IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Human Journals
Research Article
April 2020 Vol.:18, Issue:1

A Prospective Study on the Prevalence, Etiology and Management of Febrile Seizure in Children

IJPPR
INTERNATIONAL JOURNAL OF PHARMACY & PHARMACEUTICAL RESEARCH
An official Publication of Human Journals
ISSN 2349-7203
HUMAN

Ankitha Krishnan.[1]*, Sreeja P.A.[2]

[1]Post Graduate Student, Department of Pharmacy Practice, Grace college of Pharmacy, Kodunthirapully, Palakkad, Kerala, India-678004.

[2]Assistant Professor, Department of Pharmacy Practice, Grace college of Pharmacy, Kodunthirapully, Palakkad, Kerala, India-678004.

Submission: 20 March 2020
Accepted: 28 March 2020
Published: 30 April 2020

www.ijppr.humanjournals.com

Keywords: Febrile seizure (FS), Febrile status epilepticus (FSE), Upper respiratory tract infections (URTI), Anti diarrheal disease (ADD)

ABSTRACT

Objective: To assess the prevalence, causes, risk factor, associated condition and management of febrile seizure in children. Method: A hospital based prospective observational study, the maternal history and clinical examination of children was taken in a data entry form. The percentage was calculated by using MS excel. Result: During the study period 113 children were studied. The highest frequency was seen in the age group of 6-24 months and 57% were males and 43% were females. Younger age and male gender was the major risk factor. The major causative factor was the viral fever 27% followed by URTI. 85% children had simple febrile seizure and 10% had complex febrile seizure. 5% had febrile status epilepticus. 54% of them were prescribed with *T. Clobazam*. Conclusion: The major risk factor of febrile seizure were more in males, younger age and temperature. A well organized educational program should be conducted for parents in order to reduce anxiety and fear.

INTRODUCTION

Febrile seizures are among the leading causes of pediatric hospital admissions which affect 2-5% of all young children. It is one of the common convulsive events in children.[1]The incidence of Febrile Convulsion varies from 5-10% in India, 8.8% in Japan and 14% in Guam.[2]The peak of incidence occurs at approximately 18 months of age.[3]The National Institute of Health (NIH) consensus statement defines febrile seizures "an event in infancy and childhood usually occurring between 6 months and 6 years of age associated with fever with a temperature of 38˚C (100.4˚F) or higher but without evidence of intracranial infection or defined cause of the seizures.[1]The risk factors for febrile seizures include age, gender, family history of seizure disorders, frequent fever caused by viral or bacterial infection and children who experience a seizure quickly after developing a fever. Anti-seizure medication or anti-fever medication are recommended in an effort to prevent further simple febrile seizures. Tepid sponging and use of Paracetamol is usual. [4]Studies reports that parents have false belief and limited knowledge regarding fever, its management and its role of illness.[5] Most of the parents who witness their child first febrile seizure find a frightening experience. Therefore understanding and improving parental KAP towards febrile convulsion is very essential.

The main objective of the study is to assess the prevalence, causes, risk factor, associated condition and management of febrile seizure in children.

MATERIALS AND METHODS

This study is conducted in both Government Women and Children Hospital, Palakkad District and Paalana Institute of Medical Science, Palakkad, Kerala. The study was conducted for a period of 6 month (November 2019-April 2020). A total of 113 children were involved in the study.Inclusion Criteria: Inpatient children who are newly diagnosed with febrile seizure between 6 months –5 years. Parents who are willing to give consent for the study. Exclusion Criteria*:* Children with previous febrile seizure, unprovoked seizure, Intracranial infections, metabolic disorders, known illness of CNS and neurological deficit, Afebrile seizure, Epilepsy.

DATA COLLECTION

Signed informed consent was taken from mother or guardian of each child recruited in the study. A predesigned patient data entry form was used to collect the detailed history and clinical examination of each child with febrile seizure. From the collected data, the various risk factors, causes associated with febrile seizure, type of febrile seizures, signs and symptoms, management strategies was analysed. Data were sorted and percentage was calculated by Microsoft excel. The study was approved by institutional ethical committee (GCP/IEC/219B/2019) dated 11/10/2019.

RESULTS

During the study period, a total of 113 children with febrile seizures were considered in the study.

Table No. 1: GENDER WISE DISTRIBUTION

SL. NO.	GENDER	NOOF CHILDREN (n=113)	PERCENTAGE (%)
1.	MALE	65	57%
2.	FEMALE	48	43%

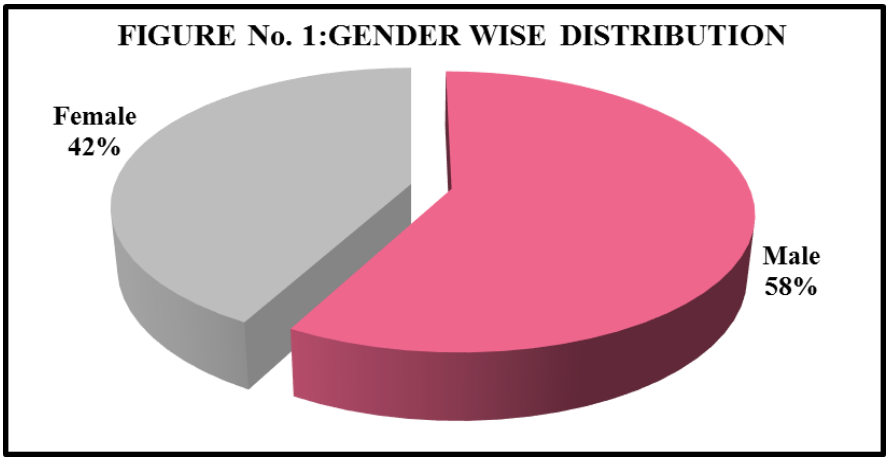


Table No. 2: DISTRIBUTION BASED ON AGE IN MONTHS

SL. NO.	AGE IN MONTHS	NO OF CHILDREN (n=113)	PERCENTAGE (%)
1.	6 - 12	20	18%
2.	13-24	64	57%
3.	25-36	16	14%
4.	37-48	10	9%
5.	49-60	3	2%
	MEAN AGE IN YEARS	**2.9 ± 2.1**	

FIGURE NO. 2: DISTRIBUTION BASED ON AGE IN MONTHS

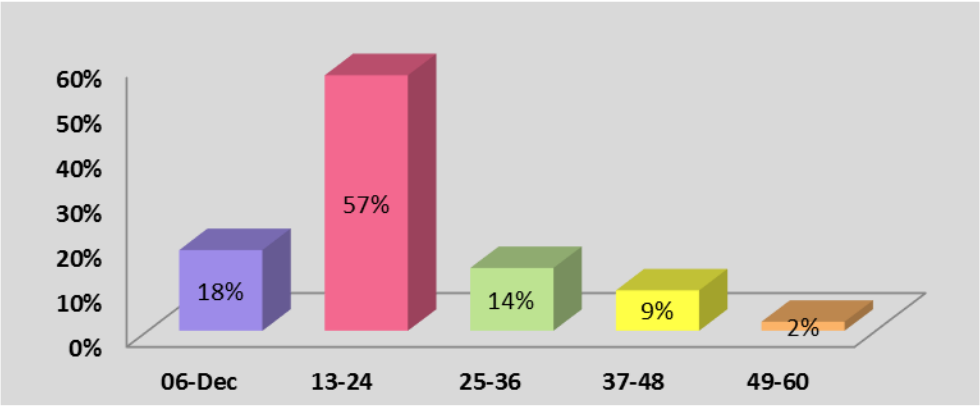


TABLE No. 3: DISTRIBUTION BASED ON RISK FACTORS

SL NO	RISK FACTORS	NO OF CHILDREN n=113	PERCENTAGE (%)
1.	Younger age(≤24months)	7	6%
2.	Recurrent temperature	17	15%
3.	Male gender	23	21%
4.	Family history of febrile seizure.	29	26%
5	Younger age + Male gender	32	28%
6	Recurrent temperature + Younger age	5	4%

FIGURE No. 3: DISTRIBUTION BASED ON RISK FACTORS

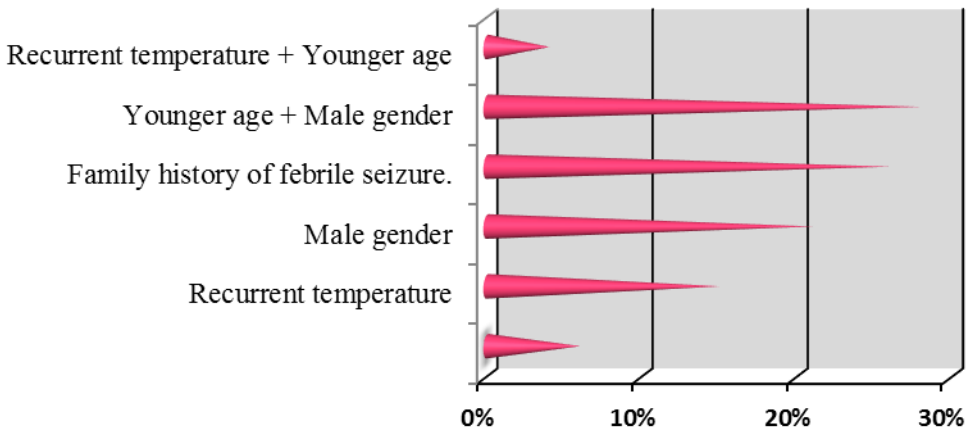


Table No. 4: DISTRIBUTION BASED ON ASSOCIATED DISEASES

SL NO	ASSOCIATED DISEASES	NO OF CHILDREN (n=113)	PERCENTAGE (%)
1.	Viral Fever	30	27%
2.	UTI	3	2%
3.	URTI	21	19%
4.	LRTI	10	9%
5.	Anti diarrheal disease	7	6%
6.	ARI	10	9%
7.	Pneumonia	5	4%
8.	Iron deficiency	6	5%
9.	Gastritis	2	2%
10.	Without diseases.	19	17%

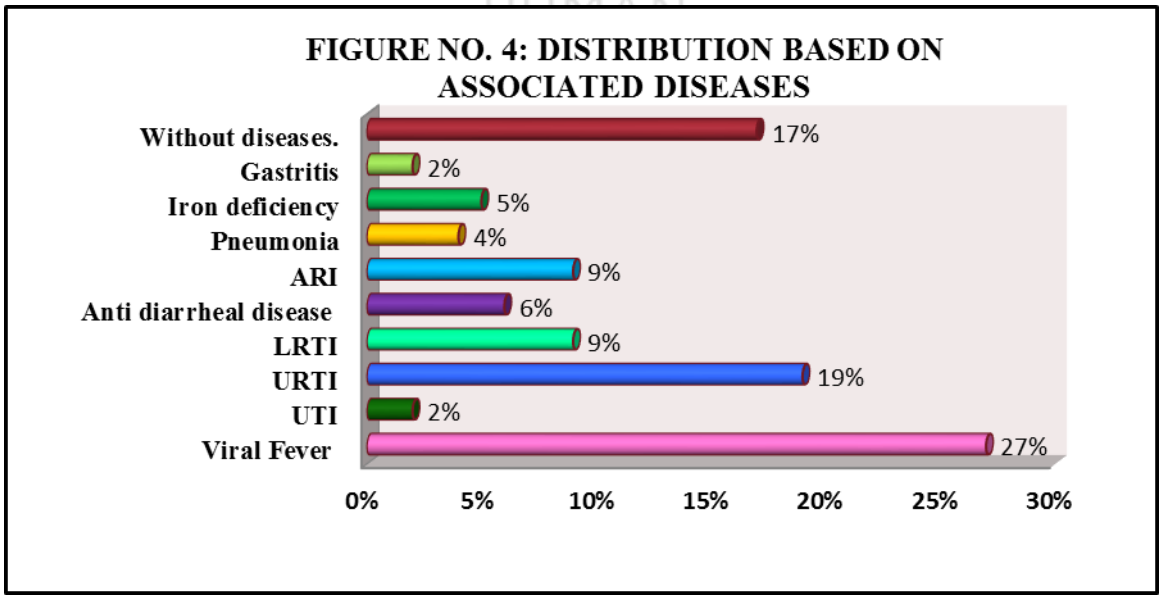


Table No. 5: DISTRIBUTION BASED ON TEMPERATURE

SL NO	TEMPERATURE (˚F)	FREQUENCY n=113	PERCENTAGE (%)
1.	<99.6 ˚F	20	17%
2.	99.7-100.6 ˚F	55	49%
3.	100.7-101.6 ˚F	8	7%
4.	101.7-102.6˚F	24	21%
5.	102.7-103.6˚F	3	3%
6.	≥103.7˚F	3	3%
	MEAN TEMP	**100.7±1.12**	

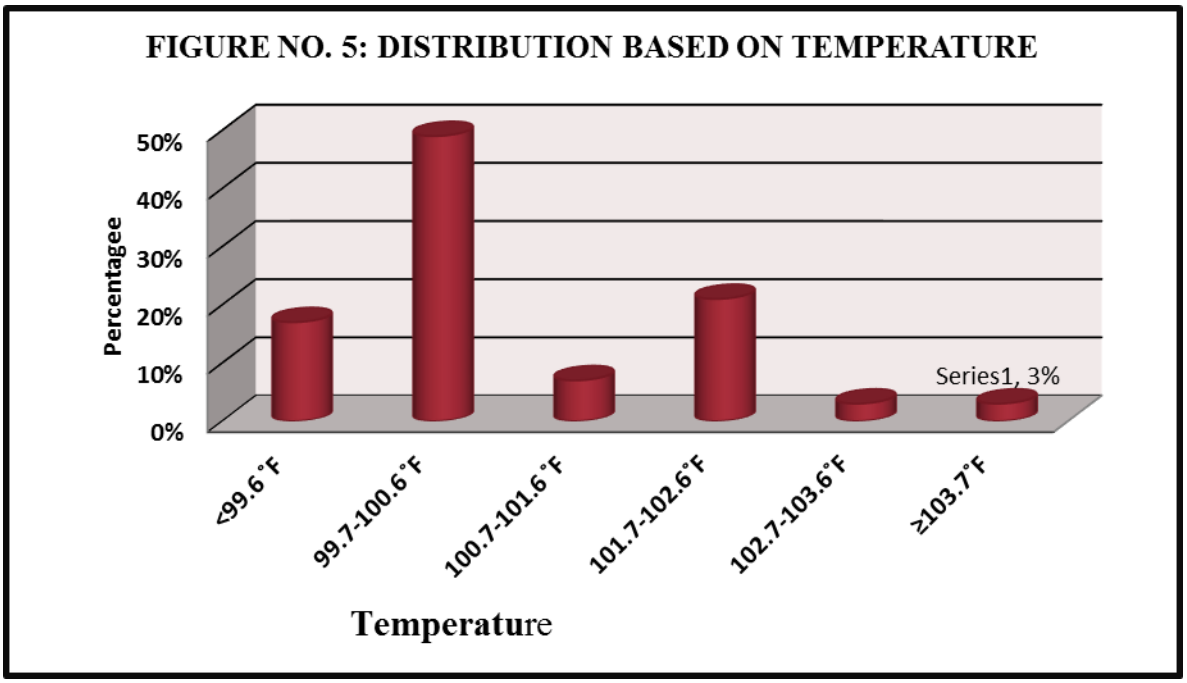


Table No. 6: DISTRIBUTION BASED ON TYPE OF SEIZURE

SL NO	TYPE OF FEBRILE SEIZURE	NO OF CHILDREN n=113	PERCENTAGE (%)
1.	Simple febrile seizure	96	85%
2.	Complex febrile seizure	11	10%
3.	Febrile status epilepticus	6	5%

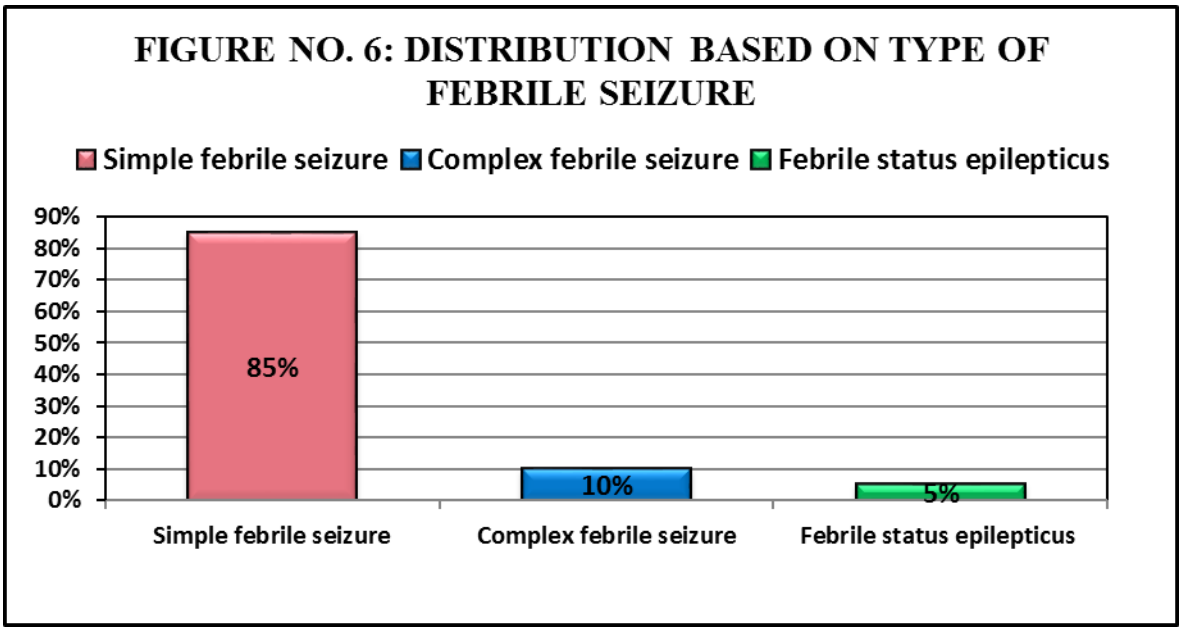
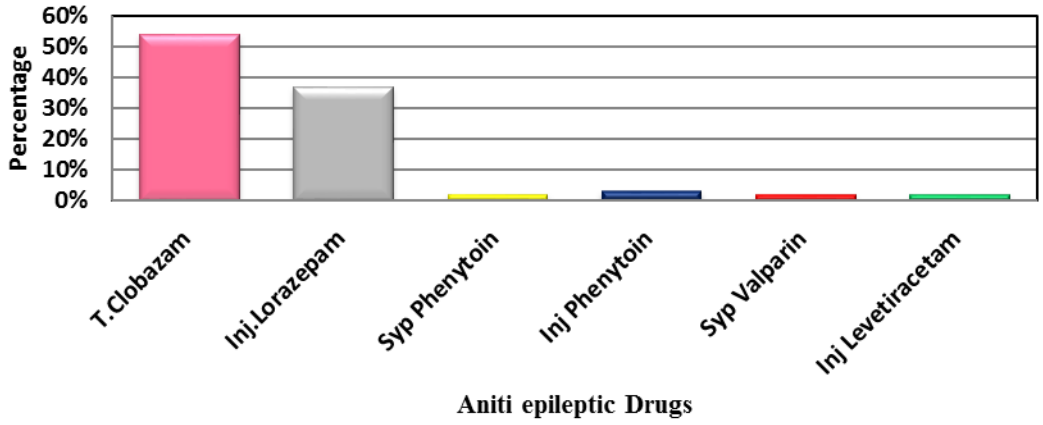


Table No. 7: DISTRIBUTION BASED ON ANTIEPILEPTIC DRUGS

SL NO	ANTIEPILEPTIC DRUGS	NO OF CHILDREN n=113	PERCENTAGE (%)
1.	*T. Clobazam*	61	54%
2.	Inj. Lorazepam	43	37%
3.	Syp Phenytoin	2	2%
4.	Inj Phenytoin	3	3%
5.	Syp Valparin	2	2%
6.	Inj Levetiracetam	2	2%

FIGURE NO. 7: DISTRIBUTION BASED ON ANTI EPILEPTIC DRUGS



DISCUSSION

Table 1 and Figure 1 shows distribution based on gender. 57% males developed febrile seizure than females (43%). Dr. Mabroka Alfoghi *et al* conducted a study regarding this and concluded that males are more predominant than the females in febrile seizure children. This is also supported by a study performed by Khanian *et al* in 2010 that quoted a predominance of febrile seizure in males. This can be described as males are found to be more susceptible to temporal lobe-like seizures because of high levels of testosterone.

Table 2 and Figure 2 shows the distribution based on age in months. Children with age group between 6-24 months are more prone to febrile seizure. The mean age of children was 2.9±2.1. Ghasem Miri Aliabad *et al* concluded that the highest frequency of febrile convulsion is in the age group of 6-24 months was the major risk factor. This indicates that during the maturation process, there is enhanced neuronal excitability that predisposes the child to febrile seizure.

Table 3 and Figure 3 describe the distribution based on risk factors. In this study Younger age + male gender was one of the major risk factor in febrile seizure children. Jyoti Agrawal *et al* concluded that the major risk factors are age and male gender.

Table 4 and Figure 4 represent the distribution according to associated diseases. In present study, 27% of children had Viral Fever which was similar to the study of Nithika Chacko *et al* concluded that majority of the sample population had an associated Vial fever with Febrile seizure.

Table 5 and Figure 5 shows the distribution pattern based on temperature. In this study, 49% of the children had temperature 99.7-100.6 ˚F. The mean body temperature was 100.7±1.12. Tolga Ince *et al* concluded that majority of the children had the temperature of 100.4˚F which is the major risk factor in febrile seizure children.

Table 6 and Figure 6 indicates that the distribution based on type of seizure. In the present study, 85% of the children had simple febrile seizure, 10% had complex febrile seizure and 5% had febrile status epilepticus. Pralhad Sureshrao Potdar *et al* concluded that majority of the children had simple febrile seizures than other type of seizures. This was also stated by Hosseini Nasab *et al*, in his study simple and complex form of febrile seizure were 76.4% and 23.6%.

Table 7 and Figure 7 indicate the distribution based on management of febrile seizures. In this study, T Clobazam (54%) and T Lorazepam (37%) are mainly prescribed. Winsley Rose *et al* also established that the *T. Clobazam* is the mainly prescribed drug for febrile seizures.

CONCLUSION

This study was aimed to assess the prevalence, causes, risk factor, associated condition and management of febrile seizure in children. Based on the study the highest frequency of febrile

seizure was seen in 6-24 month old children. According to the result, risk of febrile seizure was more in males, younger age and temperature. The main causative factor was Viral fever and the common type of seizure was simple febrile seizure. Parent's knowledge on care of children greatly influences the health status of child by reducing the mortality and morbidity rate. A well organized educational program should be conducted for parents in order to reduce anxiety and fear.

ACKNOWLEDGEMENT

The authors are thankful to management of Grace College of Pharmacy, Palakkad and staffs of both private and government hospital for their cooperation during the data collection period.

REFERENCES

1. Dr. Mabroka Alfoghi, Dr. Ismail Elghuwael and Dr. Amina Abograin-Epidemiological, Clinical and Laboratory features of children with Febrile Seizures. International Journal of Development Research.2016;6(10):9781-9786
2. Ghasem Miri Aliabad, Ali Khajeh, Afshin Fayyazi-Clinical, Epidemiological and Laboratory Characteristics of Patients with Febrile convulsions. Journal of Comprehensive Pediatrics, 2013 June;3(4):135-137
3. Maysaloun Muhammed Abdulla, Feras Sadi Abdulhadi- Knowledge, attitude and practices regarding febrile convulsions among Iraqi under 5 children's mothers attending pediatric department in a teaching hospital in Baghdad, International Journal of Advanced Research,2015 June;3(6):973-983.
4. Renjith Raj S A, Anjaly S Kumar, Manuja V S, Nithika Chacko, Neethu J –A prospective study on assessment of knowledge, attitude, practices of in parents of children with febrile seizure in a multispeciality tertiary care centre,2018 March;5(4):536-539.
5. Noor Faisal Shibeeb, Yalya Abdul Shaheed Altufaily-Parental knowledge and practice regarding febrile seizure in their children.Medical journal of Babylon.2019;16(1):58-64
6. Phougat Jyoti, Kumari Vinay, Kumar Yogesh- Assess knowledge and attitude of parents regarding childhood seizures in selected hospital Haryana, International journal of science and research, 2015 August;4(8):395-399.
7. Winsley Rose, Julius Xavier Scott –Intermittent Clobazam Therapy in Febrile seizure, Indian Journal of pediatrics 2005, 31-33
8. Berg AT, Shinnar S, Hauser WA, *et al.* A propsective study of recurrent febrile seizures. N Engl J Med 1992, 327:1122-1127.
9. Offringa M, Lubsen GD, Bqssuyt PM, Lubsen J. Seizure recurrence after a first febrile seizure: A multivariate approach. Dev Med Child Neurol 1992, 34:15-24.
10. Wolf SM, Carr A, Davis DC, et *al.* The value of phenobarbital in the child who has had a single febrile seizure: A controlled prospective study. Pediatrics 1977, 59: 378-385.
11. Verity CM, Golding J. Risk of epilepsy after febrile convulsions: A national cohort study. Br Med J1991, 303:1373- 1376.
12. Annegers JF, Hauser WA, Shirts SB, *et al.* Factors prognostic of unprovoked seizures after febrile convulsions. N Engl J Med 1987, 316: 494-498.
13. Watanabe K, Takahashi I, Negoro T, ASQ K, Miura K. Benign epilepsy of children with complex partial seizures following febrile convulsions. Seizure 1993, 2: 57-62.
14. Freeman J.M. The best medicine for febrile seizures. N Eng J Med 1992, 327: 1161-1163.
15. Knudsen FU. Rectal administration of diazepam in solution in the acute treatment of convulsions in infants and children. Arch Dis Child 1979, 54: 855-857.