

## RECOMMENDATIONS

# Association of Child Neurology (AOCN) Consensus Statement on the Diagnosis and Management of Febrile Seizures

JAYA SHANKAR KAUSHIK,<sup>1</sup> VISHAL SONDHI,<sup>2</sup> SANGEETA YOGANATHAN,<sup>3</sup> RACHANA DUBEY,<sup>4</sup> SUVASINI SHARMA,<sup>5</sup> KOLLECHERI PUTHENVEETIL VINAYAN,<sup>6</sup> PIYUSH GUPTA,<sup>7</sup> REKHA MITTAL<sup>8</sup> FOR AOCN EXPERT COMMITTEE\*

From <sup>1</sup>Department of Pediatrics, Pandit Bhagwat Dayal Sharma Post Graduate Institute of Medical Sciences, Rohtak, Haryana;

<sup>2</sup>Department of Pediatrics, Armed Forces Medical College, Pune, Maharashtra; <sup>3</sup>Department of Pediatric Neurology, Christian College of Medical Sciences, Vellore, Tamil Nadu; <sup>4</sup>Department of Pediatric Neurology, Medanta Hospital, Indore, Madhya Pradesh;

<sup>5</sup>Department of Pediatrics, Lady Hardinge Medical College and Kalawati Saran Children Hospital, New Delhi; <sup>6</sup>Department of Pediatric Neurology, Amrita Institute of Medical Sciences, Kochi, Kerala; <sup>7</sup>Department of Pediatrics, University College of Medical Sciences, Delhi; <sup>8</sup>Department of Pediatric Neurology, Madhukar Rainbow Children Hospital, Malviya Nagar, Delhi.

\*Full list of Committee members provided as Annexure.

Correspondence to: Dr Rekha Mittal, Additional Director (Pediatric Neurology), Madhukar Rainbow Children Hospital, Malviya Nagar, Delhi. drrekhamittal2008@gmail.com

**Justification:** Febrile seizures are quite common in children but there are controversies in many aspects of their diagnosis and management. **Methods:** An expert group consisting of pediatric neurologists and pediatricians was constituted. The modified Delphi method was used to develop consensus on the issues of definitions and investigations. The writing group members reviewed the literature and identified the contentious issues under these subheadings. The questions were framed, pruned, and discussed among the writing group members. The final questions were circulated to all experts during the first round of Delphi consensus. The results of the first round were considered to have arrived at a consensus if more than 75% experts agreed. Contentious issues that reached a 50-75% agreement was discussed further in online meetings and subsequently voting was done over an online platform to arrive at a consensus. Three rounds of Delphi were conducted to arrive at final statements. **Results:** The expert group arrived at a consensus on 52 statements. These statements pertain to definitions of febrile seizures, role of blood investigations, urine investigations, neuroimaging, electroencephalography (EEG), cerebrospinal fluid analysis and screening for micronutrient deficiency. In addition, role of rescue medications, intermittent anti-seizure medication and continuous prophylaxis, antipyretic medication and micronutrient supplementation have been covered. **Conclusion:** This consensus statement addresses various contentious issues pertaining to the diagnosis and management of febrile seizures. Adoption of these statements in office practice will improve and standardize the care of children with this disorder.

**Keywords:** Complex febrile seizure, Clobazam, Febrile status epilepticus, Simple febrile seizure, Valproate.

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**F**ebrile seizures (FS) refer to seizures that occur in association with fever but do not have any other definable cause of the seizure. Febrile seizures are one of the most common neurological complaints in emergency and outpatient units. The most common infection associated with FS is respiratory tract infection [1]. The three most common viral isolates in children with FS include influenza virus, adenovirus, and parainfluenza virus. In India, tropical infections such as malaria and dengue are also important causes of febrile seizures. There have been considerable advances in the understanding of FS in the past decade [2-4]. Considering the difference in ethnicity, demographics, and epidemiology of febrile seizures in Indian children, the Association of Child Neurology (AOCN) proposed to develop a consensus statement for evaluation and management of FS in Indian children.

### OBJECTIVE

The objective was to review the literature and develop a

consensus statement on evaluating and managing children with FS in India. These recommendations are targeted at general practitioners, pediatricians, emergency physicians, and primary care physicians.

### PROCESS

The consensus among the experts was achieved using the Delphi method. A modified Delphi method was adopted with three rounds of Delphi group consensus (**Web Fig. 1**).

**Expert group formation:** The AOCN formed a core working group of eight members, with six members in the writing group and two senior moderators. The group consisted of seven pediatric neurologists and one clinical pediatrician with a core interest in medical research. Apart from these eight experts, 25 subject experts, pediatric neurologists (AOCN members) and senior pediatricians, were contacted to form the expert group ( $n=33$ ). All expert members had been in clinical practice for a minimum of 5 years.

**Problem identification:** The topic of febrile seizures was covered under the following six heads: case definitions, the role of neuroimaging, electroencephalography, lumbar puncture, emergency treatment, and long-term management, including domiciliary management in febrile seizures. Each of the six writing group members were assigned one topic. They were asked to review the literature extensively and identify the questions that remain unaddressed from the literature. A google group was formed of the core group members. The review of literature and questions from each writing member were posted and discussed extensively. Overlaps in the questions were removed, some questions were pruned, and 43 questions were finalized for the first round.

**First round of Delphi meeting:** These 43 questions were initially circulated to 33 experts through Google forms. Most questions had a closed-ended response, with the last option being open-ended. All 33 experts gave their opinion in the first round of Delphi. Categorical responses, where more than 75% of experts agreed on a single response, were considered to have reached a consensus. [5] Of the initial 43 questions, the questions and the corresponding consensus statements that reached >75% agreement ( $n=20$ ) in the first-round consensus were presented by the moderator. These were not deliberated further. The contentious statements ( $n=23$ , 50-75% agreement) were presented by the moderator one by one, and discussed in the group, followed by online polling ([www.polltab.com](http://www.polltab.com)). The open-ended responses (if any) obtained during the first round were qualitatively analyzed using content analysis [6]. The initial statements were further expanded to cover all domains related to febrile seizures, which resulted in a total of 104 question [40 questions on definitions, 11 questions on investigation, 5 questions on neuroimaging, 6 questions on EEG, 37 questions related to management and 9 questions related to vaccination] (**Web Table I**).

**Second and third round of Delphi:** The second round of Delphi virtual meeting (Zoom video conferencing platform) was conducted; 28 of 33 experts attended this. All the identified questions were discussed over three virtual meetings lasting for a total duration of 4.5 hours. Of the 107 statements, 67 statements (64.4%) reached >75% agreement and were considered to have achieved consensus, and not deliberated further. However, the statements where consensus was not reached (50-75% agreement) in the second round ( $n=28$ , 26.9%) were discussed again. The statements ( $n=6$ , 5.8%) were reframed based on experts' discussion and suggestions and polled again (third round). Those statements which did not reach consensus even after the third round ( $n=3$ , 2.9%) were considered to have failed to reach an agreement.

**Final statements:** The final statements ( $n=52$ ) were

categorized into 13 subheadings: definitions, blood investigation, micronutrient deficiency, urine analysis, neuroimaging, electroencephalography (EEG), cerebro-spinal fluid (CSF) analysis, genetic testing, domiciliary care, acute management of a febrile seizure, intermittent prophylaxis, continuous prophylaxis, antipyretic medication, and role of micronutrient supplementation. Each subheading had one or more consensus statements about that topic, leading to a total of 52 statements. These statements were circulated among all experts for approval.

## RECOMMENDATIONS

The final group consensus statements related to definitions (**Table I**), investigations (**Table II** and **III**) and management (**Table IV**) have been outlined. The key messages have been summarized in **Box I**.

### Definitions

Definitions of febrile seizure, simple FS (SFS), and complex FS (CFS) are similar to the definitions adopted by other international guidelines. CFS traditionally includes those that are multiple, focal, and/or prolonged (>15 minutes). Literature suggests that children with multiple episodes are defined by some authors as SFS plus and are considered to behave like SFS instead of CFS. However, the group disagreed on the usage of this separate terminology of SFS plus [7]. Other terms like 'fever triggered epilepsy,' 'atypical febrile seizure,' 'febrile seizure alone' used by various authors were considered confusing and not recommended for clinical use by the expert group.

### Investigations

Serum electrolyte abnormalities, including hypocalcemia, are uncommon in children with FS. Considering the limited importance of serum ferritin and serum vitamin D levels, these investigations were considered redundant among children with FS unless clinically indicated. As most children do not have a focus of infection, urine analysis may be considered among those younger than 18 months with a febrile seizure. The clinician must consider further evaluation of central nervous system for infection if consciousness has not returned to pre-seizure state within one hour of onset. Lumbar puncture should be considered for children less than 12 months of age, and in children more than 12 months who have been pre-treated with antibiotics.

Routine neuroimaging is not recommended in children with SFS [2,4,8-9]. There is a diversity of opinion on recommending brain CT and/or MRI in children with CFS [8-9]. Emergent non-contrast CT brain may be indicated if there is a history of trauma, status epilepticus, clinical suspicion of raised intracranial pressure or presence of ventriculoperitoneal shunt in a child with fever and seizures

**Table I Consensus Definitions of Febrile Seizures**

<i>Terminology</i>	<i>Consensus definition</i>
Febrile seizures	A seizure accompanied by fever (temperature >38.4° C or 101° F) without central nervous system infection, metabolic disturbances, or a history of afebrile seizure or any acute neurological insult (severe electrolyte imbalance, meningitis, trauma) in children aged 6 months to 6 years. <sup>a</sup>
Simple febrile seizures	Febrile seizures without a focal component, which last less than 15 minutes, and do not recur within 24 hours
Complex febrile seizures	Febrile seizures that are focal and/or prolonged for more than 15 minutes and/or recur within 24 hours
Febrile status epilepticus	Febrile seizure lasting for 30 minutes or more
Febrile seizure plus	Febrile seizures that continue past the usual age where they are expected to resolve (6 years) and/or accompanied by afebrile generalized (tonic-clonic, atonic, myoclonic, myoclonic-atonic, or absence) or focal seizures
Genetic epilepsy with febrile seizure plus (GEFS+)	Febrile seizures plus with a family history of febrile seizures, febrile seizures plus, or afebrile seizures like generalized tonic clonic, myoclonic, absence atonic and focal seizures.

<sup>a</sup>FS may rarely occur in children younger than 6 months of age.

[10]. MRI brain with epilepsy protocol was considered the neuroimaging modality of choice by the expert group once the child has been stabilized. The purpose of MRI in the first episode of a CFS would be to look for features of viral encephalitis, acute disseminated encephalomyelitis, virus associated encephalopathy, intra-cranial space occupying lesions, cortical malformations and for hippocampal abnormalities.

In retrospective studies, prolonged FS have been noted as a significant risk factor for the development of mesial temporal sclerosis and consequent temporal lobe epilepsy [11]. The FEBSTAT study is an ongoing prospective cohort study planned to follow-up children with febrile status epilepticus to study the development of hippocampal sclerosis and temporal lobe epilepsy. In the first of the reports of MRI abnormalities in the FEBSTAT study, Shinnar, et al. [12] reported 11.5% of children with febrile status epilepticus had increased T2 signal in the hippocampus as compared to none in children with SFS, when imaged within 72 hours of the onset of seizure. Subsequently, Chan, et al. [13] reported the presence of hippocampal malrotation, a likely pathological error in brain development, in 8.8% of children with febrile status epilepticus as compared to 2.1% of the controls. Lewis, et al. [14] performed a follow-up study to see if the abnormal signal abnormalities in the hippocampus resulted in hippocampal sclerosis. MRI obtained after 1 year in 14/22 children with acute T2 hyperintensities in the hippocampus showed hippocampal sclerosis in 10 children. These results indicate that acute stage T2 hyperintensities after prolonged FS may lead to hippocampal sclerosis. However, whether this leads to temporal lobe epilepsy on follow-up remains to be seen. Moreover, the therapeutic implications of finding these abnormalities on the acute stage imaging are not clear at present. With this background, the group consensus was developed on obtaining an early MRI

**Table II Group Consensus on Investigations in Febrile Seizure***Blood investigations*

Complete blood count (CBC) is not required among all children with simple febrile seizures.

- CBC with C-reactive protein (CRP) could be considered for children with complex febrile seizures and those with febrile status epilepticus.

Routine blood sugar, serum electrolytes (sodium and potassium), and serum calcium testing are not required in children with simple febrile seizures.

- Routine blood sugar, serum electrolytes (sodium), and serum calcium testing may be considered among those brought convulsing to the emergency room, including those with febrile status epilepticus.
- Serum calcium may be considered among infants (<1 year) with simple febrile seizures.

Blood sugar testing and serum calcium testing may be considered among children with complex febrile seizures.

Serum sodium and potassium estimation are not required in all children with complex febrile seizures.

Serum magnesium levels are not indicated among children with simple and complex febrile seizures.

- The group could not reach any consensus on its estimation among children with febrile status epilepticus, considering the paucity of literature.

*Micronutrient deficiency*

All children with febrile seizures need not be screened for iron deficiency.

- It may be considered among those with clinical pallor on examination.

Routine assessment of serum phosphorus, alkaline phosphatase, and vitamin D is not required in febrile seizures.

- These tests may be performed if the child has clinical features of rickets or if the child has hypocalcemia.

**Table III Group Consensus on Specific Investigations in Febrile Seizure**

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1. *Neuroimaging*
    - 1.1 In children with simple febrile seizures, neuroimaging is NOT indicated.
    - 1.2 In children with the first episode of complex febrile seizure with prolonged or focal features, MRI brain should be considered within 72 hours.<sup>a,b</sup>
    - 1.3 Routine follow-up imaging is NOT required for those children whose initial neuroimaging did not suggest an alternate diagnosis.
  2. *Electroencephalography (EEG)*
    - 2.1 Routine EEG is NOT indicated among children with simple febrile seizure.
    - 2.2 EEG may be considered in children with complex febrile seizures; however, the prognostic significance of the abnormalities to predict future epilepsy is unclear.
    - 2.3 Additionally, EEG may be considered among those children with focal findings on neuroimaging.
    - 2.4 EEG, where indicated, should be performed within one week of febrile seizure or at the earliest feasibility.
    - 2.5 EEG protocol should include a minimum of 30-minute record and must include both sleep and awake state
  3. *Cerebrospinal fluid analysis (Lumbar puncture)*
    - 3.1 Lumbar puncture should be considered in children less than 12 months of age with first episode of FS, especially if they have not received immunization against *Streptococcal pneumoniae* and *Hemophilus influenzae* type B.
    - 3.2 Lumbar puncture should be considered among children more than 12 months who have been pre-treated with antibiotics.<sup>c</sup>
    - 3.3 CSF analysis is NOT required among children aged 12-18 months who have not received a full course of Hib and pneumococcal vaccination and there are no clinical features of meningitis.
    - 3.4 Lumbar puncture is NOT required for ALL children with complex febrile seizure
    - 3.5 All children with febrile status epilepticus as the first presentation of FS must be subjected to CSF analysis.
    - 3.6 Lumbar puncture is NOT indicated among children brought to emergency services in the sedated state after receiving benzodiazepines. If the child's sensorium continues to be obtunded after sufficient time elapses, then Lumbar puncture should be considered.
    - 3.7 Lumbar puncture should be *preferably* preceded by neuroimaging in children with focal neurological deficits, clinical symptoms, and signs of raised intracranial pressure.
    - 3.8 Routine CSF viral or bacterial panel is NOT indicated for all patients with febrile seizures; it is indicated only if the routine CSF analysis is indicative of meningitis.
    - 3.9 Lumbar puncture should be performed in FS in any age group if there are clinical features of meningitis.
  4. *Genetic testing*
    - 4.1 Genetic testing for Dravet syndrome may be considered in children recurrent febrile status epilepticus, onset of prolonged hemiconvulsive seizures below 1 year age. However, decision to order genetic investigations for screening for SCN1A must be made in consultation with a pediatric neurologist or geneticist with appropriate genetic counselling to understand the implications of these findings
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<sup>a</sup>This is to look for features of neuro-infection or ADEM which may have treatment implications. <sup>b</sup>In children with febrile status epilepticus, acute hippocampal changes and structural hippocampal abnormalities have been described but the therapeutic and prognostic significance of these abnormalities is unclear at present. <sup>c</sup>However, the decision is left at the discretion of the treating physician based on duration, route, and type of antibiotic received and the clinical condition of the child.

Brain, preferably within 72 hours, for children with focal, prolonged FS, including those with febrile status epilepticus. However, apart from ruling out the differential diagnoses as mentioned earlier, the therapeutic and prognostic significance of hippocampal abnormalities seen on MRI in the acute stage is not clear at present.

EEG is not recommended in developmentally normal children with SFS as it does not predict the recurrence of FS or subsequent epilepsy [15]. The role of EEG in CFS is not clear. EEG may be useful in the acute setting if the child remains encephalopathic after the seizure and is not regaining the baseline status, primarily to rule out ongoing electrographic events. Though some guidelines recommend performing EEG in CFS, a Cochrane review concluded that there are no randomized trials to support or refute EEG use

and its appropriate timing in children with CFS [8,16]. EEG may show non-specific abnormalities such as slowing or epileptiform abnormalities. But whether such abnormalities predict the future development of epilepsy is not understood. Conversely, a normal EEG does not exclude the development of future epilepsy. Hence, the group consensus was to consider EEG for children with CFS with a rider that the prognostic and therapeutic implications of the EEG findings are not clear at present.

### Management

Parental counseling is an important part of treatment, as FS are by and large benign. Many parents are afraid that their child may die, when they witness the first episode of febrile seizure. The pediatrician should educate the family that even

**Table IV Group Consensus Statement on Management of Febrile Seizure**

1. *Domiciliary care*
  - 1.1 Domiciliary care should be taught to parents of children with febrile seizure, including an explanation of recovery position, dose and route of abortive medication, when to administer repeat dose, and when to bring the child to the hospital.
  - 1.2 Duration of seizure after which abortive medication should be instituted in the non-hospital setting is 3-5 minutes.
  - 1.3 Intranasal midazolam (0.2 mg/kg) is recommended as abortive medication for domiciliary management of acute seizures.
  - 1.4 Intranasal midazolam may be preferred over rectal diazepam or buccal lorazepam<sup>a</sup>
  - 1.5 The abortive medication can be repeated after 5 minutes in case of prolonged seizures.
2. *Intermittent prophylaxis*
  - 2.1 Intermittent prophylaxis is NOT recommended for the first episode of simple febrile seizure.
  - 2.2 Intermittent prophylaxis may be considered among children with frequent recurrent simple febrile seizures with parental anxiety, and residence far from medical facilities and those with complex febrile seizure who have not been started on continuous prophylaxis.
  - 2.3 The drug of choice for intermittent prophylaxis is clobazam (0.5-1 mg/kg/day in two divided doses for 3 days maximum dose 20 mg/day). There is no need to taper the drug while stopping after 3 days.
  - 2.4 Parents should initiate intermittent prophylaxis if the child develops fever (>38 C) or when they administer antipyretic medication.
3. *Continuous prophylaxis*
  - 3.1 Continuous prophylaxis with anti-seizure medication may be considered among children with febrile status epilepticus, febrile seizures in a children with neurodevelopmental delay, frequent complex febrile seizures<sup>b</sup> and children with FS+/GEFS+ with afebrile seizures.
  - 3.2 Continuous prophylaxis is NOT recommended in simple febrile seizures
  - 3.3 Drug of choice for continuous prophylaxis is sodium valproate<sup>c</sup>. Baseline investigations like liver function tests are NOT required in an otherwise healthy child before starting sodium valproate.
  - 3.4 Once initiated, the anti-seizure medication should be considered for a 2 years seizure freedom period or guided individually based on primary syndrome (GEFS+/Dravet syndrome).
  - 3.5 Management of febrile status epilepticus must be similar to management of convulsive status epilepticus. In children who present to emergency services with febrile status epilepticus and who are already diagnosed with Dravet syndrome, FS+, GEFS+, sodium channel blockers (phenytoin) may be avoided.
4. *Antipyretic medication:* Paracetamol 15 mg/kg/dose 6 hourly may be considered for the febrile episode duration. Antipyretic medications administered round the clock for the duration of fever do NOT prevent occurrence or recurrence of seizure but will make the child comfortable.
5. *Micronutrient supplementation:* There is no role of empirical supplementation with oral iron, zinc, or vitamin D among children with a febrile seizure.
6. *Parental education: The parental education and counseling should cover the following aspects:*
  - Explanation about why febrile seizures occur and they do not constitute epilepsy
  - The risk of death during the seizure is negligible
  - Simple febrile seizures do not lead to epilepsy or intellectual impairment
  - Explanation about the risk of febrile seizure recurrence
  - Explanation on what is to be done if the child has fever.
  - Explanation on what is to be done if the child has a seizure
  - Basic first aid and recovery position to be taught to parents.
  - Advice regarding rescue medication to be explained to parents and when to give this medication.
  - Explanation about the danger signs, and when the child should be brought to medical attention.

<sup>a</sup>Buccal lorazepam is not available in India. Rectal diazepam gel also has availability issues, and also there are social issues in rectal administration. <sup>b</sup>There was no group consensus on number of episodes to define "frequent"; thus this was intentionally kept flexible to enable the treating physician to take a decision. <sup>c</sup>Sodium valproate is not preferred in children with suspected inborn errors of metabolism; the treating physician may consider use of alternative medication in such cases.

though dramatic in appearance, these seizures do not lead to neurological disease or dysfunction. The more parents understand about this condition, the less likely it is that they will rush to the emergency room. However, parents should also be educated on when to bring the child with a seizure to the emergency department because in some cases the cause may be a virus or a bacterial infection of the brain.

Six-hourly paracetamol may be advised for the first 48 hours in case of future episodes of fever. Antipyretic medications administered round the clock for the duration of fever may not prevent occurrence or recurrence of seizures but will make the child less uncomfortable. Parents must be educated and trained in the home management of seizures and the use of abortive medication. Rescue seizure

### Box I Key Recommendations for Diagnosis and Management of Febrile Seizures

*First episode of suspected febrile seizure:*<sup>a</sup> Routine complete blood count, blood sugar, serum electrolytes (sodium), and serum calcium testing are not required among all children with simple febrile seizure but may be considered among those brought convulsing to the emergency room, including those with febrile status epilepticus, or if clinically indicated.

*First episode of suspected febrile seizure:*<sup>a</sup> Routine assessment of serum calcium, serum phosphorus, alkaline phosphatase, and vitamin D and screening for iron deficiency anemia is not required in febrile seizure.

*Magnetic resonance imaging (MRI)*<sup>a</sup> brain with epilepsy protocol may be considered within 72 hours among children with complex febrile seizure with prolonged or focal features. If MRI is not available, CT scan can be done.

Electroencephalography (EEG)<sup>a</sup> should be considered in children with complex febrile seizure; however, the prognostic significance of the abnormalities to predict future epilepsy is unclear.

*Lumbar puncture*<sup>a</sup> should be considered for children less than 12 months of age, and in children more than 12 months who have been pre-treated with antibiotics.

The mainstay of management is parental education and counseling about the overall benign nature of the condition, good prognosis for future neurodevelopment outcome, and low likelihood of developing epilepsy.

Six hourly paracetamol may be advised for the first 48 hours in future episodes of fever. Antipyretic medications administered round the clock for the duration of fever do not prevent occurrence or recurrence of seizures but will make the child comfortable.

Parents must be educated and trained in the home management of seizure and the use of abortive medication (intranasal midazolam or rectal diazepam).

*Intermittent prophylaxis* [clobazam (0.5-1 mg/kg)] may be considered among children with one or more of:

- i) frequent recurrent simple febrile seizure,
- ii) parental anxiety, and
- iii) residence far from medical facilities, complex febrile seizure, including febrile status epilepticus.

*Continuous prophylaxis* with anti-seizure medication (sodium valproate) may be considered among children with

- i) febrile status epilepticus,
- ii) febrile seizures in a child with neurodevelopmental delay, and
- iii) children with FS+/GEFS+ with afebrile seizure.

<sup>a</sup>In subsequent episodes, investigations may be considered as per the clinical indications.

medication should be considered when the febrile seizure lasts longer than 3-5 minutes. The FEBSTAT study team has shown that prolonged FS are unlikely to stop spontaneously [17]. Intranasal midazolam was considered abortive rescue medication of choice for domiciliary management by the expert group. In case this is not available, rectal diazepam gel may be considered; although, it may also have availability issues.

The use of intermittent anti-seizure prophylaxis for simple FS is controversial. Its prescription should be avoided for the first episode of SFS. Given the overall benign nature of a SFS compared with anti-seizure medications' potential toxicities, treatment risks seem to outweigh the benefits. It may be considered for children with frequent recurrent SFS, parental anxiety and residence far from medical facilities, and for children with CFS, if not on continuous prophylaxis. The drug of choice is oral clobazam, considering its easy availability and low cost. The group reviewed reports of intermittent leveti-racetam for FS, but considering the paucity of robust evidence, the group did not consider the same as an alternative [18].

The decision for continuous prophylaxis is based on weighing the benefits of preventing FS recurrence vs risks of

possible adverse effects of anti-seizure medication. The indications are limited to those with febrile status epilepticus, FS+, and those with pre-existing neurodevelopmental disorders like cerebral palsy, global developmental delay or autism spectrum disorder. The FEBSTAT study had revealed that 14 of 22 children with acute hippocampal changes on MRI performed within 72 hours, had developed mesial temporal sclerosis on follow up MRI [14]. Considering the risk of hypoxic injury as well as higher chances of future febrile status epilepticus, the group included febrile status epilepticus as one of the indications for continuous prophylaxis other than FS+ and those with neurodevelopmental delay. Management of individual episodes of febrile seizures and febrile status epilepticus must be in line with the standard protocols for management of acute seizures and convulsive status epilepticus, except for those already diagnosed with FS+/GEFS+ spectrum where sodium channel blockers like phenytoin may be avoided.

Two topics were considered out of the ambit of this consensus: immunization in children with FS and the role of genetic investigations in FS. Pediatricians are advised to follow the Immunization Schedule (2020-21) recommended by Indian Academy of Pediatrics (IAP) for guidance on immunization [19]. The decision to order genetic investi-

gations for screening for *SCN1A* must be made in consultation with a geneticist, with appropriate genetic counselling to understand the implications of these findings.

## CONCLUSION

This consensus statement has been prepared considering the available evidence and expert opinion in situations where (frequently) evidence is lacking. However, there are certain limitations with Delphi method, which include firstly, fatigue among experts who are required to respond to same or similar questions in multiple rounds; second is lack of reliability as the same expert may answer the same question differently when it is administered multiple times; and third that it is a time consuming and laborious exercise for both researcher and participants with participant drop-outs [20]. Despite these limitations, Delphi method is a well-accepted robust method to reach at a consensus among experts. To conclude, the present consensus document aims to provide some clarity on the diagnosis and management of children with a febrile seizure, which will be useful for office practice. As more evidence is available from ongoing studies, these recommendations will be updated.

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*Note:* Additional material related to this study is available with the online version at [www.indianpediatrics.net](http://www.indianpediatrics.net)

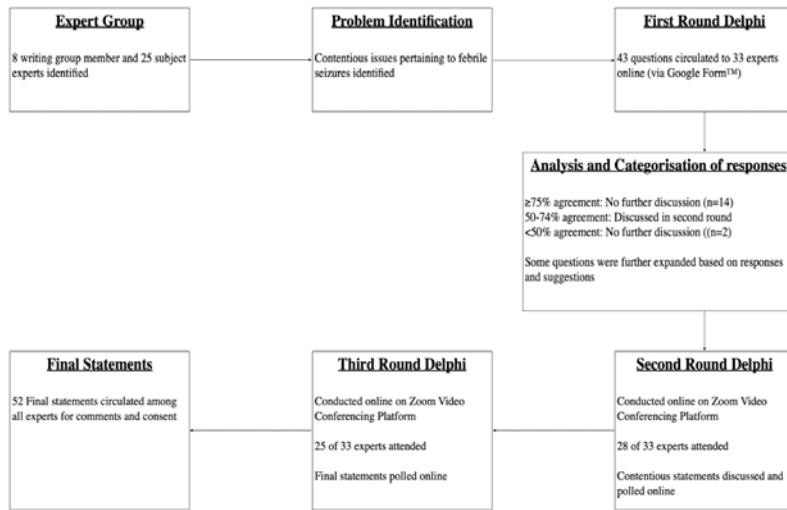
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## ANNEXURE I

### List of Expert Members

Anju Agarwal, *Delhi*; Satinder Aneja, *Noida*; Rachana Dubey, *Indore*; Sheffali Gulati, *Delhi*; Piyush Gupta, *Delhi*; Saji James, *Chennai*; Sujata Kanhere, *Mumbai*; Jaya Shankar Kaushik, *Rohtak*; Ajay Kumar, *Patna*; Ravi Kumar, *Bengaluru*; Ranjith Kumar Manokaran, *Chennai*; Devendra Mishra, *Delhi*; Rekha Mittal, *Delhi* (Convenor); Neeta Naik, *Mumbai*; Hansashree Padmanabhan, *Bengaluru*; Debasis Panigrahi, *Bhubaneswar*; Rajniti Prasad, *Varanasi*; Surekha Rajadhyaksha, *Pune*; Kamer Singh Rana, *Delhi*; Mini Sreedharan, *Trivandrum*; Deepak Sachan, *Delhi*; Abhijeet Saha, *Delhi*; Arushi Gahlot Saini, *Chandigarh*; Suvasini Sharma, *Delhi*; Jigyasha Sinha, *Kolkata*; Vishal Sondhi, *Pune*; Vrajesh Udani, *Mumbai*; Prashant Utage, *Hyderabad*; Kollencheri Puthenveetil Vinayan, *Kochi*; Sangeetha Yoganathan, *Vellore*.



Web Fig. 1 Study methodology.

**Web Table I** Summary of Responses from Round 1. The Questions That Do Not Need any Further Deliberations and have been Accepted are Shaded Green. The Questions That have been Completely Refuted by More Than 50% of Respondents Have Been Shaded Grey and will not be Deliberated Further. The Questions Where the Responses are Between 50 to 75% Range have been Modified Based on Suggestions Received in the Responses. These have been Shaded Yellow.

Question	Number of responses	Response 1	N (%)	Response 2	N (%)	Other responses	N (%)
A. Febrile seizures are defined as seizure accompanied by fever (temperature >38.4 C or 101 F) without central nervous system infection, metabolic disturbances or a history of afebrile seizure or any acute neurological insult (severe electrolyte imbalance, meningitis, trauma) occurring in infants and children aged 6-60 months of age.							
1. Do you perceive the need to define "febrile seizure" as a term?	28	Yes	28 (100%)	No	0		0
2. Do we need to mention "without central nervous system infection"?	27	Yes	21 (77.8%)	No	3 (11.1%)		3 (11.1%)
3. Do we need to mention "without metabolic disturbance"?	28	Yes	22* (78.6%)	No	2 (7.1%)		4 (14.3%)
4. Do we need to mention without a "history of afebrile seizure"?	28	Yes	21^ (75%)	No	7 (25%)		0
5. Do we need to mention "any acute neurological insult (severe electrolyte imbalance, meningitis, trauma)"?	28	Yes	26# (92.9%)	No	2 (7.1%)		0
6. Do you want to include "infants and children aged 6-60 months of age"?	28	Yes	21 (75%)	No	3 (10.7%)	Other age limits	4 (14.3%)
7. Do you want to revise the upper limit of considering febrile seizures?	28	No	13 (46.4%)	Yes, 6 years	10 (35.7%)	Others	5 (17.9%)
8. Do you want to revise the lower limit of considering febrile seizures?	28	No	20 (71.4%)	Yes, 3months	6 (21.4%)	Others	2 (7.1%)
B1. Simple febrile seizures are defined as febrile seizures that are generalized (without a focal component), duration lasting less than 15 minutes and not recurring within 24 hours							
9. Do you agree with above definition? †	28	Yes	8 (28.6%)	No	20 (71.4%)		
B2. Simple febrile seizures are defined with following variables a. Patient aged 6 months to 5 years b. Generalized (without a focal component), c. Spontaneous cessation of convulsion within 15 minutes d. One convulsion within a 24-hour period e. Return to alert mental status after convulsion f. Absence of pre-existing neurological abnormality g. Documentation of fever (>38.4 C)							
10. Do you agree with above definition? †	28	Yes	17 (60.7%)	No	11 (39.3%)		
11. In the definition, do we need to mention "Patient aged 6 months to 5 years"?	17	Yes	17 (100%)	No	0		
12. In the definition, do we need to mention "spontaneous cessation of convulsion within 15 minutes"?	17	Yes	16 <sup>a</sup> (94.1%)	No	1 (5.9%)		
13. In the definition, do you need to include "one convulsion within 24-hour period"?	17	Yes	16 <sup>b</sup> (94.1%)	No	1 (5.9%)		
14. In the definition, do you need to include "Return to alert mental status after convulsion"?	17	Essential	7 (41.2%)	Describe more	5 (29.4%)	No need to mention	5 (29.4%)

15. In the definition, do we need to include "Absence of pre-existing neurological abnormality"?	17	Yes	14 (82.4%)	No	3 (17.6%)		
16. In the definition, do we need to include "Documentation of fever (>38.4 C)"	17	Yes	8 (47.1%)	No	9 (52.9%)		
C. Complex febrile seizures are febrile seizures that are focal, prolonged (>15 minutes) and/or occurring in a flurry (more than one episode of seizure within first 24 hours of fever)							
17. Are you okay with the term "focal"?	28	Yes	23 (82.1%)	No, need separate term as "focal febrile seizure"	3 (10.7%)		2 (7.1%)
18. Regarding the terminology "complex febrile seizure", my opinion is:	27	Retain this terminology of complex febrile seizure	14 (51.9%)	Prefer to consider prolonged, recurrent, and focal febrile seizures separately	6 (22.2%)	Prefer to use the term CFS-M (multiple), CFS-P (prolonged), CFS-F (focal) instead of the above two options	7 (25.9%)
19. Regarding the proposed definition of complex febrile seizure, are you okay with the term "prolonged (>15 minutes)"?	28	Yes	26 <sup>b</sup> (78.8%)	No, I would prefer to keep this as a separate entity and call it "prolonged febrile seizure"	1 (3.6%)	No, prolonged should be defined as >30 minutes.	1 (3.6%)
20. Regarding the proposed definition of complex febrile seizure, what is your opinion on "occurring in a flurry (more than one episode of seizure within the first 24 hours of fever)"	28	Yes, but need modifications	22 <sup>c</sup> (78.6%)	No, I think it should be considered as a separate entity	3 (11.1%)	Others	3 (11.1%)
21. Do you want to define what is "multiple"?	28	Anything more than one	22 (78.6%)	No need to define	4 (14.3%)	Others	2 (7.1%)
22. Prolonged febrile seizure (PFS) is defined as a febrile seizure that lasts for more than 15 minutes. What is your opinion about including this as a separate terminology?	28	I want to consider as complex febrile seizures	18 (64.3%)	I agree it's a separate entity	9 (32.1%)	Others	1 (3.6%)
23. Febrile status epilepticus is defined as febrile seizure lasting 30 minutes or more and is considered the extreme end of the complex febrile seizure.	28	I want to consider it, but have suggested modifications	27 <sup>d</sup> (96.4%)	I don't agree to consider as a separate entity. It should be part of complex febrile seizures	1 (3.6%)		

24. Regarding the duration of FSE, the literature mentions it as 30 minutes. What is your suggestion regarding duration herein?	27	It should be like any other status epilepticus with T1>5minutes and T2>30minutes	16 (59.3%)	I agree with 30 min	10	Include 5 minutes operational definition	1 (3.7%)
25. "SFS+NDD". If a child with pre-existing neurological abnormality develops a simple febrile seizure, we can call it as SFS+NDD	27	Yes, this is good, I agree	10 (37%)	No, there is no need for such terminology	9 (33.3%)	Others	8 (29.6%)
26. If a child has more than two complex features (focal, multiple, prolonged), we can label it depending on the features as CFS-FM, CFS-MP, CFS-FP, CFS-FMP and so on.	27	Yes, this is good, I agree	11 (40.7%)	No, there is no need for such terminology, we can call it as CFS alone	12 (44.4%)	Other	4 (14.8%)
<b>D. Febrile Seizures Plus: Febrile seizures that continue past the usual age where they are expected to resolve and/or are accompanied by afebrile generalized (tonic-clonic, atonic, myoclonic, myoclonic-atonic, or absence) or focal seizures will be considered as febrile seizure plus</b>							
27. Regarding the proposed definition of FS+, what is your overall opinion	28	I completely agree with this ILAE terminology	21 (75%)	I do not agree with this definition proposed	3 (10.7%)	Other	4 (14.3%)
28. Regarding the proposed definition of FS+, what do you think about "that continue past the usual age"?	28	I am okay with above phrase	14 <sup>c</sup> (50%)	why don't we define it as 6 years	10 (35.7%)	Others	4 (14.3%)
29. Regarding the proposed definition of FS+, what do you think about "where they are expected to resolve"?	28	I am okay with above phrase	22 (78.6%)			Others	6 (21.4%)
30. Regarding the definition of FS+, what do you think about the phrase "and/or"	28	I am okay with above phrase	21 (75%)	No, this is not acceptable	7 (25%)	Others	0
31. One of proposed definition of FS+ (by one of the writing member) is as follows: Febrile seizures that continue past the usual age where they are expected to resolve with or without afebrile generalized (tonic-clonic, atonic, myoclonic, myoclonic-atonic, or absence) or focal seizures OR febrile seizures with afebrile generalized (tonic-clonic, atonic, myoclonic, myoclonic-atonic, or absence) or focal seizures. (as in Dravet's syndrome)	27	I completely agree with this definition	7 (25.9%)	I do not agree with this definition proposed	8 (29.6%)	Other comments	12 (44.4%)
<b>E. Genetic epilepsy febrile seizure plus (GEFS+) is defined as a familial epilepsy syndrome in which affected individuals may have variety of epilepsy phenotype, the most common being febrile seizure and febrile seizure plus</b>							
32. What is your opinion on this definition of GEFS+	28	I completely agree with this definition	24 (85.7%)	I do not agree with the definition	3 (10.7%)	Others	4 (14.2%)

33. Can we define GEFS+ simply as "FS+ with positive family history of FS"	28	Yes, this sounds better	10 (35.7%)	I do not agree to this proposal	11 (39.3%)	Others	7 (25%)
<b>F. Other questions related to definitions</b>							
34. What's your opinion on the term "atypical febrile seizure"	28	No need to mention it anywhere	9 (32.1%)	We can mention it that this term is same as CFS and is no longer used	17 (60.7%)	Other	1 (7.1%)
35. What's your opinion on the term "convulsive status epilepticus"	28	I do not think we need to use this terminology	17 (60.7%)	I think we need to define convulsive status epilepticus using standard definition of T1 and T2	11 (39.3%)		
36. What is your opinion on the term "febrile seizure with later epilepsy"? Literature defines it as Individuals where epilepsy (recurrent afebrile seizures) develops after the febrile seizure	27	I do not think we need to use this terminology in this document.	21 (77.7%)	It is okay to retain this term	6 (22.2%)		
37. What is your opinion on the term "fever provoked epilepsy" or "fever triggered epilepsy"?	28	I do not think we need to use this terminology	17 (60.7%)	It is okay to retain this term	10 (35.7%)	Others	1 (3.6%)
<b>G. Duration of seizure for labelling simple/ complex/ febrile status epilepticus</b>							
38. The duration of seizure for defining it as simple febrile seizure should be	31	≤15 min	16 (51.6%)	≤5min	14 (45.2%)	10 min	1 (3.2%)
39. The duration of seizure for defining it as complex febrile seizure should be	31	≥15 min	20 (64.5%)	≥5min	10 (32.3%)	10 min	1 (3.2%)
40. The duration of seizure while labelling it as febrile status epilepticus should be	31	ILAE definition of T1 and T2	24 (77.4%)	≥30 min	7 (24%)		
<b>H1. Investigations: Lumbar Puncture/ CSF analysis</b>							
<b>41. CSF analysis should preferably be performed for</b>							
a) All children ≤12 months	31	Yes	29 (93.5%)	No	2 (6.5%)		
b) All patients with febrile status epilepticus	31	Yes	16 (51.6%)	No	15 (48.3%)		
c) Children who have not received full course of HiB and pneumococcus vaccination	31	Yes	12 (38.7%)	No	19 (61.3%)		
d) All children with complex febrile seizures	31	Yes	7 (22.6%)	Yes	24 (77.4%)		
<b>42. Among children with age &gt;12 months lumbar puncture should be performed for</b>							
a) Children with signs of meningoencephalitis like neck rigidity, positive kernigs/ Brudzinski	31	Yes	31 (100%)	No	0		
b) Children who have received a single dose of IV cephalosporin or amikacin; or children	31	Yes	24 (77.4%)	No	7 (22.6%)		

wo have received >24 hours of oral cephalosporin/ amoxicillin or sulfa drugs							
c) LP decision can be individualized based on clinicians experience	31	Yes	17 (54.8%)	No	14 (41.2%)		
43. CSF in a child with febrile seizures should be analyzed for							
a) Cytology gram stain, proteins and sugar	31	Yes	31 (100%)	-			
b) Viral or bacterial panel should be done only if routine CSF analysis is suggestive of bacterial/ viral meningitis	31	Yes	20 (64.5%)	No	11 (35.5%)		
c) Routine CSF viral panel is NOT indicated for all patients with febrile seizures	31	Yes	27 (87.1%)	No	4 (12.9%)		
44. In a patient needing lumbar puncture,							
a) Lumbar puncture should be preferably preceded by neuroimaging wherever feasible	31	Yes	31 (100%)				
b) If neuroimaging is not feasible, then lumbar puncture may be considered if all of following conditions are met: seizure was generalized; there is no focal neurological deficit; there is no papilledema; and there are no clinical features of raised ICP	31	Yes	26 (83.9%)	No	5 (16.1%)		
H2. Laboratory investigations							
45. In children with febrile seizures with no localizing clinical features, the CBC $\pm$ ESR $\pm$ CRP should be considered							
a) For all patients with Febrile status epilepticus	31	Yes	25 (80.6%)	No	6 (19.4%)		
b) For all patients with complex febrile seizures	31	Yes	22 (71%)	No	9 (29%)		
c) For all patients with simple febrile seizures	31	Yes	2 (6.5%)	No	29 (93.5%)		
46. In children with febrile seizures with no localizing clinical features, urinalysis should be considered for							
a) all children $\leq$ 18m without any focus of infection	31	Yes	25 (80.6%)	No	6 (19.4%)		
b) Children >18m with clinical features suggestive of UTI (dysuria/ frequency/ urgency)	31	Yes	25 (80.6%)	No	6 (19.4%)		
47. Blood glucose should be checked for							
a) All patients with febrile status epilepticus/ ongoing seizures when seen	31	Yes	29 (93.5%)	No	2 (6.5%)		
b) All patients with complex febrile seizures	31	Yes	24 (77.4%)	No	7 (22.6%)		
c) All patients with simple febrile seizures	31	Yes	24 (77.4%)	No	7 (22.6%)		
48. Serum Ca should be checked for							
a) All patients with febrile status epilepticus/ ongoing seizures when seen	31	Yes	29 (93.5%)	No	2 (6.5%)		
b) All patients with complex febrile seizures	31	Yes	24 (77.4%)	No	7 (22.6%)		
c) All patients with simple febrile seizures	31	Yes	24 (77.4%)	No	7 (22.6%)		
49. Serum Na and K should be checked for all patients with							
a) All patients with febrile status epilepticus/ ongoing seizures when seen	31	Yes	26 (83.9%)	No	5 (16.1%)		
b) All patients with complex febrile seizures	31	Yes	14 (45.2%)	No	17 (54.8%)		

c) All patients with simple febrile seizures	31	Yes	6 (19.4%)	No	25 (80.6%)		
50. Serum Mg should be checked for							
a) All children with febrile status epilepticus	30	Yes	18 (60%)	No	12 (40%)		
b) All children with complex febrile seizures	30	Yes	3 (10%)	No	27 (90%)		
c) All children with simple febrile seizures	30	Yes	3 (10%)	No	27 (90%)		
51. Screening for Fe deficiency							
a) All children with febrile seizures need not be screened for iron deficiency.	30	Yes	27 (90%)	No	3 (10%)		
b) Screening should be done only if child has pallor on clinical examination.	30	Yes	30 (100%)	-			
c) Screening should include CBC and PBS for all patients	30	Yes	27 (90%)	No	3 (10%)		
d) Screening, preferably should include serum ferritin	30	Yes	25 (80.6%)	No	6 (19.4%)		
52. Routine assessment of Serum Phosphorus, alkaline phosphatase and vitamin D is not needed. These tests may be performed if the child has clinical features of rickets or if the child has hypocalcemia	31	Yes	26 (83.9%)	No	5 (16.1%)		
H3. Neuroimaging							
53. Urgent neuroimaging is indicated in							
a) Febrile status epilepticus	31	Yes	26 (83.9%)	No	5 (16.1%)		
b) Simple febrile seizures	31	Yes	2 (6.5%)	No	29 (93.5%)		
c) In complex febrile seizures urgent neuroimaging should be considered if the child has focal seizures	31	Yes	17 (54.8%)	No	14 (45.2%)		
d) Neuroimaging should be considered if the child has focal findings on EEG	31	Yes	22 (71%)	No	9 (29%)		
54. The neuroimaging modality of choice in these children should be MRI Brain epilepsy protocol ± contrast	31	Yes	28 (90.3%)	No	3 (9.7%)		
55. The ideal time to perform neuroimaging should be							
a) in Febrile status epilepticus	31	First 72h	25 (80.6%)	72h to 7 days	6 (19.4%)		
b) in complex febrile seizures	21	First 72h	14 (66.7%)	72h to 7 days	7 (33.3%)		
56. Routine follow up neuroimaging is not needed for these children if the initial neuroimaging did not suggest. An alternate diagnosis	30	Yes	28 (93.3%)	No	2 (6.67%)		
57. If the MRI findings are equivocal	30	Nuclear imaging should be performed to rule out MTS	9 (30%)	Nuclear imaging is not needed	21 (70%)		
H4. EEG							
58. Children with simple febrile seizures do not need a routine EEG	31	Yes	31 (100%)				
59. Routine EEG is indicated for							
a) Febrile status epilepticus	31	Yes	26 (83.9%)	No	5 (16.1%)		
b) Complex febrile seizures	31	Yes	20 (64.5%)	No	11 (35.5%)		

c) EEG should be done for patients focal findings on neuroimaging	31	Yes	19 (61.3%)	No	12 (38.7%)		
60. The ideal time to perform an EEG is							
a) Complex Febrile Seizure	31	1 day to 1 week	23 (76.7%)	Other	8 (25.8%)		
b) Febrile. Status epilepticus	31	1 day to 1 week	13 (41.9%)	First 24h	16 (53.3%)		
61. EEG protocol should include minimum 30 minute record and should include both awake and asleep states	31	Yes	31 (100%)	-			
H5. Genetic Testing							
62. Indications for genetic testing includes							
a) Child aged 12 to 25 months with >1 febrile seizure before age 18 months and myoclonic and/or atypical absence seizures refractory to one or more antiseizure drug	31	Yes	25 (80.6%)	No	6 (19.4)		
b) All children with family history of epileptic encephalopathy	31	Yes	25 (80.6%)	No	6 (19.4)		
c) All children with family history of GEFS+	31	Yes	18 (58.1%)	No	13 (41.9%)		
63. Genetic testing is not indicated for							
a) All children with simple febrile seizures	31	Yes	31 (100%)				
b) All children with complex febrile seizures	31	Yes	30 (96.8%)	No	1 (3.2%)		
c) All children with family history of febrile seizures	31	Yes	30 (96.8%)	No	1 (3.2%)		
64. Genetic testing of choice in these patients should be	30	Targeted exome sequencing	26 (86.7%)	Whole exome sequencing	4 (13.3%)		
I. Domiciliary Care							
65. Domiciliary abortive care should be taught to	31	All patients with febrile seizures	28 (90.3%)	Only patients with complex febrile seizures/ febrile status	3 (9.7%)		
66. Duration of seizure after abortive treatment should be instituted in non-hospital setting is	31	2 min	13 (41.9%)	5 min	16 (51.6%)	Others	2 (6.5%)
67. Which drug do you recommended for domiciliary (non-hospital setting) abortive seizure management	31	Midazolam	31 (100%)				
68. Dose and route of midazolam used for domiciliary abortive seizure management	31	Intranasal midazolam 0.2mg/kg	28 (90.3%)	Buccal midazolam 0.2mg/kg	3 (9.7%)		
69. Preferably, Midazolam should be used for abortive treatment at home instead of diazepam or lorazepam	31	Yes	24 (77.4%)	No	7 (2.6%)		
70. Repeat dose of abortive treatment should be administered	31	Repeat dose after 5 minutes if seizures are not controlled	26 (83.9%)	Do not repeat dose	3 (9.7%)	Others	2 (6.5)

		on 1 <sup>st</sup> drug delivery					
71. Parental education for seizure control should be done by	31	Doctor	25 (80.6%)	Nurse	4 (12.9%)	Others	2 (6.5)
72. The mode of parental education for domiciliary seizure control should be	31	Video	27 (87.1%)	Practical demonstration	27 (87.1%)	Printed leaflets	25 (80.6%)
73. The information about domiciliary seizure control should include Recovery position Drug/ Dose/ route Repeat dose When to bring to hospital	31	Yes	31 (100%)				
<b>J. Intermittent Antiseizure drugs</b>							
74. Intermittent antiseizure drug should be administered to							
a) All children with febrile status epilepticus or seizures lasting for $\geq 5$ minutes	31	Yes	27 (87.1%)	No	4 (12.9%)		
b) Recurrent febrile seizures ( $\geq 2$ episodes)	31	Yes	25 (80.6%)	No	6 (19.4%)		
c) All patients with complex febrile seizures	31	Yes	25 (80.6%)	No	6 (19.4%)		
d) All patients with febrile seizures including simple febrile seizures	31	Yes	10 (32.2%)	No	21 (67.7%)		
75. Antiseizure drug of choice for intermittent prophylaxis							
Clobazam	31	Yes	31 (100%)	-	-		
76. If intermittent prophylaxis has been advised for a child, in which of following scenarios do you recommend that parents should initiate intermittent prophylaxis							
a) Fever $>38.4$ C or when they start administering antipyretics	31	Yes	30 (96.8%)	No	1 (3.2%)		
b) With any illness like ARI/ AGE	31	Yes	6 (19.45%)	No	25 (80.6%)		
77. Duration of AED when initiated for intermittent prophylaxis							
	31	3 days	27 (87.1%)	During the complete febrile period	3 (9.7%)	2 days	1 (3.2%)
78. Should ASDs be tapered after intermittent prophylaxis							
	31	No	30 (96.8%)	Over 2-3 days	1 (3.2%)		
79. ASD and dose for intermittent prophylaxis							
	31	Clobazam 0.5 to 1 mg/kg in 2 divided doses	25 (80.6%)	Clobazam 1 mg/kg in 2 divided doses	4 (12.9%)	Others	2 (6.5)
<b>K. Antipyretics</b>							
80. Should antipyretics be administered around the clock prophylactically							
	31	Yes, should be administered for all patients with febrile seizures. They do not prevent seizures, but make the child comfortable	28 (90.3%)	Not recommended	3 (9.7%)		
81. Antipyretic of choice for management of fever in these children is							
	31	Paraceta-	25 (80.6%)	Ibuprofen	4 (12.9%)	PCM +	2 (6.5)

		mol (15mg/kg/ dose q6h)				Ibuprofen/ Others	
82. Minimum duration for use of prophylactic antipyretic should be							
	31	Duration of febrile period	25 (80.6%)	First 2-3 days	4 (12.9%)	not domain of neurologist to give recommendations for antipyretic use	1 (3.2%)
L. Continuous Anti-Seizure Drug prophylaxis							
83. In which of following conditions, should continuous antiseizure drugs be administered							
a) Febrile status epilepticus	31	Yes	26 (83.9%)	No	5 (16.1%)		
b) Febrile seizures in a child with neurodevelopmental delay	31	Yes	29 (93.5%)	No	2 (6.5%)		
c) GEFS+	31	Yes	29 (93.5%)	No	2 (6.5%)		
d) Focal seizures/ complex febrile seizures	31	Yes	8 (25.8%)	No	23 (74.2%)		
84. ASD used for continuous prophylaxis should be							
	31	VPA	25 (80.6%)	LEV	3 (9.7%)	Others	2 (6.5)
85. Do you recommend any tests before initiating continuous ASD							
	31	None	25 (80.6%)	Genetic tests	2 (6.7%)	LFT	7 (22.5%)
86. Duration for which. Antiseizure drugs should be continued once initiated							
	31	2 years of seizure free period; has to be guided individually based on primary syndrome (GEFS+/ Dravet)	27 (87.1%)	Others	4 (12.9%)		
M. Management of Febrile Status Epilepticus							
87. For the management of febrile status epilepticus, the benzodiazepine of choice in hospital setting should be							
	31	Lorazepam	31 (100%)				
88. The number of doses of benzodiazepines that should be administered before administering second line agent should be							
	2 doses	25 (80.6%)	One dose	6 (19.4%)	2 doses		
89. Should phenytoin be used for management of febrile status epilepticus							
	31	Yes	9 (29%)	No	22 (71%)		
90. In a child with febrile status epilepticus, the second line antiseizure drug should be							
a) Valproate	31	Yes	17 (54.8%)	No	14 (45.2%)		
b) Phenytoin	31	Yes	9 (29%)	No	22 (71%)		
c) Levetiracetam	31	Yes	4 (12.9%)	No	27 (87.9%)		
91. The third line ASD in febrile status epilepticus should be							
	31	Levetiracetam	16 (51.6%)	Phenobarbitone	8 (25.8%)	Others	8 (25.8%)
N. Primary prevention/ prevention of recurrences							
92. Should iron prophylaxis be used for primary prevention or prevention of recurrences							
	31	Yes (3-6mg/kg/day)	4 (12.9%)	No	27 (87.1%)		
93. Should Zinc supplementation be recommended for prevention of recurrences							
	31	Yes	1 (3.2%)	No	28 (90.3%)	Others	2 (6.5)
94. Should Vitamin D supplementation be recommended for prevention of recurrences							
	31	Yes, for	4 (12.9%)	No	25 (80.6%)	Others	2 (6.5)

		children on long term ASDs					
95. Should tepid sponging be advised for fever, in a child with febrile seizures							
	31	Yes	19 (61.3%)	No	12 (38.7%)		
96. If a child has a febrile seizure, should the vaccine schedule be changed/ interrupted							
	31	Yes	2 (6.5)	No	29 (93.5%)		
97. If a child has a febrile seizure, after what duration (in months), can we administer vaccines?							
	22	0-3 months	18 (81.8%)	>3m	4 (18.2%)		
98. Can we give MR/ MMR and varicella vaccine at same visit in a child with past history of febrile seizure?							
	31	Yes	25 (80.6%)	No	6 (19.4%)		
99. Should acellular pertussis/ Pentavalent vaccine be given in a child who has a febrile seizure?							
	31	Yes	30 (96.8%)	No	1 (3.2%)		
100. If a child has a vaccine associated febrile seizure, should the child be administered same vaccine in future?							
	31	Yes, but can avoid whole cell pertussis and if needed then administer clobazam prophylaxis	25 (80.6%)	No	6 (19.4%)		
101. Should prophylactic antipyretics be advised along with vaccines to reduce the risk of febrile seizures?							
	31	Yes	21 (67.7%)	No	10 (32.3%)		
102. Can the following vaccines be administered to patients who had febrile seizures							
a) MMR/ MR	31	Yes	25 (80.6%)	No	6 (19.4%)		
b) PCV	31	Yes	27 (87.1%)	No	4 (12.9%)		
c) Influenza	31	Yes	27 (87.1%)	No	4 (12.9%)		
d) Whole cell Pertussis	31						
e) Acellular pertussis	31	Yes	30 (96.8%)	No	1 (3.2%)		
103. Should routine post vaccination clobazam or diazepam be advised for children with febrile seizures?							
	31	Yes	6 (19.4%)	No	25 (80.6%)		
104. Parental counselling in febrile seizures should included							
a) Reassurance about the overall benign nature of the problem	31	Yes	31 (100%)	No	0		
b) Home management of seizure	31	Yes	31 (100%)	No	0		
c) Risk of recurrence of FS	31	Yes	30 (96.8%)	No	1 (3.2%)		
d) Advice regarding paracetamol	31	Yes	28 (90.3%)	No	3 (9.7%)		
e) Advice regarding vaccinations	31	Yes	28 (90.3%)	No	3 (9.7%)		
* Elaborate what is metabolic disturbance (n=6)							
^ Reframe as "prior history of afebrile seizure"							
# We can omit meningitis (n=1); omit/ modify bracketed conditions (n=6); elaborate bracketed conditions especially metabolic disturbances (n=1)							
§ Three responders did not agree to both definitions.							
*a 11/17 respondents (64.7%) agreed to statement without modifications. Suggestions for modifications were given (n=6): avoid use of term convulsing (n=6); reduce duration of cessation of seizure to 5 min (n=2).							
*b 17/28 (60.7%) respondents agreed to statement without modifications. Suggestions for modifications were given (n=9): include any child brought convulsing to casualty (n=4); reduce seizure duration to 5 minutes (n=4); reduce seizure duration to 10-15 minutes (n=1).							
*c The definition is fine as it is (n=2). Suggested modifications (n=20): Use multiple instead of flurry (n=16), more than one episode in 24 hours (n=1), cluster instead of flurry (n=1), recurrence rather than flurry (n=1), and clarify and/or (n=1).							
*d Agree with the definition as it is (n=5). Suggested changes: remove portion suggesting that it is extreme form of complex febrile seizure (n=10); include child brought convulsing to casualty (n=10); re-assess the time in accordance with recent definitions of status epilepticus (n=2)							
*e Six (21.4%) respondents agreed to definition without any modifications. Eight respondents wanted the exact age to be mentioned instead of "past the usual age".							