Practice Guideline
Simple Febrile Seizure

Inclusion Criteria:
- Age 6 months - 5 years
- 1 generalized tonic clonic seizure of < 15 minutes in 24 hours
- Fever ≥ 38°C at any time immediately prior, during, or after

Not routinely recommended: Lumbar puncture, CT, bloodwork, admission, emergent neuro consult

***Normal neuro exam**:
- Pediatric GCS 15
- Alert/easily arousable
- Non-focal exam

#Alternate Diagnoses: Meningitis, Subclinical status epilepticus, Encephalitis, Sepsis, Intracranial bleed/cerebral injury, Ingestion, Trauma

Exclusion criteria:
- Focal neurological deficit at time of presentation
- History of: neurologic disease, neurosurgical procedure or device, trauma, ingestion, congenital heart disease, malignancy, immuno-compromised, or mental retardation
- Complex febrile seizure (focal seizure, ≥ 2 seizures ≥ 30 mins apart)
- Seizure ≥ 15 mins

Child 6mos-5yrs presents STATUS POST generalized tonic clonic seizure

Perform History and Physical Exam

Does the patient have any of the following:
- Hypotension
- Toxic appearance
- Focal neuro findings (incl paralysis)
- Meningismus/nuchal rigidity
- Petechaie/purpura
- Bulging fontanelle

Yes → Exit Algorithm: Assess and stabilize ABCs

Is child post-ictal?

No → Assess for cause of fever

Yes →
- Place on ABC monitors
- If vital signs stable for age, observe for 1-2 hours with q30min neuro checks

Is exam worsening during observation period OR still post-ictal/lethargic after 2hrs?

No → Normal repeat neuro exam*?

Yes → Assess for cause of fever

Normal repeat neuro exam*?

No → Consider alternate diagnoses# and:
- D stick
- Lumbar Puncture
- CBC/BCx
- CT
- Chemistries

Prepare for transfer to higher level of care (neuro consult, admission) by EMS

Yes → Consider assessment for meningitis. Workup and treat as indicated, which may include any or all of the following:
- CBC/BCx
- Lumbar Puncture

Assess for cause of fever

Is the patient any of the below:
- Unimmunized
- Under-immunized (< 2 hib/prevnar)
- Pre-treated with antibiotics

Yes → Consider assessment for meningitis. Workup and treat as indicated, which may include any or all of the following:
- CBC/BCx
- Lumbar Puncture

No → Workup and treat cause of fever as clinically indicated (e.g. Acute otitis media, UTI, viral URI, recent immunization)

Consider discharge to home if following criteria met:
- At baseline neuro status
- Tolerating PO
- Non-toxic
- Cause of fever does not need admission

Simple Febrile Seizure

Information Summary

Introduction/Pathophysiology

Simple Febrile Seizures are the most common neurologic disease of childhood, occurring in approx. 4% of children less than 5 years old. It is a generally benign condition and the etiology of fever is most commonly a viral infection.

Signs and Symptoms

The criteria for diagnosis of a simple febrile seizure includes:

- Generalized tonic clonic seizure
- Lasts less than 15 minutes
- Only one episode in a 24 hour period
- No prior history of afebrile seizure episodes
- Associated with a temperature over 38 C
- Age 6 months to 5 years old
- Return to baseline after episode with no signs of meningitis

The following are **NOT** commonly seen in simple febrile seizures and other diagnoses should be considered:

- Meningismus
- Focal seizure or Todd's paralysis
- Status epilepticus
- Prolonged post-ictal period
- More than one episode in a 24 hour period
- Hypotension or other abnormal vital signs
- Signs of meningitis including meningismus

Diagnosis

The diagnosis of simple febrile seizure is primarily a clinical diagnosis. History and physical exam should be directed to the source of fever, which is most commonly a viral infection. Radiography and laboratory testing are generally not indicated for simple febrile seizure and are only indicated for looking for source of fever as indicated by physical exam. In cases that are not consistent with typical simple febrile seizures including: 1) status epilepticus/does not return to baseline or 2) physical exam suggests an alternative diagnosis such as meningismus or hypotension, then further testing is warranted as indicated. **Differential diagnosis** includes shaking chills, epilepsy and CNS infection. In the well appearing, fully immunized child not on antibiotics who meets criteria for simple febrile seizure, less than 1% will have bacterial meningitis.

Treatment

There are no specific treatments for simple febrile seizures. Anti-epileptic medications, EEG, neuroimaging, and neurology referrals are not recommended for first time episodes. Rectal diazepam is also not recommended for first time episodes of simple febrile seizures. For repeated episodes, an outpatient neurology referral may be warranted.

Simple Febrile Seizure Quality Measures

- Rate of IV/IM antibiotic
- Rate of antiepileptic administration
- Rate of CT or LP
- Transfer rate
- Admit rate
- Rate of ED return visit < 48 hrs

Common Parent Questions:

What is the chance this will happen again? About 1/3 of children with a simple febrile seizure will have a recurrent episode. Most will occur within 1-2 years of the first episode and will not occur with every fever.

Will my child have brain damage? There is no increase in mortality or neurologic deficits in children with a simple febrile seizure.

What is the chance my child may have a generalized seizure disorder or epilepsy later in life? The overall risk of epilepsy in the general population is ~1%. The risk of epilepsy after a first simple febrile seizure is 1-2%.

Does my child need medication to prevent a future seizure or fever?

The American Academy of Pediatrics does not recommend routine use of anti-epileptics given the overall benign nature of simple febrile seizures which is outweighed by the risk of drug side effects. Routine or scheduled anti-pyretic use has not been shown to decrease recurrent febrile seizure episodes and is not recommended to give when a child is afebrile. However, anti-pyretics can still be used for the purpose of fever control as warranted.

Acknowledgements

Boston Children's Febrile Seizure EBG (A. Kimia et al)

References

1. Neurodiagnostic evaluation of the child with a simple febrile seizure. Pediatrics 2011; 127:389
2. Green SM et al. Can seizures be the sole manifestation of meningitis in febrile children? Pediatrics 1993; 92:527