



A STUDY OF FEBRILE SEIZURES AND BIRTH CHARACTERISTICS

Paediatrics

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ABSTRACT

Background: Febrile seizure is a common childhood disorder that occurs between 6 and 60 months with a temperature of 38°C (100.4°F) or higher. The development of childhood seizures is a complex phenomenon in which understanding of a complex interactions may help to identify potential therapeutic target. **Aim and objective:** To find the association between febrile seizures and birth characteristics **Results:** In our study 30 cases of febrile seizures were taken into study. Our study shows febrile seizures high in < 2 years of age, irrespective of term or preterm. Simple febrile seizures accounts for 66.6% of febrile seizures in this study.

KEYWORDS

INTRODUCTION:

Febrile seizure is a common childhood disorder that affects 2-5% of all children¹. Febrile seizures are seizures that occur between the ages of 6 and 60 month (peak 12-18 months) with a temperature of 38°C (100.4°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 afebrile seizures²

The development of childhood seizures likely involves a cascade of developmental molecular, cellular and neuronal network alterations responsible for enhanced seizure susceptibility in the developing brain.

These developmental factors in the human brain interplay with environmental factors such as preterm birth,^{3,4} infections^{5,6} and seasonality of birth.⁷ An understanding of these complex interactions may help identify potential therapeutic targets for prevention of febrile seizures and possibly also the association with later development of epilepsy⁸ and psychiatric disorders.

We studied the risk of febrile seizures in children presenting with febrile seizures to our tertiary care centre, focusing on the incidence of febrile seizures in relation to age, sex, birth weight and gestational age at birth.

2) METHODS:

Study Design & Study Population:

The children who were admitted to RRMCH with febrile seizures during our study period i.e., from Jan 2021 to August 2022 was taken into consideration. All children above 1 month who fulfilled the criteria of febrile seizures were included in the study. The patient attenders who refused to participate in the study were excluded from this study.

DATA COLLECTION:

The data was collected using a questionnaire that included the details of age, sex, gestational age of delivery, type of delivery, birth weight, History of neonatal jaundice and any treatment given. The birth weight indicates the baby's birth weight measured immediately after birth (<1,500g, 1,500–2,499 g, 2,500–2,999 g, 3,000–4,000 g and 4,000 + g). Gestational age indicates the period from the first day of the mother's last menstrual period before conception to the day the baby is born. Here we considered >37 week as term and <37 week as preterm babies.

STATISTICAL ANALYSIS:

Data Collected was analyzed using Descriptive and Inferential Statistics, using Statistical software SPSS v23 and MS Excel.

By Descriptive Statistics:

Data was summarised using following procedure like Distribution of Demographic data will be expressed as frequency and percentages, continuous data which was expressed as mean with standard deviation.

By Inferential Statistics:

To find association between the attributes the Chi-square test was used, to find the significant difference among two techniques of the study Z test will be used. All the statistical analysis will be carried out at 5% level of significance and a p-value of < 0.05 will be considered as significant.

Table 1: important birth characteristic parameters associated with febrile seizures is summarized

N=30	PARTICULARS	NO OF CHILDRENS	Z value	P-value	INTERPRETATION
Gestational age	Preterm	4	-5.6804	<0.00001	Significant
	Term	26			
Birth weight\	< 2.5kg	4	-5.6804	<0.00001	Significant
	> 2.5kg	26			
Mode of delivery	NVD	19	2.0656	0.3846	Significant
	LSCS	11			
History of neonatal Jaundice	YES	3	-6.1968	< 0.00001	Significant
	NO	27			

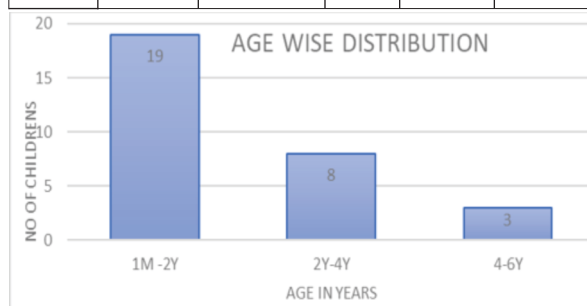


Fig 1: Age wise distribution of febrile seizures chart

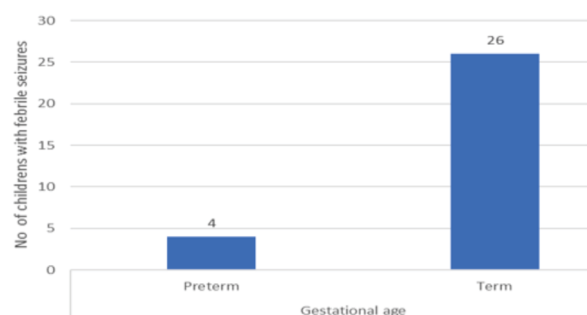


Fig 2 : According to gestational age at which baby born and occurrence of febrile seizures

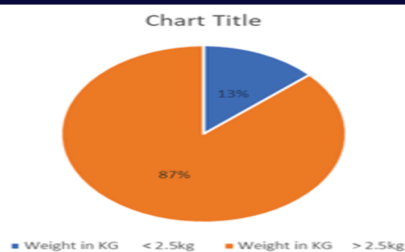


Fig 3 : based on birth weight occurrence of febrile seizures

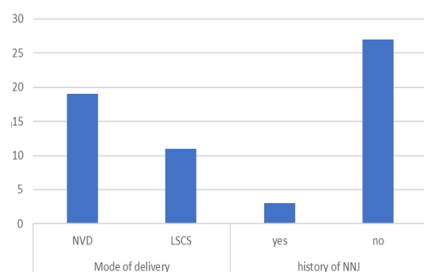


Fig 4 : mode of delivery and its effects on occurrence of febrile seizures

RESULTS:

In our study, 30 cases of febrile seizures were taken. The incidence for girls and boys were same in the study. The age wise distribution was observed in our study. 1 month to 2 years were one group as brain develops maximum by 2 years, 2 to 4 years second group and 3rd group was between 4 and 6 years. In our study it was found that 63.3% of cases were found in group 1, 26.6% in group 2, remaining 10% were in group 3. As age increases the risk of febrile seizures decreases.

In our study it was found that febrile seizures risk was more in children's who were born in term than preterm (P value -0.00001) which is contradictory to previous studies.⁹ Febrile seizures were also more in normal birth weight than low birth weight (p value -0.00001). In our study it was also found that Mode of delivery and history of neonatal jaundice was not having any effect on occurrence of febrile seizures.

In our study it was also found that simple febrile seizures occurrence was 66.6%, one case was diagnosed as FIRES, rest were complex febrile seizures (30%). In this study it was also observed that febrile seizures lasted for <5 mins were 23/30 i.e 76.6% c

CONCLUSION:

The causes of febrile seizures are multifactorial, In our study to establish a statistical significance a sample size of 30 is considered. Our study showed that risk of febrile seizures high in < 2 years age group irrespective of term or preterm, LBW or normal for gestational age.

Limitations:

Due to the COVID pandemic, and our hospital being designated COVID centre number of cases enrolled during this period is less. There is need for large sample size to draw definitive conclusions from this study

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