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# Original Research

## Assessment of cases of pediatric epilepsy

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***ABSTRACT*:**
**Background:** Seizures are defined as a transient occurrence of signs and symptoms due to the abnormal, excessive, or synchronous neuronal activity in the brain characterized by abrupt and involuntary skeletal muscles activity. The present study assessed case of epilepsy in children. **Materials & Methods:** The present study was conducted on 82 children age ranged 4- 16 years of both genders. All children were confirmed cases of epilepsy. A through clinical examination was done. Patients were subjected to EEG, CT scan and MRI. Their findings were recorded. **Results:** Out of 82 patients, boys were 52 and girls were 30. Common clinical findings was fever in 48, cough in 30, vomiting in 15, lethargy in 40, altered sensorium in 19 and ear discharge in 22. The difference was significant (P< 0.05). Common type was tonic seen in 30, clonic in 12, myoclonic in 10, absence in 15, atonic in 6, simple partial in 5 and complex partial in 4. The difference was significant (P< 0.05). **Conclusion:** Authors found that most common seizure was tonic, clonic and myoclonic. Careful evaluation of cases is required.
**Key words:** Epilepsy, Seizures, Tonic

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## INTRODUCTION

Seizures are defined as a transient occurrence of signs and symptoms due to the abnormal, excessive, or synchronous neuronal activity in the brain characterized by abrupt and involuntary skeletal muscles activity.[1] The adjective "transient" in the definition, indicates a time frame with a clear onset and remission. Status epilepticus (SE) is a condition resulting either from the failure of the mechanisms responsible for seizure termination or from the initiation of a mechanism, which leads to abnormally, prolonged seizures (for a time period of 5 min or more). It is a condition, which can have long-term consequences (especially if its duration is more than 30 min) including neuronal death, neuronal injury, and alteration of neuronal network, depending on the type and duration of seizures.[2] In epilepsy, a common problem is diagnostic accuracy as it can be diagnosed only by taking a history of the index event or by chance observation of a seizure.' The diagnosis is fundamentally a discretionary judgement which depends on the skill and experience of the physician and the quality of witness information available. Common sources of confusion are syncope or psychogenic attacks. As many as 10%-20% of cases referred to specialized epilepsy units with seemingly intractable seizures do not have epilepsy.[3] The present study assessed cases of epilepsy in children.

## MATERIALS & METHODS

The present study was conducted in the department of Pediatrics. It comprised of 82 children age ranged 4- 16 years of both genders. All children were confirmed cases of epilepsy. The study was approved from ethical committee. Parents were informed regarding the study and written consent was obtained.

Data such as name, age, gender etc. was recorded. A through clinical examination was done. Patients were subjected to EEG, CT scan and MRI. Their findings were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Total- 82 | | |
|---|---|---|
| **Gender** | **Boys** | **Girls** |
| Number | 52 | 30 |

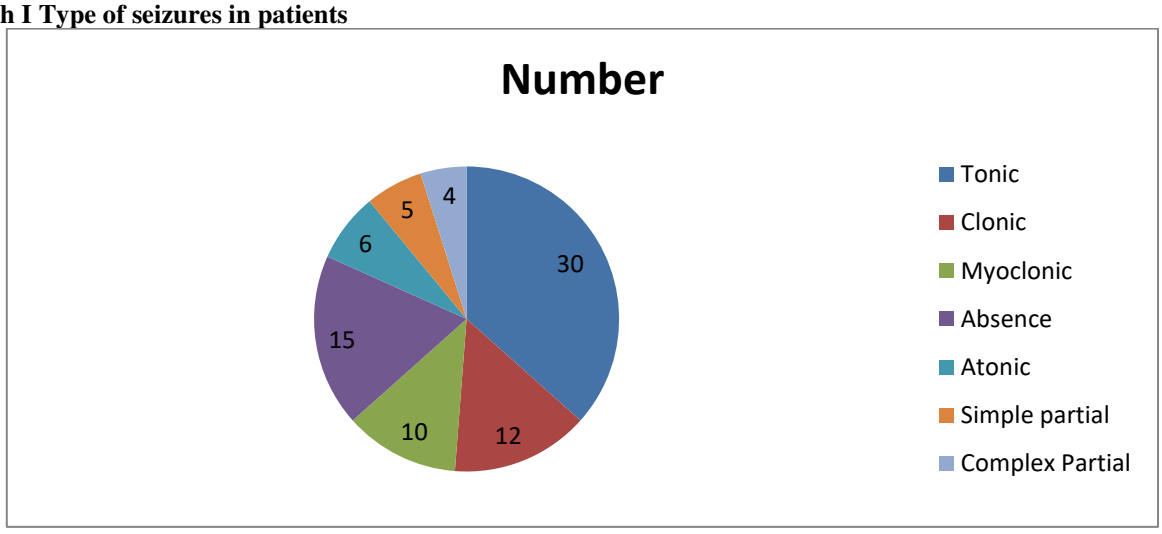
Table I shows that out of 82 patients, boys were 52 and girls were 30.

**Table II Clinical features in patients**

| Clinical features | Number | P value |
|---|---|---|
| Fever | 48 | 0.01 |
| Cough | 30 | |
| Vomiting | 15 | |
| lethargy | 40 | |
| Altered sensorium | 19 | |
| Ear discharge | 22 | |

Table II shows that common clinical findings was fever in 48, cough in 30, vomiting in 15, lethargy in 40, altered sensorium in 19 and ear discharge in 22. The difference was significant (P< 0.05).

**Graph I Type of seizures in patients**




Graph I shows that common type was tonic seen in 30, clonic in 12, myoclonic in 10, absence in 15, atonic in 6, simple partial in 5 and complex partial in 4. The difference was significant (P< 0.05).

## DISCUSSION

The emergency department generally is the place where children affected by seizures receive first treatment and medical support. Proper skills of physicians are essential for early diagnosis, treatment, and adequate communication with the parents.[4] The incidence of epilepsy varies between industrialized countries and developing ones. In Western countries, new cases per year are estimated to be 33.3–82/100,000, in contrast to the maximum incidence of 187/100,000 estimated in developing countries. In particular, recent studies showed that the maximum incidence occurs in the first year of age with a rate of 102/100,000 cases per year, just like the age range from 1 to 12; in children from 11 to 17 years old incidence is 21–24/100,000 cases. Previous studies suggest that the total incidence of epilepsy is constant from 25 years, showing a slight increase in males.[5,6] The present study assessed case of epilepsy in children.

In this study, out of 82 patients, boys were 52 and girls were 30. Ojha et al[7] found 112 744 children aged 3 to 13 years (mean 7.4 years) at end of registry follow-up Of these, 896 had registry recordings and/or questionnaire reports of epilepsy. After validation, 587 (66%) met the criteria for an epilepsy diagnosis. The incidence rate of epilepsy was 144 per 100 000 person-years in the first year of life and 58 per 100 000 for ages 1 to 10 years. The

cumulative incidence of epilepsy was 0.66% at age 10 years, with 0.62% having active epilepsy. The 309 children (34%) with erroneous reports of epilepsy from the registry and/or the questionnaires had mostly been evaluated for non epileptic paroxysmal events, or they had undergone electroencephalography examinations because of other developmental or neurocognitive difficulties.

We observed that common clinical findings was fever in 48, cough in 30, vomiting in 15, lethargy in 40, altered sensorium in 19 and ear discharge in 22. Common type was tonic seen in 30, clonic in 12, myoclonic in 10, absence in 15, atonic in 6, simple partial in 5 and complex partial in 4. Shrestha et al[8] found that incidence of seizures decreased with increasing age. The most common type of seizure was generalized tonic clonic seizure. Etiological analysis revealed CNS infections to be commonest cause of seizure in pediatric age group, followed by Space occupying lesions, epilepsy, febrile seizures and metabolic causes. Febrile seizures had best outcome while CNS infections had highest morbidity and mortality.

The exact mechanism of seizure onset is unknown. There could be either a deficit of neuronal inhibition or an excess of excitatory stimuli.[9] Most authors suggest that the onset of seizures depends on a deficit in the neuronal inhibition, in particular -Aminobutyric acid (GABA) deficit, the most important neurotransmitter of CNS; alternatively it depends on the alteration of the GABA function which determines a prolonged and high intensity stimulation. Other studies, in experimental animal models, demonstrated that N-methyl-D-aspartate (NMDA) and alpha-amino-3-hydroxy-5-methyl-4-isoxazole-propionic acid, both glutamate receptors, the most important excitatory receptor of CNS, are involved in seizure physiopathology. Febrile seizures

occur in young children whose convulsive threshold is lower. Children are more exposed to frequent infections like: respiratory high tract infections, otitis media, viral infection where children present high temperature.[10]

## CONCLUSION

Authors found that most common seizure was tonic, clonic and myoclonic. Careful evaluation of cases is required.

## REFERENCES


1. Dougherty, D.; Duffner, P.K.; Baumann, R.J.; Berman, P.; Green, J.L.; Schneider, S.; Hodgson, E.S.; Glade, G.B.; Harbaugh, N.; McInerny, T.K.; et al. Febrile seizures: Clinical practice guideline for the long-term management of the child with simple febrile seizures. Pediatrics 2008; 121: 1281–1286.
2. Kapur, J. Status epilepticus in epileptogenesis. Curr. Opin. Neurol. 1999, 12, 191–195.
3. Astuto, M.; Minardi, C.; Rizzo, G.; Gullo, A. Unexplained seizures in an infant. Lancet 2009, 373, 94.
4. Johnston MV. Seizures in children. In: Behrman RE, Jenson HB, Stanton BF, editors. Nelson Textbook of Pediatrics. 20th ed. Philadelphia: Saunders; 2015; 2823-63.
5. Friedman MJ, Sharieff GQ. Seizures in children. PediatrClin N Am 2006; 5(3):257-77.
6. Idro R, Gwer S, Kahindi M. The incidence, aetiology and outcome of acute seizures in children admitted to a rural Kenyan district hospital. BMC Pediatr. 2008; 13:5.
7. Neligan A, Hauser WA, Sander JW. The epidemiology of the epilepsies. In Handbook of clinical neurology 2012 Jan 1 (Vol. 107, pp. 113-133). Elsevier.
8. Ojha AR, Aryal UR. Clinico-etiological profile of children with seizures admitted in a tertiary centre. Journal of Kathmandu Medical College 2015; 4 (2):1-7.
9. Shrestha JH, Hirtz DG, Nelson KB. Age of onset of seizures in young children. Ann Neurol 1984;15(2):127-34.
10. Sander JW, Shorvon SD. Epidemiology of the epilepsies. Journal of neurology, neurosurgery, and psychiatry. 1996 Nov;61(5):433.
11. Cowan LD. The epidemiology of the epilepsies in children. Mental retardation and developmental disabilities research reviews. 2002;8(3):171-81.