

A cross sectional study of etiology and characteristics of epilepsy and febrile seizures among children in a tertiary care centre

Radha lavanyaKodali¹, K Nagendra Prasad^{2*}

¹Assistant Professor, Department of Paediatrics, Dr PSIMS and RF, Chinnavutapalli, Andhra Pradesh – 521286, INDIA.

²Associate Professor, Department of Paediatrics, Santhiram medical college, Nandyal, Kurnool Dt. Andhra Pradesh, INDIA.

Email: knpsivayogi@yahoo.co.in

Abstract

Background: Febrile seizures (FS) is one of the common convulsive events in children **Aims and Objectives:** To study etiology and characteristics of epilepsy and febrile seizures among children in a tertiary care centre. **Methodology:** This was a cross-sectional study carried out in the department of Pediatric at tertiary health care centre during the one year period i.e. January 2017 to January 2018 in the patients presented with Febrile seizures at tertiary health care centre, in the one year duration there were 83 patients diagnosed clinically were included into the study. All details of the patients like age, sex, etiological factors if any were thoroughly investigated. All data presented in tabular form expressed in percentages. **Result:** The majority of the patients were in the age group 1 year-3 years were 42.17%, followed by 4 years-6 years were 22.89%, 7 years-12 years were 21.69% <1 year. were 9.64 %, >12 years were 3.61%. The majority of the patients were Male i.e. 63.86% and Female were 36.14. The majority of the associated factors were URTI in 38.55% URTI, followed by LRTI in 27.71%, Malarial fever in 16.87%, AGE in 12.05%, Others in 4.82%. The majority of the patients were having onset of seizures <24 hours of onset of Fever i.e. 51.81% followed by >24 were 25.30%, >72% were 22.89%, The majority of the patients were having Generalized seizure in 67.47%, followed by Undetermined-18.07%, Focal in 14.46%. **Conclusion:** It can be concluded from our study that the majority of the patients were in the age group 1 year-3 years, it was common in males, most common etiological factors were URTI LRTI, Malarial fever, AGE

Key Word: URTI, LRTI, AGE, febrile seizures

*Address for Correspondence:

Dr. K Nagendra Prasad, Associate Professor, Department of Paediatrics, Santhiram medical college, Nandyal, Kurnool, Andhra Pradesh, INDIA.

Email: knpsivayogi@yahoo.co.in

Received Date: 07/09/2018 Revised Date: 25/10/2018 Accepted Date: 15/11/2018

DOI: <https://doi.org/10.26611/1014823>

Access this article online

Quick Response Code:



Website:

www.medpulse.in

Accessed Date:
22 November 2018

Seizures with fever in children who have experienced a previous non-febrile seizure are excluded³. They are age-dependent and are uncommon before 6 months and after 5 years of age. It is divided into two types: simple and complex⁴. Between 2 to 5% of neurologically healthy children experience at least 1 FS episode in their lifetime⁵. Although earlier Indian studies⁶ suggested that up to 10% of children experience a FS, recent data indicate that the incidence rate in India is similar to western figures⁷. So we have studied the patients with febrile seizure at tertiary health care centre.

INTRODUCTION

Febrile seizures (FS) is one of the common convulsive events in children¹. The 1993 International League against Epilepsy defined a FS as “an epileptic seizure occurring in childhood associated with fever, but without evidence of intracranial infection or defined cause”².

METHODOLOGY

This was a cross sectional study carried out in the department of Pediatrics at tertiary health care centre during the one year period i.e. January 2017 to January 2018 in the patients presented with Febrile seizures at tertiary health care centre, in the one year duration there

were 83 patients diagnosed clinically were included into the study. All details of the patients like age, sex, etiological factors if any were thoroughly investigated. All data presented in tabular form expressed in percentages.

RESULT

Table 1: Distribution of the patients as per the age

Age	No.	Percentage (%)
<1Years	8	9.64
1 year-3 years	35	42.17
4 years-6 years	19	22.89
7 years-12 years	18	21.69
>12 years	3	3.61
Total	83	100.00

The majority of the patients were in the age group 1 year-3 years were 42.17% , followed by 4 years-6 years were 22.89% , 7 years-12 years were 21.69 <1Yr. were 9.64 % , >12 years were 3.61%.

Table 2: Distribution of the patients as per the sex

Sex	No.	Percentage (%)
Male	53	63.86
Female	30	36.14
Total	83	100.00

The majority of the patients were Male i.e. 63.86% and Female were 36.14

Table 3: Distribution of the patients as per the associated factors

Associated factors	No.	Percentage (%)
URTI	32	38.55
LRTI	23	27.71
Malarial fever	14	16.87
AGE	10	12.05
Others	4	4.82
Total	83	100.00

URTI in 38.55%, followed by LRTI in 27.71%, Malarial fever in 16.87%, AGE in 12.05%, Others in 4.82%.

Table 4: Distribution of the patients as per time interval between fever and onset of febrile seizure

Duration	No.	Percentage (%)
<24	43	51.81
>24	21	25.30
>72	19	22.89
Total	83	100.00

The majority of the patients were having onset of seizures <24 hours of onset of Fever i.e. 51.81% followed by >24 were 25.30% , >72% were 22.89%

Table 5: Distribution of the patients as per the type of Seizure

Type	No.	Percentage (%)
Generalized	56	67.47
Focal	15	18.07
Undetermined	12	14.46
Total	83	100.00

The majority of the patients were having Generalized seizure in 67.47%, followed by Undetermined-18.07%, Focal in 14.46%.

DISCUSSION

A febrile seizure, also known as a fever fit or febrile convulsion, is a seizure associated with a high body temperature but without any serious underlying health issue.¹ They most commonly occur in children between the ages of 6 months and 5 years.¹² Most seizures are less than five minutes in duration and the child is completely back to normal within an hour of the event.^{13,14} Pathophysiology of FS remains unclear⁸. It is suggested that FS is an age-dependent response of the immature brain to fever, as studies in animal models have suggested that during the brain maturation process, there is an enhanced neuronal excitability⁸. This postulation is supported by the fact that most (65 to 85%) FS occur between 6 months and 3 years of age, with the peak incidence at 18 months⁹⁻¹¹. Febrile seizures may run in families.¹ The diagnosis involves verifying that there is not an infection of the brain, there are no metabolic problems, and there have not been prior seizures that have occurred without a fever.¹² There are two types of febrile seizures: simple febrile seizures and complex febrile seizures.¹² Simple febrile seizures involve an otherwise healthy child who has at most one tonic-clonic seizure lasting less than 15 minutes in a 24-hour period.¹² Blood testing, imaging of the brain or an electroencephalogram (EEG) is typically not needed for the diagnosis.¹² Examination to determine the source of the fever is recommended.¹² In otherwise healthy-looking children a lumbar puncture is not necessarily required.¹² Neither anti-seizure medication nor anti-fever medication are recommended in an effort to prevent further simple febrile seizures.¹² In the few cases that last greater than five minutes a benzodiazepine such as lorazepam or midazolam may be used.^{12,15} Outcomes are generally excellent with similar academic achievements to other children and no change in the risk of death for those with simple seizures.¹² There is tentative evidence that children have a slight increased risk of epilepsy at 2%.¹² Febrile seizures affect two to five percent of children before the age of five.^{12,2} They are more common in boys than girls.¹⁶ After a single febrile seizure there is a 15 to 70% chance of having an another one.¹² In our study we have seen The majority of the patients were in the age group 1 year-3 years were 42.17% , followed by 4 years-6 years were 22.89% , 7 years-12 years were 21.69 <1Yr. were 9.64 % , >12 years were 3.61%. The majority of the patients were Male i.e. 63.86% and Female were 36.14. URTI in 38.55%, followed by LRTI in 27.71%, Malarial fever in 16.87%,

AGE in 12.05%, Others in 4.82%. The majority of the patients were having onset of seizures <24 hours of onset of Fever i.e. 51.81% followed by >24 were 25.30%, >72% were 22.89%, The majority of the patients were having Generalized seizure in 67.47%, followed by Undetermined-18.07%, Focal in 14.46%. This was similar with Habib G. Pathan¹⁷ they found Total febrile seizures were 25.46% and overall incidence was around 2.57%. Preponderance of male constituting 62.65% over female 37.35% was observed. Most of the febrile seizures were simple type. Fever due to upper respiratory tract infection was commonest cause. It was not associated with any complications. Epileptic cases were 38.65% of total cases and overall incidence was 3.9%. In this group also, there was male preponderance. It increased with age. Commonest presentations of epileptic seizures were generalized in 67.46%. Most common cause of acute symptomatic seizures was viral encephalitis (28.34%).

CONCLUSION

It can be concluded from our study that the majority of the patients were in the age group 1 year-3 years, it was common in males, most common etiological factors were URTI LRTI, Malarial fever, AGE.

REFERENCES

1. Millar JS. Evaluation and treatment of the child with febrile Seizure. Am Fam Physician. 2006; 73(10):1761-64.
2. ILAE. Guidelines for epidemiologic studies on epilepsy. Epilepsia. 1993; 34: 592-96.
3. Rosman NP. Evaluation of the child who convulses with fever. Paediatr Drugs. 2003; 5: 457-61.
4. Steering Committee on Quality Improvement and Management, Subcommittee on Febrile Seizures. Febrile Seizures: Clinical Practice Guideline for the Long-term Management of the Child With Simple Febrile Seizures. Pediatrics. 2008; 121(6) .
5. Vestergaard M, Obel C, Henriksen TB, Christensen J, Madsen KM, Ostergaard JR, *et al* . The Danish National Hospital Register is a valuable study base for epidemiologic research in febrile seizures. J Clin Epidemiol. 2006; 59: 61-66.
6. Hackett R, Hackett L, Bhakta P. Febrile Seizures in South Indian District: Incidence and Associations – Dev Med. Child Neurol. 1997;39:380-84.
7. Gourie-Devi M, Gururaj G, Satishchandra P, Subbakrishna DK. Prevalence of neurological disorders in Bangalore, India: A community-based study with a comparison between urban and rural areas. Neuroepidemiology. 2004;23:261-68
8. Jensen FE, Sanchez RM. Why does the developing brain demonstrate heightened susceptibility to febrile and other provoked seizures? In: Baram TZ, Shinnar S, editors. Febrile seizures. Academic Press: San Diego; 2002. Pp. 153-68.
9. Verity CM, Butler NR, Golding J. Febrile convulsions in a national cohort followed up from birth. I-Prevalence and recurrence in the first five years of life. Br Med J (Clin Res Ed). 1985; 290: 1307-10.
10. Forsgren L, Sidenvall R, Blomquist HK, Heijbel J. A prospective incidence study of febrile convulsions. Acta Paediatr Scand. 1990; 79: 550-57.
11. Hauser WA. The prevalence and incidence of convulsive disorders in children. Epilepsia. 1994; 35: S1-6.
12. Graves, RC; Oehler, K and Tingle, LE (15 January 2012). "Febrile seizures: risks, evaluation, and prognosis". American Family Physician. 85 (2): 149-53.
13. Patterson, JL; Carapetian, SA; Hageman, JR; Kelley, KR (Dec 2013). "Febrile seizures". Pediatric annals. 42 (12): 249-54. doi:10.3928/00904481-20131122-09.
14. "Symptoms of febrile seizures". www.nhs.uk. 1 October 2012. Archived from the original on 6 October 2014. Retrieved 13 October 2014.
15. Paritosh Prasad (2013). Pocket Pediatrics: The Massachusetts General Hospital for Children Handbook of Pediatrics. Lippincott Williams and Wilkins. p. 419. ISBN 9781469830094. Archived from the original on 6 September 2017.
16. Ronald M. Perkin, ed. (2008). Pediatric hospital medicine: textbook of inpatient management (2nd ed.). Philadelphia: Wolters Kluwer Health/Lippincott Williams and Wilkins. p. 266.
17. Pathan HG *et al*. Int J Contemp Pediatr. 2017 Nov;4(6):2093-2097

Source of Support: None Declared
Conflict of Interest: None Declared