

AAN Practice Parameter: Evaluating a first nonfebrile seizure in children

Laboratory Studies

- Unlikely to be abnormal if > 6 mos old, returned to baseline, no suggestive hx or sx
- Should be based on historical or clinical findings (e.g. dehydration, persistent MS change)
- Consider tox screen

Lumbar Puncture

- Perform if clinical concern of meningitis or encephalitis (e.g., < 6 mos old, persistent change in MS, meningeal signs)

EEG

- STANDARD
- Prognosis—1/2 of kids with sz and abnl EEG will recur versus 1/4 with nl EEG
- Determination of seizure type and epilepsy syndrome
- Timing?
 - No need for EEG before discharge from ED
 - Abnormalities within 24-48 hrs of a sz may be transient

Neuroimaging

- “Emergent” CT if will influence management or treatment
 - i.e. to rule out hemorrhage, mass effect, edema
 - e.g. if Todd’s paresis not quickly resolving or persistent change in MS
- Consider MRI on nonurgent basis if cognitive/motor impairment, exam findings, sz of partial onset, under 1 year of age, or focal EEG findings not suggestive of “benign”

Reference

Hirtz D, Ashwal S, Berg A et al. Practice parameter: evaluating a first nonfebrile seizure in children. Report of the quality standards subcommittee of the American Academy of Neurology, the Child Neurology Society, and the American Epilepsy Society. *Neurology* 2000; 55:616-623.

AAN Practice Parameter: Treatment of the child with a first unprovoked seizure

Past thinking was that seizures were dangerous and had long-term effects and that AEDs were benign and effective.

Potential risks from a second seizure

- Kindling—relevance of animal models unclear
- Injury—safety precautions
- SUDEP—risk of death in childhood-onset epilepsy is same as general population
- Psychosocial

Factors that increase recurrence risk

- 30-50% general recurrence risk by 2 years
- for remote symptomatic seizures, >50%
- with abnormal EEG, as above
- following prolonged first seizure, RR is no different than for brief first seizure
 - BUT more likely to have a prolonged sz at recurrence if they do recur

Effect of treatment

- Seizure recurrence might be decreased but pediatric data is weak
- No difference in achieving 1 or 2 year remission between starting med after 1st or 2nd sz

Side Effects of AEDs

- PHB—drowsiness, hyperactivity, sleep disturbance, IQ
- CBZ—slower information processing, dizziness, leucopenia (clinically significant?), hyponatremia (clinically significant?)
- PHT—gum hyperplasia, hirsutism, liver dysfunction
- VPA—alopecia, weight gain, polycystic ovarian disease, hepatic failure, pancreatitis, thrombocytopenia (dose-related)
- TPM—poor concentration and cognitive processing, kidney stones, glaucoma, oligohydrosis, acidosis (asymptomatic)
- LMG—Stephens-Johnson
- ZNS—kidney stones, hyperthermia
- OXC—reportedly less SE than CBZ, also hyponatremia
- LVT—behavioral, psychosis

Recommendations

1. AED not indicated for prevention of epilepsy
2. AED may be considered when benefits of reducing risk of 2nd sz outweigh risks of pharmacologic and psychosocial side effects

Hirtz D, Berg A, Bettis D, et al. Practice parameter: treatment of the child with a first unprovoked seizure. Report of the quality standards subcommittee of the American Academy of Neurology and the practice committee of the Child Neurology Society. *Neurology* 2003;60:166-175.