

### Simple febrile seizure

- 6 months to 5 years
- Fever >38 C (100.4 F)
- Generalized convulsion (from onset)
- <15 minutes
- No recurrence within 24 hours
- No post-ictal neurologic deficits (i.e. Todd's paresis)
- Only applies to children w/o history of afebrile seizures
- Typically normal neurodevelopmental history (otherwise consider symptomatic seizures/epilepsy)

### Epidemiology

- 2-5% of kids (US)
- Peak incidence at 18 months
- Morbidity and mortality minimal (no reported deaths; no difference in IQ/academic performance in large cohorts)
- 1/3 have complex features
- 10% will have 3+ febrile seizures
- 50% recur within 6 months; 90% within 2 years
- ~2% go on to have epilepsy (compared to 0.5% general population risk); some studies up to 10%
  - Ascertainment bias—these patients may always have had epilepsy with febrile trigger
- 5% have febrile status (>30 minutes); accounts for ~25% of all status epilepticus in childhood
- Seizure within first 24 hours of fever onset, although seizure may precede fever

### Risk factors for febrile seizures

- Family history (1<sup>st</sup> or 2<sup>nd</sup> degree relative)
- Daycare
- Developmental delay/intellectual disability (symptomatic seizures/epilepsy?)
- NICU stay >30 days (possible remote symptomatic seizures (symptomatic sz/epilepsy?))

### Risk factors for recurrent febrile seizures

- Family history of febrile seizures
- Age <18 months (longer susceptibility period for manifesting febrile seizures)
- Peak temperature (if occurs with fever 101 F, RR 42% in next year; if fever 103 F, RR 29% in next year)
- <1 hour of fever prior to seizure increases RR

### Risk factors for epilepsy

- Neurodevelopmental disability
- Complex febrile seizure
- Family history of epilepsy
- <1 hour of fever prior to seizure

### Evaluation

- Lumbar puncture--most often is not necessary, but should be considered in:
  - All cases < 6 months
  - Complex febrile seizures <12 months (AAP guideline)
  - Clinical judgment for 6-12 months with simple febrile seizure (concerning exam, pre-treatd with abx, etc)
- EEG
  - Not indicated in simple febrile seizures
  - May be considered for complex febrile seizures due to duration or frequency
  - *Should* be performed for focal seizures (lateralized onset, post-ictal hemiparesis)
  - Focal slowing in post-ictal period is predictive of future risk of epilepsy (~40%)
- Neuroimaging
  - Based on clinical history and exam (exclude hemorrhage, non-accidental trauma)
  - MRI preferred over CT, although CT more accessible acutely
  - MRI indicated if focal abnormalities on EEG (slowing or inter-ictal discharges)
  - There is likely an increased risk for developing mesial temporal sclerosis with prolonged febrile seizures

### Treatment

- Most children do not require treatment
- Antipyretics are ineffective for prevention of recurrent febrile seizures
- Rectal diazepam (Diastat) may be prescribed prn for history of prolonged febrile seizures
- Side effects of chronic or intermittent anticonvulsants makes this approach undesirable for an essentially benign condition

### Reference

Baumann RJ, Duffner PK. Treatment of children with simple febrile seizures: The AAP practice parameter. *Pediatr Neurol* 2000;23:11-17.

Knudsen FU. Febrile seizures: Treatment and prognosis. *Epilepsia* 2000; 41:2-9.

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