



CLINICO-ETIOLOGICAL PROFILE OF SEIZURES IN CHILDREN IN A TERTIARY CARE CENTRE IN SOUTH INDIA

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ABSTRACT **Introduction:** Seizure is the most common neurological illness in pediatric population, and its risk is highest in the first year of life. A comprehensive study regarding etiology, clinical profile is required, hence the current study was undertaken. **Objective:** The objective of this work was to study the etiology, clinical profile of seizures in children aged less than 18 years. **Materials and Methods:** A descriptive study of children with seizure was conducted at Neurology outpatient department, and references from pediatrics department. All children with seizures were included. Biochemical and haematological investigations, imaging, and electroencephalogram were performed whenever necessary. Simple descriptive statistics were used to analyse the data in the form of frequencies with percentages as applicable. **Results:** Out of 65 Pediatric patients who presented with seizures were Febrile seizure – Simple 4.6% (3), Atypical 29.2% (19), Fever precipitated seizure 32.3% (21), Seizure disorder with developmental delay 20% (13), Unprovoked 6.1% (4), others (5) **Conclusion:** Seizure was the commonest neurological condition of children presenting to neurology OPD and referred from pediatrics. Fever precipitated seizure being the commonest etiology. The prognosis and outcomes were good but there were prolonged days of hospitalization. Children with unprovoked seizures require brain-imaging studies for better understanding of seizure etiology.

KEYWORDS :

Introduction

Seizures are common pediatric neurological disorder. Four to 10% of children experience at least one episode of seizure in the first 16 years of their life.

Incidence is highest in children less than 3 years of age with a decreasing frequency from then on. Seizures are a transient occurrence of signs and/or symptoms resulting from abnormal excessive or synchronous neuronal activity in the brain. They account for 1% of all emergency department visits, and about 2% of visits of children's hospital emergency department visits. Worldwide, febrile seizures are the most common type of acute seizures in children. Central nervous system (CNS) infections are the main cause of seizures and acquired epilepsy in the developing world. Even after four decades of the initial studies on etiology and outcome of seizure in infants, not much information is available on this aspect in India. Based on recent International League Against Epilepsy (ILAE) definition of epilepsy, we can diagnose epilepsy even after first episode of seizures if there is a probability of further seizures similar to the general recurrence risk at least 60% after two unprovoked seizures, occurring over the next 10 years. This definition is very useful practically, as we can treat earlier, to prevent mortality and morbidity.

because of seizures, especially in developing countries like India.

Status epilepticus (SE) is a common pediatric neurological emergency which, if not managed promptly, may result in significant neuromorbidity and mortality and thus requires immediate and vigorous management. The longer it takes to gain control over seizures, worse is the neurological outcomes for the child, and the harder it is to terminate the seizures. The original International League Against Epilepsy (ILAE) definition of SE, by Gastaut: "an epileptic seizure that is sufficiently prolonged or repeated at sufficiently brief intervals so as to produce an unvarying and enduring epileptic condition" although vague, has allowed a dynamic interpretation. Subsequent definition of SE specifically defined it as continuous seizure activity or recurrent seizures without recovery of consciousness for >30 min. Later, operational definition for treatment purposes defined SE as >5 min of either continuous seizure activity or recurrent seizures without recovery in between. Seizure, a transient occurrence of signs and/or symptoms resulting from abnormal excessive or synchronous neuronal activity in the brain, is an important cause for hospital admissions in children from developing countries with increased prevalence in younger children.

seizure before 16 years of age, where 1/5th of total children with unprovoked seizures may develop epilepsy. Neonatal seizures (infections, birth asphyxia, and metabolic causes), febrile convulsions, meningitis, viral encephalitis, neurocysticercosis, cerebral malaria, and epilepsy (symptomatic, cryptogenic, and idiopathic) are common causes of acute seizures in children. Febrile seizures occurring commonly between 6 months and 5 years of age account for 2–5% of all children experiencing first episode of seizure before 5 years of age. Infections alone can be the major cause of seizures in developing nations. Neuroimaging (CT scan/MRI) plays an important role in the etiological diagnosis of seizures. Generally, neuroimaging is not necessary in well-appearing children after a first, unprovoked nonfebrile seizure. It has an important role in children with focal seizure or persistent seizure activity, focal neurologic deficit, neurocutaneous disorder, signs of elevated intracranial pressure, VP shunting, trauma, or travelling to cysticercosis endemic countries. Proper diagnosis, classification, and management are always challenging in a child with seizure.

OBJECTIVE: The objective of this work was to study the etiology, clinical profile of seizures in children below the age of 18 years

Materials and Methods: A study of children with seizure who presented to neurology OPD, references from department of pediatrics were included. Biochemical and haematological investigations, imaging, and electroencephalogram were performed whenever necessary. Simple descriptive statistics were used to analyse the data in the form of frequencies with percentages and median as applicable.

In this study, 65 children were analysed who were aged between New-born and 18 year, youngest being 43 days old and oldest being 15 years. Male preponderance was present wherein males were 53.9% and females were 46.1%. Out of 65 Pediatric patients who presented with seizures were Febrile seizure – Simple 4.6% (3), Atypical 29.2% (19), Fever precipitated seizure 32.3% (21), Seizure disorder with developmental delay 20% (13), Unprovoked 6.1% (4), others (5)

Positive family history was present in 4 cases (1.65%). Developmental history and assessment reports showed delay in 20% (13) children, significant history of perinatal insult was found in 20% (13).

Discussion

This was a hospital-based descriptive study conducted at a tertiary care hospital in Trichy in the Neurology outpatient department, and references from pediatrics department. Febrile seizure was commonest cause 33.8% (22) followed by fever precipitated seizure in

Studies suggest that around 4–10% of children have an experience of

32.3%(21%). Developmental delay was seen in 20% (13); the same was attributable to perinatal insult, cerebral malformations, syndromic associations. Seizure type assessment revealed that generalized seizures were most common, which was similar to the studies conducted by Adhikari et al., Idro et al., and Saravanan. Febrile seizures seen in 33.8 % with atypical seizures more common as simple febrile seizures were managed in outpatient basis in pediatric department. Other causes include PRES, drowning, trauma.

Conclusion

Children with seizures comprise a significant burden in inpatient department of developing countries with GTCS being more common and having various aetiologies. Proper study on clinicodemographic profile of seizures can help in proper understanding of the disease burden and to take appropriate measures for its control.

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