Original Article

Indian Journal of Trauma and Emergency Pediatrics
Volume 8 Number 2, May - August 2016
DOI: http://dx.doi.org/10.21088/ijtep.2348.9987.8216.11

Profile of Under Five Children with Febrile Convulsion (FC)

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Abstract

Introduction: A FS is defined by the International League Against Epilepsy (ILAE)as a seizure occurring in association with a febrile illness (FI) in the absence of a Central Nervous System (CNS) infection or acute electrolyte imbalance in children older than 1 month of age without prior afebrile seizures. *Methodology:* The data was collected from parents/guardian of children of age group 6 months to 5 years coming to pediatric emergency ward of VIMS, Bellary with Febrile Seizures. *Results:* In our study 37% cases were 6-12months. 25% cases were 1-2 years. 16% cases were 2-3 years. 10% cases were 3-4 years. 12% cases were 4-5 years. The mean age of cases was 34 months. *Conclusion:* Overwhelming 89% cases had generalized tonic-clonic seizures and focal seizures were reported in only 11% of cases.

Keywords: Febrile Convulsion; Children; Seizures.

Introduction

Febrile seizures (FS) are a form of acute symptomatic seizures. They occur in 2% to 5% of children and are the most common form of childhood seizures. In the past, it was believed that most FS represented a form of epilepsy and that prognosis was not favorable [1,2,3]. FS were believed to cause brain damage and subsequent epilepsy [4,3,5].

Over the past 25years, much more information on FS has accumulated from both human and animal studies[6]. The prognosis for FS usually has been found to be good. Such seizures are not associated with any detectable brain damage [7,8] and epilepsy will eventually develop in only a small minority of children who have had FS [8].

A FS is defined by the International League Against Epilepsy (ILAE) as a seizure occurring in association with a febrile illness (FI) in the absence of a Central Nervous System (CNS) infection or acute electrolyte imbalance in children older than 1 month of age without prior afebrile seizures [9]. The febrile illness must include a body temperature of greater than 38.4^0C, although the increased temperature may not occur until after the seizure. The child may be neurologically normal or abnormal.

No specific upper age limit is used. FS are most common, however between the ages of 6 months and 3 years, with peak incidence at approximately 18 months of age. Onset after the age of 7 years is uncommon.

FS are further classified as simple or complex. A FS is complex if it is focal, prolonged (lasting for more than 10 minutes, or 15 minutes or multiple (occurrence of more than one seizure during the febrile illness). Conversely, it is simple if it is an isolated, brief, generalized seizure.

Methodology

- The data was collected from parents/guardian of children of age group 6 months to 5 years coming to pediatric emergency ward of VIMS, Bellary with Febrile Seizures.
- Study design; Cross sectional study
- Study period: one year
- Study subjects; Children of age group 6 months to 5 years.
- Sample size; 100

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- Method of sampling; Non randomized Targeted study.

INCLUSION CRITERIA

- Children in the age group 6 months to 5 years.
- Children with fever >38^{0}C.
- Children with simple or complex febrile seizure.

EXCLUSION CRITERIA

- Children >5 years and <6months.
- Children with lab evidence of mening-oencephalitis, know seizure disorder chronic neurological diseases were excluded.

Results

In this study, the mean age of study subjects was 34 months. Study subjects constituted both boys and girls; boys were 58% and girls 42%. Highest proportion belongs to middle level of socio economic status and majority of them had average length of seizure of less than 5 mins

Table 1 : Distributionbased on age

Age group	Frequency	Percentage
06 - 12 months	37	37%
13 - 24 months	25	25%
25 - 36 months	16	16%
37 - 48 months	10	10%
49 - 60 months	12	12%
Total	100	100%

Table 2: Distribution based on average length of seizures

Gender	Frequency	Percentage
<5 mins	76	76%
5-10 mins	20	20%
>10 mins	04	04%
Total	100	100%

Table 3: Distribution based on type of seizure

Type of seizure	Frequency	Percentage
GTS	89	89%
Focal	11	11%
Total	100	100%

Table 4 : Distribution based on family history

Family history	Frequency	Percentage
Yes	18	18%
No	82	82%
Total	100	100%

Discussion

The mean age of FS in present study is 2 yrs 10 months which is comparable to the other studies. Alfredo Piscane et al found the mean age for FS was 15 months. Separate studies done by Vasvani RK et al, Waruiru C et al and Azhar S Daoud et al also found that FS peaks at 18 months. Naveed-ur-Rehmann et al found mean age was 22.97± 9.52 months. Ellenberg et al found the average convulsion age to be 23.3 months. It is generally noted that the febrile convulsion and the first febrile convulsion are more common in second year.

Study	Mean Age (Months)
Alfredo Piscane et al[10]	15
Vasvani RK et al[11]	18
Waruiru C et al[12]	18
Azhar S Daoud et al[13]	18
Naveed-ur-Rehmann et al[14]	22.97±9.52
Nelson and Ellenberg[15]	22.97±9.52
Present study	2yrs 10mons

Gender Distribution

There was a preponderance of male in present study for the febrile seizure group. Regardless of the

era of the study or particulars of the design; boys have consistently emerged with higher frequency of febrile seizures. Incidence ratios of boys: girls have ranged from 1.1:1 to 2:1.

However present study finding are in contrast to another set of large studies by Verity et al, 1985 [16] who found no sex difference. Amir Salari also found no gender difference between cases and controls. NCPP study showed male predilection only among black population (Nelson and Ellenberg). Whether there is a biological basis for the gender-specific differences in febrile seizure susceptibility, or whether boys just contract more fevers and therefore are at greater risk, is currently not established.

Socioeconomic Status

In the present study conducted 44% of children belonged to low SES and 56% belonged to middle SES which is comparable to the study done by Eden AN et al [17].

Type of Seizures

The majority of FS are simple seizures. In present study, simple febrile seizures constituted 89% of the seizures while 11% were focal seizures; Out of these 76% had duration of <5mins, 20% had duration of 5-10mins and 4% had duration of >15mins which was similar to Study by Livingston et al [2], where majority (96.9%) was simple FS. Berg et al [15] in 1996 found that out of 35% children, 35% had at least 1 complex feature, including focality in 16%, multiple seizures in 14%, and prolonged duration in 13%. Approximately 6% of children had atleast 2 complex features, and 1% had all the 3 complex features, which was not seen in present study.

Family History of FS in the Relatives

In present study f/h is positive in 18% of children, though, more males than females had a significant f/h of FS. While other studies by Farwell et al, (29%) proved strong family history association, much

Positive Family History	Negetive Family History
Farwell et al[18]	Azhar S Daoud et al[13]
Lewis et al[19]	Khalid N et al[20]
Present Study	

greater than what reported by Lewis et al (11%). Similar studies done by Azhar S Daoud et al and Khalid N et al found f/h of FS and f/h of epilepsy were not statistically significant.

Conclusion

- In the study the mean age of onset of FS is 34 months, with early onset between 6 months to 1 year was found in 37% of cases.
- There is excess of male children in FS group without statistical significance

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