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

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**ABSTRACT**

**Justification:** Febrile seizures (FS) 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, 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 many contentious issues pertaining to the diagnosis and management of FS. Adoption of these statements in office practice will improve and standardize the care of children with FS.

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

**BACKGROUND**

Febrile 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 (**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*). 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. Five experts could not attend the meeting owing to personal commitments. However, the minutes of the discussion were approved by them. 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), cerebrospinal 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 1** for the ease of quick reading.

### 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 observation. 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 [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 en-

cephalitis, 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. Also, the therapeutic implications of finding these abnormalities on the acute stage imaging are not clear at present. Keeping all this in mind, the group consensus was developed on obtaining an early MRI 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. For example, Dravet syndrome is clinically characterized by the occurrence of prolonged focal FS in infancy. However, the EEG in the first year of life is usually normal in Dravet syndrome. 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 is not clear at present.

**Management**

Parental counselling is an important mainstay of treatment of febrile seizures, as they 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 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, the 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 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 this is also not easily available.

The use of intermittent anti-seizure prophylaxis for simple FS is controversial. Most of the expert group agreed on avoiding its prescription 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. The expert group agreed on considering it 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 was oral clobazam, considering its easy availability and low cost. The group reviewed reports of intermittent levetiracetam 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's recurrence versus 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 recommended Immunization Schedule (2020-21) and Update on Immunization for Children Aged 0 Through 18 Years by Indian Academy of Pediatrics (IAP) for guidance on immunization [19]. The decision to order genetic investigations 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 is 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.

*Contributors*: SS,RM, JSK: conceptualized the idea; JSK, VS, SY, RD, SS, KPV, PG, RM: constituted the writing committee and drafted the manuscript; JSK and VS were involved in administration of Delphi process; AOCN Experts: Participated as subject experts in the Delphi Process as described in the methodology; all the authors approved the final version of the manuscript. All authors approved the final version of manuscript, and are accountable for all aspects related to the study.

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*Note*: Additional material related to this study is available with the online version at www.indianpediatrics.net.

**Annexure 1**

**List of expert members**

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**Table I Consensus Definitions of Febrile Seizures**

| *Terminology* | *Consensus definition* |
|---|---|
| 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.[a] |
| 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. |

[a]*FS may rarely occur in children younger than 6 months of age.*

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

*Blood investigation*

- 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.

*Urine analysis*

- In children with febrile seizure without any evident focus of infection, urinary analysis should be considered among all children less than 18 months.
- In children beyond 18 months, urine analysis is indicated among those with clinical features to suggest urinary tract infection (dysuria, frequency, urgency)

*These are broad guidelines which can be modified as per the clinical context for the individual child*.

**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.[a,b] |
| 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 pretreated with antibiotics.[c] |
| 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 |

[a]*This is to look for features of neuro-infection or ADEM which may have treatment implications.*
[b]*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.* [c]*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.*

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

| *Management issue* | *Consensus statement* |
|---|---|
| 5. Domiciliary care | 5.1 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.<br>5.2 Duration of seizure after which abortive medication should be instituted in the non-hospital setting is 3-5 minutes.<br>5.3 Intranasal midazolam (0.2 mg/kg) is recommended as abortive medication for domiciliary management of acute seizures.<br>5.4 Intranasal midazolam may be preferred over rectal diazepam or buccal lorazepam*<br>5.5 The abortive medication can be repeated after 5 minutes in case of prolonged seizures. |
| 6. Intermittent prophylaxis | 6.1 Intermittent prophylaxis is NOT recommended for the first episode of simple febrile seizure.<br>6.2 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.<br>6.3 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.<br>6.4 Parents should initiate intermittent prophylaxis if the child develops fever (>38 C) or when they administer antipyretic medication. |
| 7. Continuous prophylaxis | 7.1 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[#] and children with FS+/GEFS+ with afebrile seizures.<br>7.2 Continuous prophylaxis is NOT recommended in simple febrile seizures<br>7.3 Drug of choice for continuous prophylaxis is sodium valproate^. Baseline investigations like liver function tests are NOT required in an otherwise healthy child before starting sodium valproate.<br>7.4 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).<br>7.5 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. |
| 8. 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. |
| 9. Micronutrient supplementation | There is no role of empirical supplementation with oral iron, zinc, or vitamin D among children with a febrile seizure. |
| 10. Parental education | The parental education and counseling should cover the following aspects:<br>• Explanation about why febrile seizures occur and they do not con- |

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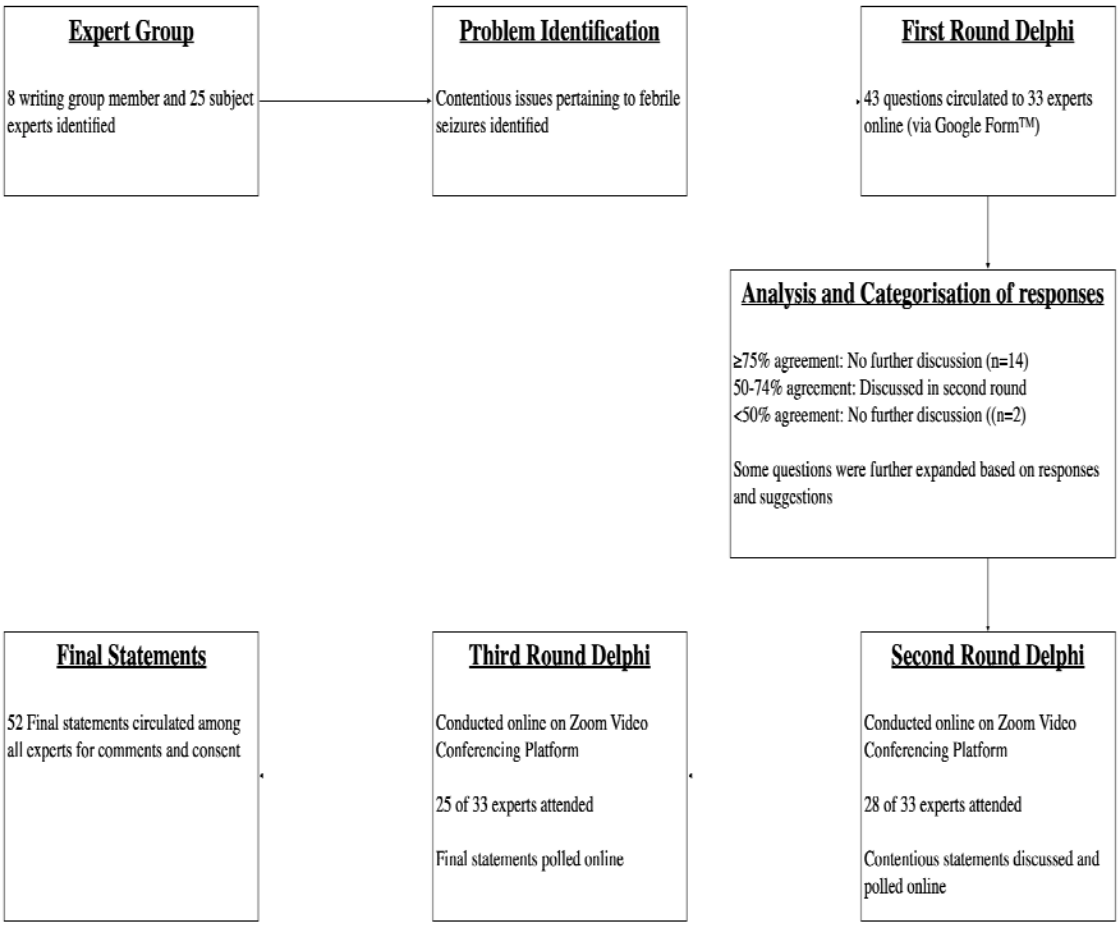
|---|---|
| | stitute epilepsy<br>• The risk of death during the seizure is negligible<br>• Simple febrile seizures do not lead to epilepsy or intellectual impairment<br>• Explanation about the risk of febrile seizure recurrence<br>• Explanation on what is to be done if the child has fever.<br>• Explanation on what is to be done if the child has a seizure<br>• Basic first aid and recovery position to be taught to parents.<br>• Advice regarding rescue medication to be explained to parents and when to give this medication.<br>• Explanation about the danger signs, and when the child should be brought to medical attention. |

**Buccal lorazepam is not available in India. Rectal diazepam gel also has availability issues, and also there are social issues in rectal administration.*
*# There was no group consensus on number of episodes to define "frequent"; thus this was intentionally kept ~~it~~ flexible to enable the treating physician to take a decision.*
*^ 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.*




**Web Fig. 1** Study methodology.

**Box 1 Key Recommendations for Diagnosis and Management of Febrile Seizures**

| *Key recommendations* |
|---|
| [a]First episode of suspected febrile seizure: 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. |
| [a]First episode of suspected febrile seizure: Routine assessment of serum calcium, serum phosphorus, alkaline phosphatase, and vitamin D and screening for iron deficiency anemia is not required in febrile seizure. |
| [a]MRI 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. |
| [a]EEG should be considered in children with complex febrile seizure; however, the prognostic significance of the abnormalities to predict future epilepsy is unclear |
| [a]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 |
| 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:<br>(i) frequent recurrent simple febrile seizure,<br>(ii) parental anxiety, and<br>(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<br>(i) febrile status epilepticus,<br>(ii) febrile seizures in a child with neurodevelopmental delay, and<br>(iii) children with FS+/GEFS+ with afebrile seizure. |

[a]*In subsequent episodes, investigations may be considered as per the clinical indications.*

**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<br>a. Patient aged 6 months to 5 years<br>b. Generalized (without a focal component),<br>c. Spontaneous cessation of convulsion within 15 minutes<br>d. One convulsion within a 24-hour period<br>e. Return to alert mental status after convulsion<br>f. Absence of pre-existing neurological abnormality<br>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*a (94.1%) | No | 1 (5.9%) | | |
| 13. In the definition, do you need to include "one convulsion within 24-hour period" | 17 | Yes | 16*b (94.1%) | No | 1 (5.9%) | | |
| 14. In the definition, do you | 17 | Essential | 7 (41.2%) | Describe | 5 (29.4%) | No need | 5 (29.4%) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| need to include "Return to alert mental status after convulsion" | | | | more | | to mention | |
| 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[*b] (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[*c] (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[*d] (96.4%) | I don't agree to consider as a separate entity. It should be part of complex | 1 (3.6%) | | |

| | | | | | | | |
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| | | | | febrile seizures | | | |
| 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%) |
| 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 | | | | | | | |
| 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[*c] (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%) |
| 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 | | | | | | | |
| 32. What is your opinion on this definition of GEFS+ | 28 | I completely agree with | 24 (85.7%) | I do not agree with the defini- | 3 (10.7%) | Others | 4 (14.2%) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | this definition | | tion | | | |
| 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%) |
| F. Other questions related to definitions | | | | | | | |
| 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%) |
| G. Duration of seizure for labelling simple/ complex/ febrile status epilepticus | | | | | | | |
| 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%) | | |
| H1. Investigations: Lumbar Puncture/ CSF analysis | | | | | | | |
| 41. CSF analysis should preferably be performed for | | | | | | | |
| 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%) | | |
| 42. Among children with age >12 months lumbar puncture should be performed for | | | | | | | |
| a) Children with signs of meningoencephalitis like neck rigidity, positive kernigs/ Brudzinski | 31 | Yes | 31 (100%) | No | 0 | | |
| b) Children who have received | 31 | Yes | 24 (77.4%) | No | 7 (22.6%) | | |

| | | | | | | | |
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| a single dose of IV cephalosporin or amikacin; or children wo have received >24 hours of oral cephalosporin/ amoxycillin 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 ±ESR±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 ≤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 | 26 (83.9%) | Do not repeat dose | 3 (9.7%) | Others | 2 (6.5) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | are not controlled on lrst 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<br>Drug/ Dose/ route<br>Repeat dose<br>When to bring to hospital | 31 | Yes | 31 (100%) | | | | |
| J. Intermittent Antiseizure drugs | | | | | | | |
| 74. Intermittent antiseizure drug should be administered to | | | | | | | |
| a) All children with febrile status epilepticus or seizures lasting for ≥5 minutes | 31 | Yes | 27 (87.1%) | No | 4 (12.9%) | | |
| b) Recurrent febrile seizures (≥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) |
| K. Antipyretics | | | | | | | |
| 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 | Paracetamol (15mg/kg/dose q6h) | 25 (80.6%) | Ibuprofen | 4 (12.9%) | PCM + Ibuprofen/ Others | 2 (6.5) |
| 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 children on long term ASDs | 4 (12.9%) | No | 25 (80.6%) | Others | 2 (6.5) |
| 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 acelluar 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 convulsion (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".