**FEBRILE SEIZURES**

A seizure occurs when there is a sudden change in behavior or sensation caused by abnormal and excessive electrical hypersynchronization of neuronal networks in the cerebral cortex. Normal inhibition is overcome by excessive excitatory stimuli.

**FEBRILE SEIZURE**: A convulsion, within 24 hours, of a temp ≥ 38°C in a child 6 months to 5 years, with no previous afebrile seizure history, in the absence of CNS infection, inflammation, acute metabolic abnormalities, etc.

### Simple Febrile Seizures (85%)
- Only 1 seizure in a 24-hour period
- Generalized; no focal features
- Lasting < 15 minutes

### Complex Febrile Seizures
- Frequent (recurrent seizures in 24 hours)
- Focal features
- Lasting ≥ 15 minutes

### Febrile Status Epilepticus
- Prolonged febrile seizure
- Lasting ≥ 30 minutes

Febrile seizures occur in 2-5% of children under 5 years old. They are the most common type of convulsions.

### History
- **Seizure history**: pre-ictal, ictal, and post-ictal. Ask about duration, focal symptoms, and provoking events. Do they take an AED?
- **Illness symptoms**: fever, nausea, vomiting, diarrhea, or rash. Symptoms suggestive of otitis media, respiratory illness, or UTI.
- **Past medical history**: neonatal history, perinatal complications, history of seizure, developmental delay, or head injury.

### Medication History
- Family history: family history of seizures, including febrile seizures and epilepsy.
- **Medication history**: meds that may lower seizure threshold, including antibiotics (eg: penicillins, metronidazole), anti-asthmatics (eg: theophylline), antidepressants (eg: bupropion, tricyclics), hormones (prednisone, insulin), etc.

### Other Risk Factors
- Recent immunizations, daycare attendance, developmental delay, etc.

### Physical Exam
- **ABCDs, vitals, level of consciousness**
- General physical exam: source of infection (eg: ears, upper respiratory tract, lungs, GI tract, urinary tract, and skin).
- Thorough neurological exam
- Developmental exam

### Red Flags
- Consider lumbar puncture if:
  - Altered level of consciousness
  - Lethargy, irritability
  - Meningismus – positive Kerning’s or Brudzinski’s sign
  - Bulging fontanelle – ↑ ICP
  - Focal neurological findings
  - Age: < 6 months or > 6 years

A CT scan of the head is obtained to establish the safety of performing an LP.

### Neuroimaging
- Indicated in children with:
  - Abnormal neurologic examination
  - Macrocephaly
  - Signs and symptoms of increased ICP (headache, nausea, vomiting, hypertension, confusion, double vision, papilledema)

### Investigations
- History of vomiting, diarrhea, and decreased fluid intake or physical exam findings of dehydration:
  - CBCdiff
  - Electrolytes
  - Glucose
  - Calcium
  - Urea

### Risk Factors for Recurrence
- Recurrence risk: 40%
  - 1st febrile seizure < 18 months
  - Duration of fever < 24 hours
  - Complex febrile seizure
  - Family history of febrile seizures
  - Temperature < 40°C (104°F)

### Generalized Epilepsy with Febrile Seizure Plus (GEFS+)
- Initially, these children have febrile seizures, but soon develop non-febrile seizures.
- Treatment: valproic acid

### Acute Treatment
- IV benzodiazepines (lorazepam, diazepam, midazolam) if the seizure has not stopped at 5 minutes.
- **Treat the cause** (eg: infection, metabolic disorders, stop the offending med, etc).

### Prophylactic Treatment
- Prophylactic medication is rarely indicated.
- Antipyretics have not shown to prevent recurrence.
- SL/PO lorazepam or diazepam prescription for children with a history of prolonged febrile seizures (> 5 mins).

### Education / Reassurance of Caregivers
- Febrile seizures are common, occurring in 2-5% of children ≤ 5 years old.
- No risk of death, brain damage, learning problems, or decreased IQ.
- Most patients have 2 or 3 febrile seizures in a lifetime.

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