Witnessed or suspected seizure
GOAL IS TO PREVENT seizure from lasting > 5 minutes

**STABILIZE AND ASSESS THE PATIENT**

1. Check ABC’s
   - Evaluate and secure the airway
   - Provide 100% oxygen (non-rebreather)
   - Assess and support ventilation
   - Check and establish monitoring of vital signs
2. Check vascular access
3. Note the time and check time of seizure onset
4. Check bedside glucose
   - If glucose <60 mg/dl, administer 2 ml/kg D25%W or 5 ml/kg D10%W
5. Administer antipyretics as indicated

**SEIZURE DURATION NOW 5 MINUTES**

1. LOREZAPAM IV or IO
   - 0.05- 0.1 mg/kg
   - Maximum 2 mg/dose
   - OR
2. MIDAZOLAM
   - IM or IN 0.2 mg/kg
   - IV OR IO 0.1 mg/kg
   - Maximum 10 mg/dose
   - Maximum 5 mg/dose

Repeat as needed every 3-5 minutes if seizure continues

**SEIZURE CONTINUES**

1. LOAD with:
   a. Levetiracetam 20 mg/kg (Max 2000 mg)
   - OR
   b. Fosphenytoin 20 mgPE/kg (Max 1500 mg)
     i. If home medication 10mgPE/kg
2. ASSESS NEED FOR INTUBATION
3. RE-ASSESS ABC’s
4. PAGE NEUROLOGY

**SEIZURE CONTINUES**

1. LOAD with a 2nd medication
   a. Levetiracetam 20-50 mg/kg (Max 2500 mg)
   - OR
   b. Fosphenytoin 5-10 mgPE/kg (Max 1500 mg)
   - OR
   c. Phenobarbital 20 mg/kg (Max 1500 mg)
     i. Neonates: 20 mg/kg; repeat 5-10 mg/kg x 1 if seizure persists
2. CALL PICU
3. Consider Intubation

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**General Principles**

1. Remember ABC’s
2. Get a good history and description from a witness
3. Determine time of onset of seizure and whether this is a seizure
4. Follow sequence of benzodiazepine, Fosphenytoin, Midazolam
5. Substitute Phenobarbital for Fosphenytoin in neonates.

**Key to effective treatment**

1. Begin treatment early, within 3-5 minutes of seizure onset
2. Use adequate doses of effective drugs.
3. Prepare next line drug

**Select initial labs**

1. Electrolytes (Glucose, Na, Ca, Mg). Consider blood gas for STAT electrolytes
2. AED levels
3. CBC

**Neonates (<1 month age)**

Load with Phenobarbital 20 mg/kg IV

1. Check vital signs
2. Additional diagnostic testing
3. Consider maintenance Fosphenytoin: 5/mg/kg/d =q8 hr
   - Or Phenobarbital 3-5 mg/kg/d

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Reviewed By: R. Coates; S. Herron
Publication Date: August 2018
Review Date: May 2018
REFRACTORY STATUS EPILEPTICUS

Laboratory Studies
1. Electrolytes
2. Toxicology (serum/urine)
3. LFT’s, Coags, Albumin
4. Metabolic screens
   - Lactate, Pyr, CPK, ketones, NH3, acylcarnitine, amino, organic acids
5. Blood and urine cultures
6. CSF (meningoencephalitis panel, HHV6, EBV, CMV, cytology, lactate)
7. Antiepileptic levels
8. Imaging as indicated when patient is stable

Refactory Status Epilepticus in Neonates
1. Midazolam (see dosing)
2. 50-100 mg pyridoxine IV with EEG monitoring. If no response, then
3. Add empirically Pyridoxal phosphate 30 mg/kg/d po or ng
   Obtain serum and urine organic acids pre and post treatment
4. Folinic acid

RISK ASSESSMENT FOR STATUS EPILEPTICUS
1. Acute Symptomatic SE (e.g. TBI, Meningitis, ICH, Stroke, Encephalitis, Toxin)
   - Highest mortality and morbidity
2. Febrile Status Epilepticus or Complex Febrile Seizures
   - Increased long-term risk of mesial temporal sclerosis
3. Remote Symptomatic Epilepsy – history of previous neurologic injury with new onset seizures
4. Known Epilepsy
   - Low mortality and morbidity
5. First Seizure in Idiopathic Epilepsy

Secure airway, give oxygen, glucose (if indicated), monitor blood pressure, IV access, check electrolytes

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