

A STUDY ON ASSESSMENT OF AETIOLOGY, COMPLICATIONS AND TYPES OF SEIZURES IN PEDIATRICS**Ch. Sridevi*, Syed Nafeesa Fathima, Tofeet Unnisa and Yeluri Chetan Sai**

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ABSTRACT

Objective: The study's major goals were to identify the aetiology of seizures, identify the sort of seizure that affect children most frequently, and evaluate the problems associated with seizures. **Methods:** The origin and consequences of the pediatric population's seizures, which were identified in 100 individuals, were evaluated by an observational and retrospective analysis. The hospital preceptor carefully checked, vetted, and confirmed the data obtained before entering it into a Microsoft Excel spreadsheet for further study. **Results:** In the study group of 100 pediatric population members, prevalence was higher in males (57%) than females (43%). Febrile seizures are often diagnosed. Idiopathic and viral infections are the main aetiology, and knowledge deficit becomes the most aggravating condition if untreated. **Conclusion:** The most frequent form of seizures is febrile seizures. We have even found that idiopathic causes are the most common aetiology in epilepsy, followed by infections (viral) and unknown genetic factors. Knowledge deficit and incontinence are the most aggravating condition with future complications.

KEYWORDS: Epilepsy, Anti-epileptics, Autonomic malfunction, Loss of Consciousness.**INTRODUCTION**

A seizure is a brief, uncontrollable interruption of brain activity that can result in disability, LOC, aberrant motor activity, behavioral abnormalities, sensory disturbances, or autonomic dysfunction.

Epilepsy: two or more unprovoked seizures occurring 24 hours apart in a child >1 month old.

All epilepsies are seizures, but not all seizures are epilepsies.

Convulsions: When a person has convulsions, they have uncontrollable shaking that is both quick and rhythmic, with muscle tightening and relaxing frequently.^[1]

Symptoms include legs and arms jerking back and forth, Physical stiffness. Loss of awareness, A difficulty breathing, unexpectedly falling to the ground without warning, Ignorance of sound or language, nodding head rhythmically, Rapid eye blinking and staring, Lips turn tinted blue.^[2] Complications include^[3]: Permanent brain damage, Difficulty in learning, Ascending height, Low self-esteem, Knowledge deficit, Lack of recall, Undeveloped memory.^[4]

Aetiology: Neonates (<1month): Hypoxia and ischemia in perinatal life injuries and intracranial bleeding,

metabolic abnormalities (hypoglycemia, hypocalcemia, hypomagnesemia, drug withdrawal, developmental issues, genetic condition).^[5]

Infants and young children (>1 month and 12 months): Infections of the central nervous system, femoral seizures, and genetic diseases (metabolic, degenerative, and primary epilepsy syndrome).

Adolescents (10-15years): Brain tumour, traumatic injury, genetic abnormalities, and illicit drug usage.^[6]

Types of seizures**Focal seizures**

Without losing consciousness, focal seizures: since there is no unconsciousness involved, these seizures are referred to as simple partial seizures.

Focused seizures accompanied by diminished awareness: They are referred to as complex seizures. These seizures also involve a change in consciousness or awareness.^[7]

Generalized seizures

Absence seizures: The majority of young people who experience petit mal seizures do so. It was distinguished by launching into space for 5-10 seconds, with or

without small physical movements like lip smacking and eye blinking.^[8]

Tonic seizures: Muscle stiffness results, and consciousness may be impacted. It has an impact on the arms and legs and may even cause to fall.

Clonic seizures: It was related to jerking, and repetitive muscle movements.^[9]

Myoclonic seizures: Typically, it appears as quick, jerky motions.^[10]

Tonic-clonic seizures: Grand mal seizures are another name for them, and they can cause a person to lose consciousness suddenly and shake and stiffen up.^[11]

Febrile seizures: Febrile seizures are associated with fever in the absence of an intracranial infection, hypoglycaemia, or an acute electrolyte imbalance occurs in children between six months and six years.

MATERIALS AND METHODS

Study design

The study was an observational and retrospective study. The participant voluntarily agreed to participate in the study and was given the right to withdraw and discontinue participation at any time.

Source of data

The data was collected from both outpatient and inpatient departments and includes patient demographics,

past history of seizures, aetiology, symptoms, complications, and types of seizures.

Sample size

100 patients diagnosed with seizures were evaluated for types, aetiology and complications.

Study duration

This study was conducted over a period of six months.

Inclusion criteria

Both outpatient and inpatient of either sex of age group 1 day to 15 years undergoing treatment for seizures will be taken for the study. A patient who is willing and able to comply with laboratory visits are included in this study.

Exclusion criteria

Patients aged above 16 years. Patient who are pregnant, breastfeeding, or have comorbidities are not eligible. Patients who are not willing to participate are excluded from this study.

Methods

The data collection format was reviewed, verified and authenticated, and entered into Microsoft and Excel, which have been used to generate graphs, tables etc.

Consent

We got permitted by the higher hospital authorities to collect data from participants after obtaining patients consent to maintain confidentiality.

RESULTS

Table 1: Patient demographics by gender.

Sr. No.	Gender	Number of patients (n=100)	Percentage
1	Male	57	57%
2	Female	43	43%
	Total	100	100

Table 2: Patients' ages are spread out.

Sr. No.	Age group	Male	Female	Percentage (n=100)
1	0-11 months	-	1	1%
2	1-5 years	25	26	51%
3	6-10 years	16	13	29%
4	11-15 years	16	3	19%

Table 3: Indicates symptoms of seizures.

Sr. No.	Symptoms	NO. of patients (%) (n=100)
1	Fever	50%
2	LOC	45%
3	Up rolling of eyes	42%
4	Jerks	40%
5	Headache	37%
6	Altered sensorium	25%
7	Dizziness	25%

8	Deviation of mouth	18%
9	Frothing	12%
10	Slurred speech	12%
11	Lip smacking	10%
12	Vomiting	10%
13	Tongue bite	10%
14	Head injuries	5%

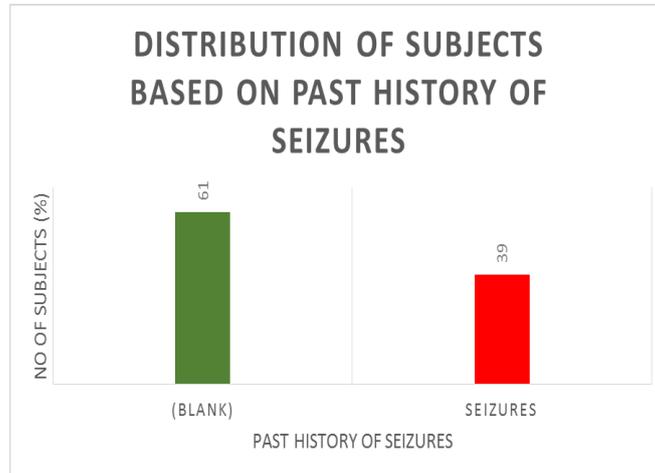


Fig. 1: Representation of past history of seizures.

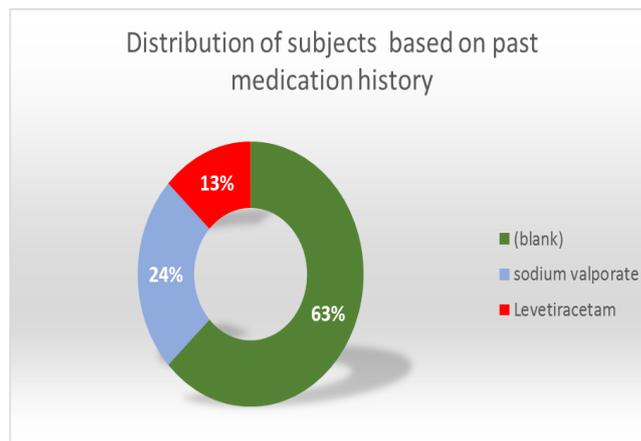


Fig. 2: Representation of past medication history.

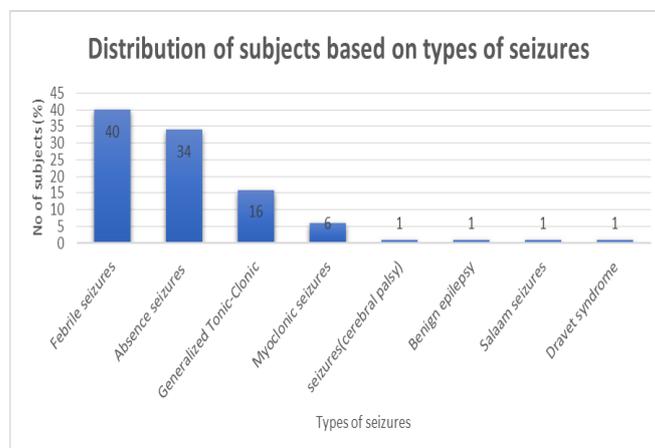


Fig. 3: Representation based on types of seizures.

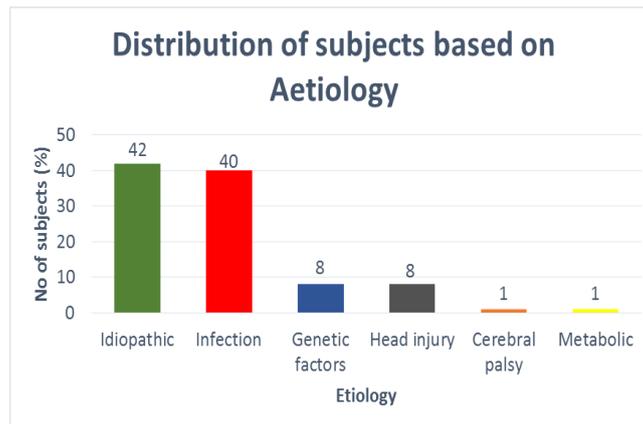


Fig. 4: Representation based on aetiology.

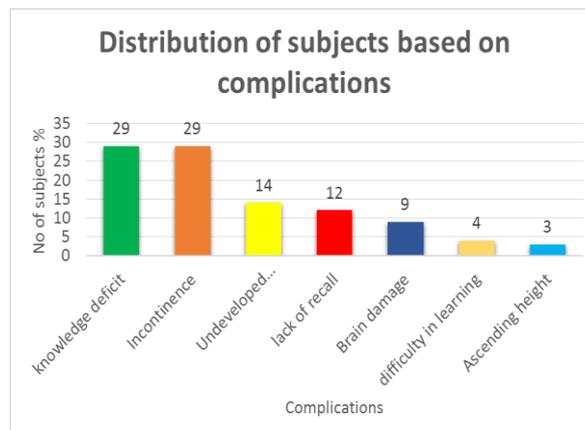


Fig. 5: Indicates the complications of seizures.

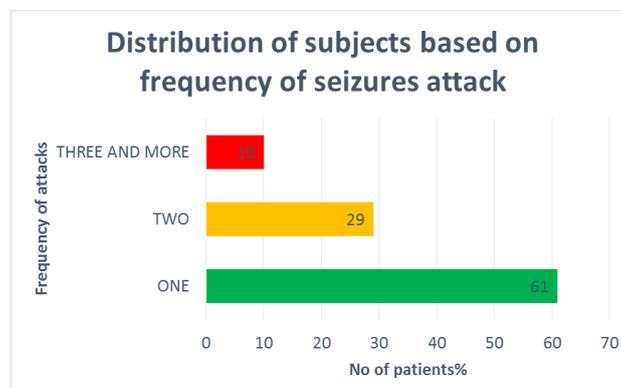


Fig. 6: Represents the frequency of seizures attack.

DISCUSSION

The study's primary goal is to detect and evaluate the aetiology, complications, and different types of seizures in children. The study was conducted in the multi-speciality hospital, considering both outpatients and inpatients. Data was collected from 100 patients using a data collection form.

In our study, among 100 patients, patients based on gender were analyzed; A male was found to be more highly affected than female, as shown in Table 1. A study reported by A L Christianson et al. indicates that males were more highly affected than females.^[12] Our study has a relatively high number of patients in the age groups

between 1 and 5 years, whereas the age group 6 and 10years, 11and 15years also hold a pretty high number of patients, as shown in Table 2. Arne Fetveit et al. study shows that children aged three months to 5 years are more affected.^[13] A study Checking with the symptom's, major presenting symptom was fever, followed by the LOC, up rolling of eyes, jerks, headache, altered sensorium, dizziness, deviation of the mouth, frothing, slurred speech, lip smacking, vomiting, tongue bite and head injury, as shown in Table 3. A study by Rebecca S et al. shows that fever, LOC, vomiting, and convulsions are the primary observed symptoms.^[14] From the collected data after assessing the past medication history, we have found that sodium valproate and levetiracetam

were found to be highly prescribed to patients diagnosed with past history of seizures, and to more than half of the patients, no medications were prescribed as these patients were early diagnosed with seizures but with no past medication history, as shown in figure 1 and 2. A study conducted by Rebecca L Bromley et al. Found that the commonly prescribed anticonvulsant is sodium valproate and levetiracetam.^[15] In the patients diagnosed with epilepsy in our study, febrile seizures were most commonly seen. Absence seizures have equal share in diagnosis, followed by Generalized Tonic Clonic seizures, myoclonic seizure, cerebral palsy, Salaam, benign and Dravet syndrome as depicted in figure 3. A study by Shlomo Shinnar et al. reported that febrile seizures are more frequent among children.^[16] Among 100 patients, the aetiology was assessed: most of the patients were idiopathic, followed by infections (viral), genetic factors, head injury, cerebral palsy and metabolic causes, as shown in figure 4. An MG Sturniolo et al. study indicates that idiopathic etiology is most common in children.^[17] Knowledge deficit and incontinence were found to be the major complications, followed by undeveloped memory, lack of recall, brain damage, difficulty learning and ascending height, as shown in figure 5. An HT Rwiza et al. study found that patients with seizures may show a complication of lack of knowledge.^[18] On analyzing the frequency of seizure attacks the one seizure attack is seen in most of the patients, as shown in figure 6. A study by Aune Hirvasniemi et al. found an increase in seizures in most patients who experienced a single attack.^[19]

CONCLUSION

According to our findings, febrile seizures are the most common type of seizures in children. We have even found that idiopathic causes are the most common aetiology in epilepsy, followed by infections (viral) and unknown genetic factors. Knowledge deficit and incontinence are the most aggravating condition with future complications; they even worsen the IQ score of the children in their growing stages. If left untreated without proper medications at the correct time, neurological conditions such as stroke and migraine substantially increase.

Abbreviations

Loc	Loss of consciousness
Na	Nor-adrenaline
Gaba	Gamma-amino butyric acid
Ade's	Antiepileptic drugs
Gtcs	Generalized tonic clonic seizures

Conflicts of interest

The authors declare that they have no conflicts of interest.

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