



Prevalence of Febrile Seizures in Children Admitted to Ataturk Children's Hospital in 2022

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ABSTRACT

Introduction: Febrile seizures are seizures that occur in the presence of fever and absence of central nervous system infection, metabolic disturbances. Febrile seizures are a major problem in pediatric emergency services and hospitals, and if not treated promptly and appropriately, they can cause a number of complications, disabilities, and even deaths. Having sufficient knowledge and information about this disease can greatly help in preventing and protecting against it.

Objectives: To determine the prevalence of febrile seizures in children under five years of age admitted to Ataturk Children's Hospital in 2022.

Research Method: This is a Descriptive Cross-sectional study that was conducted in 2022 at Ataturk Children's Hospital.

Results: The prevalence of febrile seizures was 15%. In terms of gender, 420(68.9%) were boys and 190(31.1%) were girls. In terms of age, 155 (25.4%) were between 6-12 months, 233 (38.2%) were 13-24 months, 141 (23.1%) were 25-36 months, and 81 (13.3%) were over 36 months old. The highest number of cases occurred in the 13-24-months age group. In terms of clinical presentation, 374 (61.3%) were simple febrile seizures, and 236 (38.7%) were complex febrile seizures. In terms of underlying diseases, respiratory diseases accounted for the highest number of cases 276(45.2%), followed by gastrointestinal diseases 209(34.3%), urinary tract infections 122(20%), and other diseases 3 (0.5%).

Conclusion: The prevalence of febrile seizures was 15%, with the highest number of cases occurring in boys and in the 13-24-month age group. According to clinical descriptive respiratory diseases were the most common underlying cause of fever.

Key words: Prevalence, febrile seizures, children

Background

In a research study conducted by Ram Prasad Pokhrel and his colleagues in 2020 at the Central Children's Hospital in Nepal, 3.4% of the total patients were diagnosed with febrile seizures, with the age of onset ranging from 13-24 months and an average age of 18 months. In most cases, the seizure occurred within the first 24 hours of the fever, with 131 cases (61%) being classified as simple febrile seizures and 83 cases (39%) as complex febrile seizures. The majority of cases occurred in boys (Pokhrel et al., 2021).

Another study conducted by Ghasem Miri Aliabadi and his colleagues in 2019 in Zahedan, Iran included 600 children with an average age of 7.2 years, with the peak incidence of febrile seizures occurring at 18 months and a prevalence of 5.3%. The most common causes of fever in these patients were respiratory tract infections, gastrointestinal infections, and urinary tract infections (Aliabadi et al., 2019).

A study by O.A. Olubosede and his colleagues in 2015 at a hospital in Nigeria included 800 patients, with 463 boys and 417 girls, with a male-to-female ratio of 1:1.1 and 158 patients (18%) with febrile seizures, 95 were boys and 63 were girls, with a male-to-female ratio of 1:1.5. In terms of age were 95(60.1%) boys and 63(39.9%) girls. The average age of patients was 14.5 months, with the majority being between 13-24 months old. The most common causes of fever were malaria (80.4%) and respiratory tract infections (18.4%) (Olubosede et al., 2015).

A study by L. Jisha and his colleagues in 2018 included 33 patients with febrile seizures, with a prevalence of 3-4%. The age of onset was highest in children under 2 years old (52%), followed by 2-4 years old (21%) and 4-6

years old (27%). The incidence of febrile seizures has also been reported in various countries, such as 2-5% in the United States, 5-10% in India, 8.8% in Japan, and 35% in Hong Kong.

Methods and Materials

The study design was a descriptive cross-sectional study. The data were collected using the Register Book of Ataturk Children's Hospital according to the prepared form and then entered the data in to the SPSS vs 20 for analysis.

Sitting: The study was conducted at the Ataturk Children's Hospital.

Sampling: All children aged 6 months to 5 years who were hospitalized in the pediatric ward during the year 2022. The sampling method used was census.

Variables: The variable of interest was febrile seizures, which were defined as seizures occurring in children aged 6 months to 5 years in the absence of CNS infections, metabolic abnormalities, electrolyte imbalances, and a history of seizures without fever.

Types of febrile seizures: were classified as simple febrile seizures (generalized tonic-clonic seizures lasting less than 15 minutes and occurring within the first 24 hours of fever) and complex febrile seizures (prolonged seizures lasting more than 15 minutes or more than one seizure within 24 hours).

Gender: boys and girls

Age: between 6 months to five years old.

Results

In this study, 3391 hospitalized children aged between 6 months to 5 years at Ataturk Children's Hospital in 2022 were included, out of them 610 patients had febrile seizures. The results are presented in the following table.

Table 1: Prevalence of febrile seizures among hospitalized children at Ataturk Children's Hospital in 2022.

Inpatients	numbers	Percentage
Patients without febrile seizures	3381	85%
Patients with febrile seizures	610	15%
Total	3991	100%

Based on the table presented, the prevalence of febrile seizures among children is 15%.

Table 2: Shows the distribution of febrile seizures based on age.

Gender	Numbers	Percentage
Boys	420	68.9%
Girls	190	31.1%
Total	610	100%

It is evident from the study that the majority of febrile seizures occur among boys.

Table 3: Presents the distribution of febrile seizures based on age.

Age (months)	Numbers	Percentage
6-12	155	25.4%
13-24	233	38.2%
25-36	141	23.1%
Greater then 36	81	13.2
Total	610	100%

It is evident from the table that the highest number of febrile seizures occurs in the age group of 13-24 months.

Table 4: Displays the clinical presentations of febrile seizures.

CLINICAL FARMS OF FEBRILE SEIZURES.	NUMBER	PERCENTAge
Simple febrile seizures	374	61.3%
complex febrile seizures	236	38.7%
Total	610	100%

It is evident from the table that the majority of cases are of simple febrile seizures.

Table 5: Shows the diseases that cause fever in patients with febrile seizures.

Diseases	Number	PercentAge
Respiratory system	276	45.2%
Gasterintestistianl tract system	209	34.3%
Urinary tract system	122	20%
Sepsis	3	0.5%
Total	610	100%

It is evident from the table that respiratory tract infections are the most common cause of fever in patients with febrile seizures.

Discussion

A study conducted at Ataturk Children's Hospital on the prevalence of febrile seizures among children aged 6 months to 5 years showed a prevalence of 15%. A study by L. Jisha et al. in 2018, Out of the total number of patients studied, 33 were diagnosed with febrile seizures, with a prevalence rate of 3-4%. The incidence of the disease varies in different countries, such as 2-5% in the United States, 5-10% in India, 8.8% in Japan, and 35% in Hong Kong, which is not consistent with our findings. One possible reason for this discrepancy is that our study was conducted in a specific population aged from six months to five years old (Jishal et al., 2020). The study was conducted based on gender, where 420 cases (68.9%) occurred in boys and 190 cases (31.1%) occurred in girls, with the majority of cases occurring in boys.

A study conducted by Ram Prasad Pokhrel and colleagues in 2020 at a pediatric hospital in Nepal showed that the majority of cases occurred in boys. Similarly, a study conducted by O.A. Olubosede and colleagues in 2015 at a hospital in Nigeria showed that 95 patients (60.1%) were boys and 63 patients (39.9%) were girls, which is consistent with our findings. (1.3)

A study conducted based on age showed that 25.4% of cases occurred in the age group of 6-12 months, 38.2% in the age group of 13-24 months, 23.1% in the age group of 25-36 months, and 13.3% in older age groups over 36 months. The highest incidence of the disease occurred in the age group of 13-24 months. A study conducted by Prasad Pokhrel and colleagues in 2020 at a

central pediatric hospital in Nepal also showed that the age group of 13-24 months was the most commonly affected age group (Pokhrel et al., 2021).

A study conducted by L. Jisha and colleagues in 2018 focused on cases up to two years of age, while a study conducted by O.A. Olubosede and colleagues in 2015 at a hospital in Nigeria showed that the majority of cases occurred in the age group of 13-24 months, which is consistent with our findings. (1.3.4) A study conducted based on the clinical pattern of febrile seizures showed that 374 cases (61.3%) were simple febrile seizures and 236 cases (38.7%) were complex febrile seizures, with simple febrile seizures being the most common form.

A study conducted by Ram Prasad Pokhrel and colleagues in 2020 at a pediatric hospital in Nepal also showed that 61% of febrile seizures were simple and 39% were complex, which is consistent with our findings. (1) A study conducted on the etiology of fever among patients with febrile seizures showed that respiratory infections accounted for 276 cases (45.2%), gastrointestinal infections accounted for 209 cases (34.3%), urinary tract infections accounted for 122 cases (20%), and the remaining 3 cases (0.5%) were due to other causes. Respiratory infections were the most common cause of fever in this group of patients. Results from a study conducted by Ghasem Miri Aliabadi and colleagues in 2019 in Zahedan, Iran, showed that the most common causes of fever in patients with febrile seizures were respiratory infections, gastrointestinal infections, and urinary tract infections, which is consistent with our findings (Aliabadi et al., 2019).

Conclusion

The prevalence of febrile seizures is 15%, with the highest incidence among boys and in the age group of 13-24 months. Clinically, the majority of cases are simple febrile seizures, and respiratory infections are the most common causative factors of fever.

Suggestions

1. Emphasize the importance of exclusive breastfeeding and introduce complementary feeding after six months of age by responsible organizations.
2. Regular implementation of vaccination programs.
3. Use of clean water and healthy food.

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