



### History

- ▶ Age (1–72 months of age; peak: 18 months)
- ▶ Seizure type
- ▶ History of fever and infectious diseases
- ▶ Drug history
- ▶ Developmental history
- ▶ Past medical history (seizures?)
- ▶ Perinatal history
- ▶ Immunization status
- ▶ Family history (e. g. febrile seizures)

### Physical examination

- ▶ Acute
  - Infectious focus? Focal neurological symptoms/ Cranial nerve palsies
  - Meningeal signs (Neck stiffness, Kernig or Brudzinski signs, ...)
  - Irritability, behaviour
- ▶ Post-acute:
  - Developmental delay?

### Course

- ▶ Complete (neurological) recovery within approx. 1–2 hours after a simple febrile seizure

### Clues to diagnosis

#### Simple febrile seizure?

- ▶ Seizure type: generalized, tonic clonic > atonic
- ▶ 70 % of simple febrile seizures stop spontaneously within less than 5 minutes
- ▶ Duration < 15 minutes

#### Complex febrile seizure?

- ▶ Focal onset seizure (which secondarily generalizes)
- ▶ Duration > 15 minutes
- ▶ Seizure clusters:
  - Recurrent seizures within 24 hours
- ▶ No complete neurological recovery in the postictal period

#### Metabolic disorders?

- ▶ Dehydration with electrolyte imbalance
- ▶ Lasting decreased consciousness

#### Meningitis/Encephalitis?

- ▶ Decreased consciousness, headache, photophobia
- ▶ Neck stiffness, meningeal signs (pitfalls: may be absent or more subtle in children < 12–24 months of age)
- ▶ Irritability
- ▶ Vomiting
- ▶ Petechiae/purpuric rash
- ▶ Bulging fontanelle

#### Other reasons?

- ▶ Traumatic brain injury (TBI)
- ▶ Battered child

- ▶ > 18 months of age
- ▶ Obvious infectious focus

- ▶ < 18 months of age
- ▶ No obvious infectious focus
- ▶ Child is pretreated with antibiotics
- ▶ Recurrent medical consultation during the same period of fever

### Investigations/ Laboratory

- ▶ Blood
  - Full blood count and differential
  - Blood culture, PCR: HSV
  - CRP
- ▶ CSF<sup>1</sup>
  - White cell count, protein, glucose
  - Culture, PCR: HSV
- ▶ Urine analysis
  - Cytology
  - Culture

- ▶ Obvious infectious focus
- ▶ CSF normal
- ▶ Child in no obvious distress
- ▶ Complete (neurological) recovery

- ▶ **NO** obvious infectious focus
- ▶ Child critically ill
- ▶ CSF pleocytosis
- ▶ Lasting neurological symptoms or decreased consciousness

- ▶ Developmental delay

- ▶ Simple febrile seizure

- ▶ Further investigations

See chapter A.07 Neurometabolic dysfunction  
▶ GLUT1-Deficiency Syndrome

See chapter J.04 Meningitis and encephalitis

See chapter A.08 Traumatic brain injury and A.10 Battered child



### Developing epilepsy?

- ▶ Recurrent febrile seizures
- ▶ Afebrile seizures
- ▶ Developmental delay

See chapter E Epilepsy

- ▶ Dravet-Syndrome Spectrum (SCN1A mutation testing; if negative: SCN9A and PCDH19)

1 Recommended for children < 18 months of age; strongly recommended for children < 12 months of age (please follow the national guidelines)



▶ Continuing febrile seizure (> 3 minutes)	<ul style="list-style-type: none"> <li>▶ Diazepam rectally (&lt; 15 kg 5 mg, &gt; 15 kg 10 mg)</li> <li>▶ Diazepam (as IV injection over 3–5 minutes) 0,25 mg/kg/single dose</li> </ul>	Continuing seizure: <ul style="list-style-type: none"> <li>▶ Midazolam IV 0,1–0,2 mg/kg/single dose</li> </ul> Or <ul style="list-style-type: none"> <li>▶ Lorazepam IV 0,05–0,1 mg/kg/single dose</li> </ul> Or <ul style="list-style-type: none"> <li>▶ Diazepam 0,25 mg/kg/single dose</li> </ul> In case of continuing seizure: <ul style="list-style-type: none"> <li>▶ Phenobarbital IV 10 mg/kg/single dose</li> </ul>	Continuing seizure: Switch to the treatment algorithm of convulsive status epilepticus (see chapter A.02 Status epilepticus (SE))
▶ Spontaneously stopped febrile seizure	<ul style="list-style-type: none"> <li>▶ Physical examination (complete neurological recovery within approx. 1–2 hours?)</li> <li>▶ Monitoring</li> </ul>	Continuing fever: antipyretic treatment <ul style="list-style-type: none"> <li>▶ Physical methods</li> <li>▶ Antipyretic drug treatment               <ul style="list-style-type: none"> <li>– Paracetamol rectally: 75 mg &lt; 6 months, 125 mg 6–24 months, 250 mg 2–8 years, 500 mg &gt; 8 years every 6–8 hours</li> <li>orally: 10–15 mg/kg/single dose every 6 h;</li> <li>IV: 10–15 mg/kg/single dose orally every 6 h (max. 60 mg/kg/d)</li> <li>– Ibuprofen 2,5–10 mg/kg/single dose (max. 600 mg/single dose) every 6–8 h orally</li> <li>– Metamizole 10 mg/kg/single dose every 4–6 h p.o./IV</li> </ul> </li> </ul>	
	Questions, you should discuss with the parents: <ul style="list-style-type: none"> <li>▶ Diagnosis?</li> <li>▶ How often can a febrile seizure occur?</li> <li>▶ Does a simple febrile seizure have adverse effects on neurocognition or development?</li> <li>▶ Is a febrile seizure the beginning of a (lifelong) epilepsy?</li> <li>▶ Are there effective preventive procedures? (E. g. is antipyretic treatment working as a relapse prophylaxis?)</li> </ul>		
	Consultation after a febrile seizure <ul style="list-style-type: none"> <li>▶ At which date?</li> <li>▶ Which consultant?</li> <li>▶ Which examinations?</li> </ul>		
	Drug treatment in case of a relapse <ul style="list-style-type: none"> <li>▶ Diazepam rectally (&lt; 15 kg 5 mg, &gt; 15 kg 10 mg)               <ul style="list-style-type: none"> <li>– How to use?</li> <li>– How to preserve?</li> </ul> </li> </ul>		