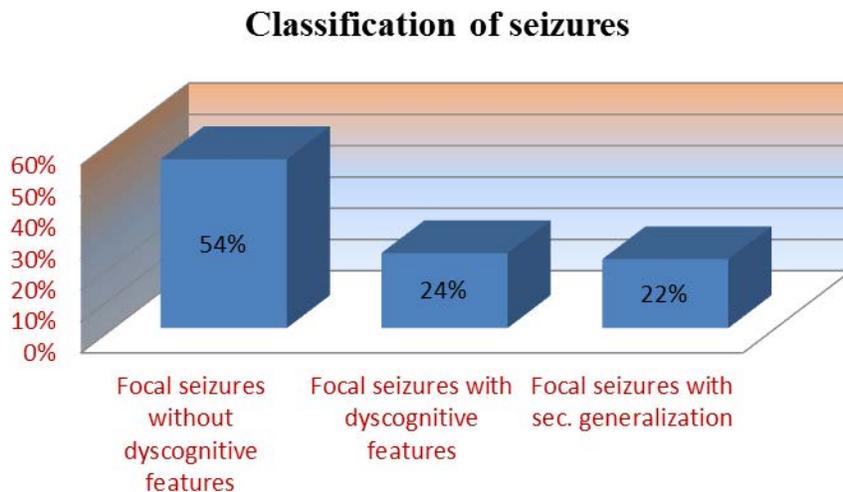
Table: Age distribution

Age group in years	18-27	28-37	38-47	48-57	58-67	>67	Total
Number, %	9(18%)	13(26%)	3(6%)	10(20%)	9(18%)	6(12%)	50(100%)

Out of 50 cases 27(54%) patients presented with focal seizures without dyscognitive features, 12(24 %) patients had focal seizures with dyscognitive features and 11(22%) patients

presented with focal seizures evolving in to secondary generalization.

Fig: Classification of seizures

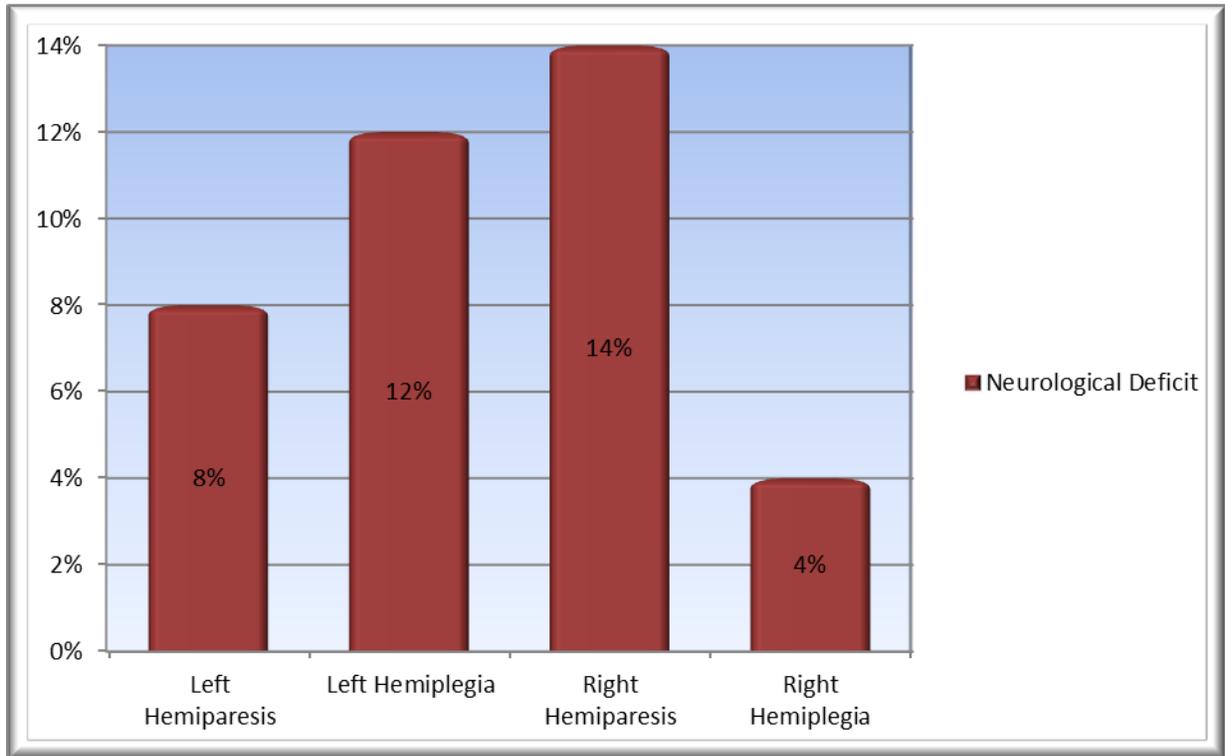


6 (12%) patients presented with epilepsy partialis continua. 24(48%) patients presented with prodromal symptoms and aura preceding seizures which were more significant in patients with dyscognitive features and secondary generalization. 15(30%) patients in our study had post-ictal phenomenon in the form of confusion, disorientation, loss of consciousness, drowsiness, headache, generalized body aches, Todd's paralysis, aphasia, amnesia and mood changes.

No significant family history was noted among patients in the study.

Neurological deficit was present in 19(38%) patients. 7(14%) patients had right hemiparesis, 2(4%) patients had right hemiplegia, 4(8%) patients had left hemiparesis and 6(12%) patients had left hemiplegia.

Figure: Neurological deficits

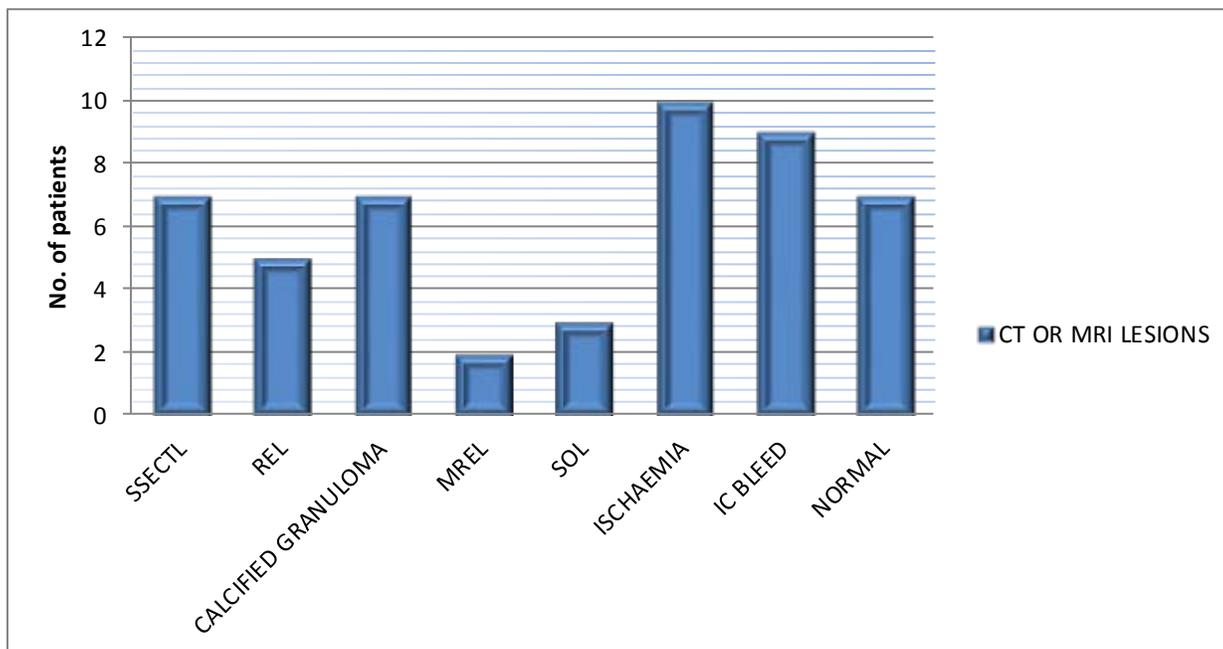


Among the etiological factors post stroke epilepsy (n=17, 38%) was the commonest cause followed by calcified granuloma (n=7, 14%), neurocysticercosis (n=7, 14%), tuberculoma (n=5, 10%), idiopathic (n=5, 10%), brain tumors (n=3, 6%), brain abscess (n=2, 4%) and Meningitis (n=2, 4%).

In our study all patients underwent CT Brain (plain or Contrast) or MRI Brain depending upon the requirement for diagnosis.

Of these 43(86%) patients showed abnormal imaging findings. 19(38%) patients had CVA (Infarction in 10 and hemorrhage in 9 patients), 7(14%) patients had single small enhancing CT lesions, 5(10%) patients had ring enhancing lesions, 7(14%) patients had calcified granuloma, 3(6%) patients had space occupying lesions and 2(4%) patients had multiple ring enhancing lesions. 7(14%) patients did not have any radiological abnormalities.

Figure: Imaging abnormalities



V. DISCUSSION

We had 50 cases of new onset focal seizures. The maximum number of patients were in the age group of 28-37 years. The age was lower in other studies (mean age of 14.8 years and 25 years in studies by Thomas S V et al⁹, and Dilli Ram Kaffle¹⁰) as we had excluded patients <18 years of age and those with previous history of seizures. There was a slight male (M:F=1.5:1) preponderance similar to that of a study by Dilli Ram Kaffle¹⁰(M:F=1.3:1).

None of our patients had family history of epilepsy contrary to the studies by Dilli Ram kaffle¹⁰(10%) and a study conducted in Sudan(20%).

The common causes of partial seizures in our study group in the decreasing order of frequency are post stroke epilepsy (n=17, 38%), calcified granuloma (n=7, 14%), neuro cysticercosis (n=7, 14%), tuberculoma (n=5, 10%), idiopathic(n=5, 10%), brain tumors (n=3, 6%), brain abscess (n=2, 4%) and Meningitis(n=2, 4%).

The etiological factors and imaging findings were similar to the studies by Dilli Ram Kaffle¹⁰, Trentin et al¹², Ravindra Kumar Garg et al¹², and Pradeep et al¹³.

EEG was abnormal in 25(50%) patients which was comparable to the studies by Dilli R Kaffle¹⁰(48.6%) and Joseph et al.,(47.1%)¹⁴.

Patients with Neurocysticercosis responded well to a combination of albendazole, steroids and anti epileptic drugs. Patients with Tuberculoma responded well to anti Tubercular therapy along with anti epileptics.

VI. CONCLUSION

This study highlights the current scenario of the pattern of new onset focal seizures in a tertiary care centre. The fact that seizures commonly affect the productive age group and mostly due to secondary causes are issues for concern. In the face of recent advances in neurophysiological investigations, an accuracy in identifying etiopathogenesis of underlying cause of seizures, the future prospective management of seizures appears bright and convincing.

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AUTHORS

- First Author** – Dr. K. S. Amaravathi, Asst Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.
Second Author – Dr. R. Nagamani, Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.
Third Author – Dr. P. Sakuntala, Asst Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.
Fourth Author – Dr. M.N. Shyamsunder, Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.
Fifth Author – Dr. P. V. Rajasekhar, Associate Prof. of Medicine, Osmania Medical College, Hyderabad, Telangana State, India.
Sixth Author – V. Gopalakrishna, Postgraduate Resident, Osmania Medical College, Hyderabad, Telangana State, India.