

Seizure Management in the ED

Further information regarding evidence-based treatment guidelines can be found by or by searching "Clinical Guidelines" on CookNet

Exclusion Criteria:
 1. Seizure plan already in place
 2. Non-epileptic Events (ie pseudo seizures)
 3. Less than 1 month of age

Initial Steps

- Determine how long patient has been seizing
- Determine which medicines have already been given during this episode (ie ambulance, UC, outside facility particularly benzo) skip to appropriate step
- Determine medication history
- Consider preregistering patient to order second line drugs

Definitions:
Status Epilepticus: Motor seizure or typical seizure longer than 5 minutes or two or more without return of consciousness between seizures.
Established status epilepticus (ESE): Seizure continues after benzodiazepine administration
Refractory status epilepticus (RSE): Seizures continue after 1st and 2nd line therapy

Seizure Onset

<p>Drug Treatment:</p> <ul style="list-style-type: none"> None Get both doses of benzodiazepines ready 	<p>General Measures:</p> <ul style="list-style-type: none"> Support airway, breathing (start O2), circulation Prepare 1st line meds Secure IV access 	<p>Investigations:</p> <ul style="list-style-type: none"> Confirm clinically that it is an epileptiform seizure Assess Risk for infection Investigate prior drug given
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1st Line: Benzodiazepines
 Give Max of two doses

<p>Drug Treatment:</p> <ul style="list-style-type: none"> 1st Line Benzodiazepines <p>IV Access:</p> <ul style="list-style-type: none"> Lorazepam 0.1mg/kg (max 4mg per dose) <p>No IV Access:</p> <ul style="list-style-type: none"> Midazolam 0.2mg/kg (max 10mg per dose) ½ per nostril <p>Order both 2nd Line agents</p>	<p>General Measures:</p> <ul style="list-style-type: none"> Cardiorespiratory Monitors, blood pressure q5 min, Correct hypoglycemia 	<p>Investigations:</p> <ul style="list-style-type: none"> Physical Exam and history If on antiepileptic medications consider drug levels Check Glucose Consider other lab tests if indicated
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2nd Line Medications

Dose 1:
 (Give 5 minutes after second benzodiazepine if seizure continues)

Dose 2:
 (Give 5 minutes after first dose infusion complete)

*It maybe reasonable to use any of these options depending on clinical situation

Infusion Rates
 Levetiracetam=Infuse over 15 min
 Fosphenytoin = 3mg/kg/min (max 150mg/kg/min)
 Phenobarb = 1mg/kg/min (max 30mg/kg/min)

- For unexplained status epilepticus or new focal seizure consider neuro imaging
- Consider EEG and neurology consult

No History of Epilepsy or Unknown Neonate

- Dose 1: Phenobarb 15-20 mg/kg in a single or divided dose
- May repeat doses of 5-10 mg/kg every 15-20 minutes as needed (max dose: 40 mg/kg)

Age < 2 months

- Dose 1: Phenobarbital IV 20 mg/kg (loading dose) (max dose 1,000mg)
- Dose 2: Phenobarbital IV 10 mg/kg (max total 30mg/kg) (Discuss other options with neurology)

Age >2 months

- Dose 1: Levetiracetam IV 60 mg/kg (max 4,500mg)*
- Dose 2: Fosphenytoin IV 20 mg/kg (max 1,500mg) (May give an additional 5 mg/kg dose, 10 minutes after initial loading infusion) or Phenobarbital IV 20 mg/kg (May give an additional 5-10 mg/kg dose, 10 minutes after initial loading infusion)*

Established Epilepsy Options
 On baseline antiepileptic drug

- Consider IV bolus with antiepileptic drug the patient is already on OR follow seizure plan OR

Neonate

- Dose 1: Phenobarb 15-20 mg/kg in a single or divided dose
- May repeat doses of 5-10 mg/kg every 15-20 minutes as needed (max dose: 40 mg/kg)

Age < 2 months

- Dose 1: Phenobarbital IV 20 mg/kg (loading dose) (max dose 1,000mg)
- Dose 2: Phenobarbital IV 10 mg/kg (max total 30mg/kg)

Age >2 months

- Dose 1: Levetiracetam IV 60 mg/kg (max 4,500mg)*
- Dose 2: Fosphenytoin IV 20 mg/kg (max 1,500mg) (May give an additional 5 mg/kg dose, 10 minutes after initial loading infusion) or Phenobarbital IV 20 mg/kg (May give an additional 5 mg/kg dose, 10 minutes after initial loading infusion)*

3rd Line Medication
 Start midazolam drip 10 mins after second dose of 2nd line medication

- Midazolam Bolus 0.15mg/kg (max 10mg) and start continuous infusion
- Continuous EEG
- Titrate baseline seizure medications
- Goal of 3rd Line medications to be administered within 60 mins

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