

## **EVALUATION OF FEBRILE SEIZURES AMONG CHILDREN TREATED AT DAY CARE FACILITY OF TERTIARY CARE HOSPITAL : A RETROSPECTIVE STUDY**

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**Received: 02/01/2021**

**Revised:15/02/2021**

**Accepted: 25/02/2021**

### **ABSTRACT**

**Background:** Febrile seizures are the most frequent seizure type and reported among 2 to 5% of children aged less than 5 years with a pinnacle rate in the second year of life. Previous studies on febrile seizures were considered utilizing large epidemiologic surveys and researches. Febrile seizures are previously reported as benign as kind, however there is ongoing researches that recommends a little subset of children that present with seizures and fever may have recurrent febrile seizures or epilepsy. **Material & Methods:** The present retrospective study was conducted at department of Department of pediatrics of our tertiary care hospital. The study duration was September 2018 to September, 2019. A sample size of 100 was calculated at 95 % confidence interval at 5 % acceptable margin of error by epi info software version 7.2. Patients were enrolled from day care facility by simple random sampling. All children aged between 6 months to 5 years who were diagnosed as febrile seizures were enrolled in the present study. **Results:** In present study, out of the total study participants, family history of febrile seizure was present among 61% children and absent in 39% children. However, this difference was statistically non- significant ( p value >0.05). On the basis of type of febrile seizure, out of the total study participants 83% children had simple type of febrile seizure and 17% children had complex type of febrile seizure. However, this difference was statistically non- significant (p-value >0.05). On the basis of type of infection, upper respiratory tract infections were the most commonly present among 22% children, which was followed by lower respiratory tract infections among 21% children, followed by acute gastroenteritis among 18% children. 19% children had other infections irrespective to above three and 20% of children had no infection. **Conclusion:** We concluded from the present study that most common type of febrile seizure present in children was simple and predominant in male gender with positive family history. The most common infections associated with febrile seizures were upper and lower respiratory tract infections and acute gastroenteritis.

**Keywords:** Febrile seizure, Respiratory tract infection, Acute gastroenteritis.

### **INTRODUCTION**

Febrile seizures are the most frequent seizure type and reported among 2 to 5% of children aged less than 5 years with a pinnacle rate in the second year of life (1). Previous studies on febrile seizures were considered utilizing large epidemiologic surveys and researches (2). These preliminary researches didn't

exclude febrile seizures related with hidden neurological pathology and this anticipation was negative due to the inclusion criteria (3). It is right now acknowledged that most kids who have a febrile seizure regularly have typical wellbeing and advancement after the febrile seizures. Febrile

seizures are previously reported as benign as kind, however there is ongoing researches that recommends a little subset of children that present with seizures and fever may have recurrent febrile seizures or epilepsy(4).

The occurrence and prevalence of febrile seizure is similar across the various studies on occurrence. However, there is variation of incidence of febrile seizures dependent on geographic area, with higher prevalence found in developed countries for example Japan (5). Febrile seizures are not considered as a type of epilepsy, but a febrile seizure can be the initial presentation of subsequent epilepsy (6). However, at this initial stage it is not possible to foresee which child will develop subsequent epilepsy after presenting with febrile seizures (7). The present study was conducted to assess and evaluate the demographic profile and risk factors of febrile seizures among children admitted at our tertiary care hospital.

## MATERIALS & METHODS

The present retrospective study was conducted at Department of paediatrics of our tertiary care hospital. The study duration was September 2018 to September, 2019. A sample size of 100 was calculated at 95 % confidence interval at 5 % acceptable margin of error by epi info software version 7.2. Patients were enrolled from day care facility by simple random sampling. Clearance from Institutional Ethics Committee was taken before start of study. All children aged between 6 months to 5 years who were diagnosed as febrile seizures were enrolled in the present study.

All the study participants who had structural anomalies of brain and who were diagnosed with seizures other than febrile seizures were excluded from the present study. The Children less than 6 months and older than 5 years, were also excluded from the present study. All children were studied for various study parameters like age, gender, type of febrile seizure, risk factors of febrile seizures, family history of febrile seizure, associated infection and duration of hospital stay. All the data was recorded on Microsoft excel spread sheet and data analysis was done at 5% alpha and 95% confidence interval using SPSS v22 software. Test of significance were applied on collected and organized data and p value less than 0.05 was considered as statistically significant association between study variables.

## RESULTS

In present study, we enrolled 100 study participants, from outdoor and from ward by simple random sampling. All children aged between 6 months to 5 years who were diagnosed as febrile seizures were enrolled in the present study. The mean age of study participants was  $2.4 \pm 0.4$  years. Out of the total study participants, majority of children 33% were in age group of 2-3 years, followed by 30% in age group of 1-2 years, followed by 19% in age group of less than one year and 9% children respectively in age group of 3-4 and 4-5 years. However, this difference was statistically non-significant (p-value  $>0.05$ ). Males 56% were likely affected more than females 44% in study participants. However, this difference was statistically non-significant (p-value  $>0.05$ ).

In present study, out of the total study participants, family history of febrile seizure was present among 61% children and absent in 39% children. However, this difference was statistically non-significant (p-value  $>0.05$ ). On the basis of type of febrile seizure, out of the total study participants 83% children had simple type of febrile seizure and 17% children had complex type of febrile seizure. However, this difference was statistically non-significant (p-value  $>0.05$ ).

**Table 1: Distribution of study participants according to study parameters.**

Study parameters		No. of participants	P value
<b>Age (years)</b>	<1	19%	$>0.05$
	1-2	30%	
	2-3	33%	
	3-4	9%	
	4-5	9%	
<b>Gender</b>	Male	56%	$>0.05$
	female	44%	
<b>Family history of febrile seizure</b>	Yes	61%	$>0.05$
	No	39%	
<b>Type of febrile seizure</b>	Simple	83%	$>0.05$
	Complex	17%	

In the present study, out of the total study participants on the basis of type of infection, upper respiratory tract infections were the most commonly present among 22% children, which was followed by lower respiratory tract infections among 21%

children, followed by acute gastroenteritis among 18% children. 19% children had other infections irrespective to above three and 20% of children had no infection. However, this difference was statistically non- significant (p-value >0.05). On the basis of duration of hospital stay, 51% of children had 1-3 days of hospital stay, followed by 35% children who had 4-7 days of hospital stay and 14% children had more than 7 days of hospital stay. However, this difference was statistically non- significant ( p value >0.05).

**Table 2: Distribution of study participants according to study parameters.**

Study parameters		No. of participants	P value
<b>Infection</b>	URTI	22%	>0.05
	LRTI	21%	
	AGE	18%	
	Others	19%	
	No infection	20%	
<b>Duration of hospital stay ( days)</b>	1-3	51%	>0.05
	4-7	35%	
	>7	14%	

## DISCUSSION

In present study, we enrolled 100 study participants, from outdoor and from ward by simple random sampling. All children aged between 6 months to 5 years who were diagnosed as febrile seizures were enrolled in the present study. The mean age of study participants was  $2.4 \pm 0.4$  years. Out of the total study participants, majority of children 33% were in age group of 2-3 years, followed by 30% in age group of 1-2 years, followed by 19% in age group of less than one year and 9% children respectively in age group of 3-4 and 4-5 years. However, this difference was statistically non- significant (p value >0.05). Males 56% were likely affected more than females 44% in study participants. However, this difference was statistically non- significant (p value >0.05). Similar results to present study were obtained in a study conducted by Mayan M et al among 96 children diagnosed with febrile seizures. They reported out of the 96 children (55.2%) were boys and (44.7%) were girls. Majority of children were in the 1-3 years of age group. Mean age of onset was 2.2 years. 81.25% of the children had simple and 18.75% had the complex form of febrile seizure (8).

In present study, out of the total study participants, family history of febrile seizure was present among 61% children and absent in 39% children. However, this difference was statistically non- significant (p value >0.05). On the basis of type of febrile seizure, out of the total study participants 83% children had simple type of febrile seizure and 17% children had complex type of febrile seizure. However, this difference was statistically non- significant (p-value >0.05). Similar result to present study were obtained in a study conducted by Ogihara M et al among 326 children diagnosed with febrile seizures. They reported similar findings to the present study (9). Similar result to present study were obtained in a study conducted by Hosseini N et al among children diagnosed with febrile seizures. They reported similar findings to the present study (10)

In the present study, out of the total study participants on the basis of type of infection, upper respiratory tract infections were the most commonly present among 22% children, which was followed by lower respiratory tract infections among 21% children, followed by acute gastroenteritis among 18% children. 19% children had other infections irrespective to above three and 20% of children had no infection. However, this difference was statistically non- significant (p-value >0.05). On the basis of duration of hospital stay, 51% of children had 1-3 days of hospital stay, followed by 35% children who had 4-7 days of hospital stay and 14% children had more than 7 days of hospital stay. However, this difference was statistically non- significant (p-value >0.05). Similar results to present study were obtained in a study conducted by Hamed E et al among 214 children diagnosed with febrile seizures. They reported out of the 214 children mean age was  $25.24 \pm 15.40$  months, out of 214, 124 were boys and 109 had a positive family history. Complex seizures were present among 39 cases (11).

## CONCLUSION

We concluded from the present study that most common type of febrile seizure present in children was simple and predominant in male gender with positive family history. The most common infections associated with febrile seizures were upper and lower respiratory tract infections and acute gastroenteritis.

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<p><b>How to cite this article:</b> Paranjape V.P., Manju A.S., Goyal J., Arora A.K., Evaluation of febrile seizures among children treated at day care facility of tertiary care hospital: A retrospective study. <i>Int.J.Med.Sci.Educ</i> 2020;7(6):11-14</p>
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