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ORIGINAL RESEARCH

A study on clinical profile of children with febrile seizure of both sexes from 6 months to 60 months of age

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ABSTRACT
Febrile seizures are seizures that occur between the ages of 6th month and 60 months (peak 12-18 months) with a temperature of 100.4 º F or higher, that are not the result of CNS infection or any metabolic imbalance, and that occur in the absence of a history of prior a febrile seizures. A simple febrile seizure is a primary generalized, usually tonic-clonic, attack associated with fever, lasting for a maximum of 15 min, and not recurrent within a 24-hr period. After getting informed written consent from the parents or care givers, Children of both sexes from 6 months to 60 months of age having simple or complex febrile seizure were admitted and investigated regarding various risk factors for recurrence of febrile seizure. Other etiologies causing fever with seizure were excluded by history, clinical examination and relevant investigations. Children with recurrent febrile seizures were reviewed with their old records. Among 100, 75 cases had experienced simple febrile seizure and others, 25 cases had complex febrile seizure. Hence, simple febrile seizure is the most common type of febrile seizure. Out of 100 patients, 60 patients experienced seizure lasting for less than 5 minutes and 40 patients had seizure lasting for more than 5 minutes.

Key words: Febrile seizures, clinical profile, children

INTRODUCTION

The Febrile seizures are the most common neurologic disorder among infants and young children. They are an age-dependent condition, occurring in 2 to 5 percent of children younger than five years of age. Simple febrile seizures, defined as generalized seizures lasting less than 15 minutes and not recurring for 24-hour period. While they eventually recur inone-third of children during their early childhood, otherwise they are benign condition[1, 2]. Febrile seizures which are focal, prolonged, multiple within the first 24 hours are defined as complex febrile seizures. Complex febrile seizures are a more heterogeneous cluster of phenomena, associatedwith a greater risk ofrecurrence during early childhood and an increased probability of febrile seizures in the future. Incidence of febrile seizure is between 2% and 5% amongst Caucasian children, 5 to 10% in India and 8.8% in Japan. About 3 to 4% of all children had at least one febrile seizure. The Peak of occurrence of febrile seizure is between 12-18 months of age. Recurrence rate ranges from 21 to 29.3% in the third world. In the west the recurrence rate were 30 to 50%. There were so many risk factors present for febrile seizure recurrence. In the present study we try to investigate the effect of age, gender, temperature, past history ofseizure, developmental and family history, duration, type and number of seizure on recurrence of febrile seizures [3,4].

Febrile seizures are seizures that occur between the ages of 6th month and 60 months (peak 12-18 months) with a temperature of 100.4 º F or higher, that are not the result of CNS infection or any metabolic imbalance, and that occur in the absence of a history of prior a febrile seizures. A simple febrile seizure is a primary generalized, usually tonic-clonic, attack

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associated with fever, lasting for a maximum of 15 min, and not recurrent within a 24-hr period[5].

A complex febrile seizure is more prolonged (>15 min) and/or is focal, and/or recurs within 24 hr. Most patients with simple febrile seizures have a very short postictal state and usually return to their baseline normal behavior and consciousness within minutes of the seizures.Febrile seizure occur in around 2%-5% of all children and the recurrence is seen in about.Incidence of febrile seizure is between 5 to 10% in India. Children younger than 12 months at the one-third time of their first simple febrile seizure have an approximately 50% probability of having recurrent febrile seizure[6].

METHODOLOGY

SOURCES OF DATA

Data were collected from patients visiting causality and admitted under the Department of Pediatrics, with informed consent fitting the inclusion and exclusion criteria.

METHODS OF DATA COLLECTION

Patients coming to casualty of Department of Paediatrics with history of fever preceeding convulsions hasconsidered for the purpose of the study after initial management, informed consent fitting the inclusion and exclusion criteria will be taken and patients consenting for the study wastaken up. Data were gatheredorally with appropriate history taking and from investigations done.

SAMPLE SIZE

A sample size of250 Children aged 6 months to 60 months with both simple and complex febrile seizures admitted in Hospital.

INCLUSION CRITERIA

Children aged 6 months to 5 years with both simple and complex febrile seizures,who are admitted Hospital and whose parents had given written informed consent.

EXCLUSION CRITERIA

- Children with seizure suspected to have central nervous system infection on first day itself and also diagnosed following LP.
- Children with seizure due to hypocalcemia and hypomagnesia.
- Children with at least one episode of a febrile seizures.
- Seizure following trauma, drug, or toxin intake.
- Seizure in children with CSOM.

EVALUATION AND INVESTIGATIONS

All the patients are personally subjected to detailed history regarding name, age, sex, occupation, socioeconomic status, general physical examination, systemic examination.

INVESTIGATIONS DONE

1. Hemoglobin.
2. Random blood sugar.
3. Renal function test.
4. Serum electrolytes.
5. Brain imaging and EEG (when and as required).
6. CSF analysis (when and as required).

After getting informed written consent from the parents or care givers, Children of both sexes from 6 months to 60 months of age having simple or complex febrile seizure were admitted and investigated regarding various risk factors for recurrence of febrile seizure. Other etiologies causing fever with seizure were excluded by history, clinical examination and relevant investigations. Children with recurrent febrile seizures were reviewed with their old records. All children either first episode or recurrence were followed up fortnightly in specialty OPD during the study period. Missed children were followed up whenever they had come to OPD.

RESULTS

An approximately >1500Children were admitted in pediatric ward in cohortbasis. Among them, (N=100) children were diagnosed as having febrile seizures based on the clinical presentation and enrollment records. In this study, the prevalence of febrile seizures was 6.66% among the total admitted cases.

Table 1: Age wise distribution of the subjects

Age	Frequency	Percent	P-value
< 1 yr	40	40	<0.01
>1 yr	60	60	<0.01
Total	100	100	

Chi-square 5.66, p<0.01.

Out of 100 cases, 40 children (40%) were less than one year old and rest of them (60.0%) were more than one year old.

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Table 2: Sex distribution

Sex	Frequency	Percent
Male	65	35
Female	35	35
Total	100	100

Among the children with febrile seizure, 100 children (65%) were males and 35 children (35%) were females. The male female ratio is 1:1. It denotes that male children have more commonly experienced febrile seizures compared tofemalesAssociation between onset of fever and seizure.Most of the children, (58%) developed febrile seizure within the period of 24 hours from the onset of fever. Rest of them, (42%) had experienced febrile seizure after 24 hours from the onset of fever.

Table 3: Association between onset of fever and seizure

Duration of Fever	Frequency	Percent	P-value
<24 hour	58	58	<0.01
>24 hour	42	42	<0.01
Total	100	100	

Chi-square =6.33, p<0.01, t=2.86

Among 100, 75caseshad experienced simple febrile seizure and others, 25 caseshad complex febrile seizure. Hence, simple febrile seizure is the most common type of febrile seizure.

Table 4: Breakup according to type of seizure

Type of Febrile seizure	Frequency	Percent	P-value
Simple	75	75	t=3.68,p<0.01
Complex	25	25	
Total	100	100	

Out of 100patients, 60 patients experienced seizure lasting for less than 5 minutes and 40 patients had seizure lasting for more than 5 minutes.

Table 5: Break up according to durationof seizure

Duration ofSeizure	Frequency	Percent	P-value
< 5 mins	60	60	Chi-square 5.47, p<0.01
> 5 mins	40	40	
Total			

Among 100 children with FS, 55 children had developed recurrent febrile seizures in the upcoming years. Rest of the children 45 did not have even one recurrence.

Table 6: Recurrent febrile seizures

Recurrent FS	Frequency	P-value
No	45	Chi-square 4.01, p<0.01
Yes	55	
Total	223	

DISCUSSION

In the present study, among the children with febrile seizure, 100 children (65%) were malesand 35 (35%) were females. Out of 100 cases, 40 children (40%) were less than one year old and rest of them (60.0%) was more than one year old. Among the children with febrile seizure, 100 children (65%) were males and 35 children (35%) were females. The male female ratio is 1:1. It denotes that male children have more commonly experienced febrile seizures compared to females association between onset of fever and seizure.Most of the children, (58%) developed febrile seizure within the period of 24 hours from the onset of fever. Rest of them, (42%) had experienced febrile seizure after 24 hours from the onset of fever. 75 cases had experienced simple febrile seizure and others, 25 caseshad complex febrile seizure. Hence, simple febrile seizure is the most common type of febrile seizure.60 patients experienced seizure lasting for less than 5 minutes and 40 patients had seizure lasting for more than 5 minutes[7,8].55 children had developed recurrent febrile seizures in the upcoming years. Rest of the children 45 did not have even one recurrence. Children (55%) had experienced initial

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febrile seizure when they were less than one year old. But, other 30 in number (30%) developed their first FS after their first birth day. Most of the children with recurrent FS had experienced their initial febrile seizure prior to their first birth day. Hence, it is one of the most important risk factor for recurrent FS.(60.60%) are male among 100 children withrecurrent febrile seizure. Other 39.39% are female children. So, male children are more prone for developing recurrent febrile seizure. Agelessthan1yearwhiledeveloping febrile seizurehadastatisticallysignificant association with recurrence of febrile seizure (p = 0.0001).Male children had a significant association with recurrence of febrile seizure statistically with the p value of 0.006. Out of 100 patients with recurrent febrile seizures, 24 patients (84.84%) developed seizures within 24 hours of onset of fever. Rest of the 8 patients (24.24%) developed after 24 hours of onset of fever. Hence, duration of fever less than 24 hours from the onset of fever has a strong association with the development of recurrent febrile seizure. This bivariate analysis had shown that the duration of fever less than 24 hours prior to the seizure was a significant risk factor for recurrence offebrile seizure (p = 0.01). Out of 100 children with recurrent FS, 33 children (57.70%) had experienced more than one episode of recurrence and other 47 children (42.3%) had only one recurrent FS. Hence, number of recurrent episode itself increases the frequency of recurrent[9, 10].

CONCLUSION

Most of the children with recurrent FS had experienced their initial febrile seizure prior to their first birth day. Hence, it is one of the most important risk factor for recurrent FS.(60.60%) are male among 100 children withrecurrent febrile seizure.

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