Original Research

Evaluation of Risk Factors for Fever & Convulsion in Pediatrics 6 Months to 6 Years: A Review Study

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Abstract:

Background:

Fever & Convulsion are the most common type of seizures and neurological problems of childhood and one of the most common reasons for admission to the emergency department and Neurology is a children's hospital. The aim of this study was to investigate the risk factors for Fever & Convulsion in children aged 6 months to 6 years.

Methods:

In total, 43 articles with a time limit of the last 5 years were obtained by deleting 9 articles whose full text not available; finally, 34 articles were included in the study

Results:

Risk factors for Fever & Convulsion in children 6 months to 6 years old using a review of studies conducted in the period 2018 to 2022. Findings of this study showed that genetics, gender, iron deficiency anemia, previous history of Fever & Convulsion, young age (under one year), infections and perinatal complications are effective in the development of fever and seizures and are associated with hospitalization of the child.

Conclusion:

The results showed that various factors are effective in the development of febrile seizures in children aged 6 months to 6 years. Fortunately, Fever & Convulsion are a benign disease in children that does not have long-term neurological complications and has a good prognosis.

Keywords: Fever & Convulsion, Pediatrics, Risk Factor

Submitted: 14 August 2022, Revised: 27 September 2022, Accepted: 27 October 2022

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Introduction

Fever & Convulsion are the most common type of seizures and neurological problems of childhood and one of the most common reasons for admission to the emergency department and Neurology is a children's hospital (1). By definition, the disease is an event that occurs in infancy and early childhood, usually between 6 months and 6 years of age at a temperature of more than 38.5 ° C, and evidence of central nervous system infection or water and electrolyte disturbances and history no previous seizures without fever (2).

Fever & Convulsion can occur in any form, but most cases are generalized tonic-clonic seizures that resolve spontaneously after a few minutes (3). The age of onset of this disorder is 14 to 18 months and is seen in 75% of cases under the age of 3 years (4). The prevalence of Fever & Convulsion in different societies is reported to be between 2 and 14%, for example in Europe and the United States, 2 to 5%, India 5-10%, in Japan 8.8% and in Ghana 14% (5).

Although this event is benign and has a good prognosis, fever is one of the most important public health concerns that occurs frequently during childhood and children with Fever & Convulsion develop more febrile episodes than children. Peers experience no Fever & Convulsion (6). Most Fever & Convulsion are seen in normal children, although children with neurological or developmental disorders may be more susceptible (7)

This type of seizure is usually seen in the first hours of infectious disease and its maximum incidence (73%) is in the first 24 hours of fever (8). The onset of seizures one day after the onset of febrile illness suggests another possible diagnosis for the child, such as meningitis and electrolyte disturbance (9).

The disease originates from environmental and genetic factors, although the main cause of this type of seizure is still unknown (10). But factors such as a positive family history, perinatal events, developmental delay, male gender, duration of breastfeeding, high temperature, low birth weight, elevated blood bilirubin, or infants whose mothers use alcohol and cigarettes; Has been reported in febrile seizures (11).

The prognosis for Fever & Convulsion is very good, and long-term antiepileptic drugs are not needed for simple Fever & Convulsion and in most cases for complex Fever & Convulsion. The aim of this study was to get acquainted with the risk factors for Fever & Convulsion in children and to improve child care.

Methods

This review study by searching the databases of Google Scholar, Scopus, PubMed and Web of Science, using Persian keywords Fever & Convulsion, Pediatrics, Risk Factor Their English was done. In total, 43 articles with a time limit of the last 5 years were obtained by deleting 9 articles whose full text not available; finally 34 articles were included in the study

Results

The aim of this study was to determine the risk factors for Fever & Convulsion in children 6 months to 6 years old using a review of studies conducted in the period 2018 to 2022. Findings of this study showed that genetics, gender, iron deficiency anemia, previous history of fever and seizures, young age (under one year), infections and perinatal complications are effective in the development of fever and seizures and are associated with hospitalization of the child.

In the study by Gvozdenovic et al., The body temperature was 39.7 ° C during seizures caused by moderate fever. According to studies, certain genetic backgrounds are involved in the development of febrile seizures. There was a significant relationship between the presence of seizures in the first degree family and its recurrence. This association has been reported in studies (12). This association

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has been reported in studies by Adebukola et al, Alfhaid et al, And Kaboré et al (13) (14) (15).

Habeeb concluded in his study that children with Fever & Convulsion are more likely to have a seizure if they have a positive family history of Fever & Convulsion (16). A positive family history was associated with Fever & Convulsion in 25 to 40% of cases, and a prevalence of 9 to 22% of reported siblings was reported (17).

Fever & Convulsion were significantly higher in boys than in girls. 60% of the cases were boys and 40% of the cases were girls (18). In the study of Alruwaili et al., The prevalence of fever and seizures was higher in boys (19). In the study by Alqudah et al., 54% of patients had seizures due to male fever (20).

Fever & Convulsion at a age of less than one year are a risk factor. Because children who have seizures at a younger age have a longer duration in the age group of people who are at risk for Fever & Convulsion are located (21). In the study of Prakash et al., The highest frequency of Fever & Convulsion was observed in children under two years of age (22)

A history of perinatal problems was associated with Fever & Convulsion in children (23). In the study Laino et al, Perinatal problems such as preterm delivery and low birth weight were identified as risk factors for Fever & Convulsion (24). In the study by Mosili et al, the role of developmental delay as a risk factor in the development of Fever & Convulsion was proven (25).

The results of studies indicate that plasma ferritin levels were significantly lower in children with Fever & Convulsion. This may indicate the possible role of iron deficiency in its occurrence. The prevalence of Fever & Convulsion is very low in children with thalassemia major with high iron levels (26) (27).

In Hameed et al study on children with Fever & Convulsion, serum zinc levels in the patient group were significantly lower than serum zinc levels in the control group. There was also a difference in serum zinc levels in the cerebrospinal fluid of both groups (28) (29). In the study of Hawas et al,It was performed on children with seizures and non-children. The cerebrospinal fluid of both groups was examined for magnesium and calcium levels and the result was that the level of magnesium in the cerebrospinal fluid of the patient group was far from there was less evidence (30).

The increase in the number of viral infections in children has been considered as a cause of Fever & Convulsion in the last decade. In Asian studies, influenza Type A virus has been the most common cause of seizures. Herpesvirus Type 6 infection has been the most common cause of Fever & Convulsion in children in the United States (31).

The relative risk of Fever & Convulsion temporarily increases within 2 weeks after measles and mumps (MMR) vaccination. The rate of the first Fever & Convulsion in children who receive the vaccine is 10% higher than others (32). There is also a risk of 8 to 14 days after MMR vaccination. Fever & Convulsion increase (33).While this increased risk for diphtheria-tetanus-pertussis vaccination occurs on the day of vaccination (34).

Conclusions

The results showed that various factors are effective in the incidence of Fever & Convulsion in children aged 6 months to 6 years. Fortunately, Fever & Convulsion are a benign disease in children that does not have long-term neurological complications and has a good prognosis. The results of this study can be used to educate nurses, nursing parents and parents to identify risk factors for febrile seizures and Standard nursing care used during pediatric hospitalization for nurses working in pediatric wards.

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Declaration of Competing Interest:
The authors report no declarations of interest

Funding
This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics statement
Written informed consent was obtained from the individuals for the publication of any potentially identifiable data included in this article.

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