Seizure & Status Epilepticus (SE) – ED/Inpatient/ICU Clinical Practice Guideline

For Patients > 2 months old

Status Epilepticus defined as: (i) continuous clinical and/or electrographic seizure activity >5 minutes (ii) recurrent seizure activity without return to baseline in between seizures

**Interventions**

- Stabilize patient (airway, breathing, circulation, neurologic exam)
- Time seizure from its onset, monitor vital signs
- Assess oxygenation, give oxygen via nasal canula/mask, consider intubation if needed
- Initiate cardiac and respiratory monitoring
- Obtain IV access
- If appropriate collect:
  - CMP, CBC with diff, toxicology screen, AED trough levels
  - Collect finger stick blood glucose
  - If glucose < 60 mg/dl, administer 5mL/kg D10W IV

**Criteria to transport from UC to the ED:**
- Stage I medication did not resolve seizure
- Patient not at baseline mental status
- Respiratory depression and/or concern for airway
- Onset of new symptoms

**Adjunct Second-Line options:**
Consider in cases of medication shortage or if patient already on adjunct medication:
- **Valproic acid:** IV, 40mg/kg x 1 dose (only in patients known to take as home medication) Max single dose 3000mg, infuse over 20 min
- **Phenobarbital:** IV, 20mg/kg x 1 dose; Max single dose 1000mg; Infuse over 20 minutes
- **Lacosamide:** IV, 10 mg/kg x 1 dose (max single dose 200-400mg); infuse over 30 min

- If new onset seizure, refer to new onset seizure guideline
- If established patient, follow up with PCP/Epileptologist/Neurologist
- Consider admission

**Adjunct Third-Line Medication Option:**
Pentobarbital IV infusion:
5-10 mg/kg load over 1 hour, then begin infusion at 1mg/kg/hr

**Medications**

- **Midazolam Intranasal**
  - 0.2 mg/kg
  - Max single dose 10mg
  - Max volume 1mL per nostril
  - OR
  - Diazepam Per Rectum
  - ≤5yo and ≥5kg: 0.5mg/kg
  - 6-11yo: 0.3mg/kg
  - ≥12yo: 0.2mg/kg
  - Max single dose 20mg
  - OR
  - Midazolam IM
  - 0.2 mg/kg
  - Max single dose 10mg

- **Lorazepam IV (Preferred)**
  - 0.1mg/kg
  - slow IV push
  - Max single dose 4mg
  - OR
  - Diazepam IV
  - 0.2mg/kg; dose slow IV push
  - Max single dose 10mg

- **Levetiracetam**
  - IV, 60mg/kg x 1 dose
  - Max single dose 4500mg; Infuse over 15 minutes

- **Fosphenytoin IV**
  - 20mg PE/kg x 1 dose
  - Max 1500mg PE/dose
  - [Do not use in patients with known SCN1a/Dravet Syndrome]

- **Phenobarbital IV**
  - 20mg PE/kg x 1 dose
  - Max single dose 3000mg
  - Infuse over 20 minutes

- **Lacosamide IV**
  - 10 mg/kg x 1 dose (max single dose 1000mg); infuse over 30 min

- **Pentobarbital IV Infusion:**
  - Bolus: 0.2 mg/kg (Max single dose 10 mg)
  - Start continuous infusion at 0.1 mg/kg/hr.
  - Re-bolus every 5 minutes until clinical seizures stop
  - Increase drip rate in increments of 0.05-0.1 mg/kg/hr (Max dose 2 mg/kg/hr) in consultation with neurology

**Time of Seizure**

0-10 min

**Stage I Impending SE**

- If patient already received Stage I at home or EMS, proceed to Stage II recommendations

10-30 min

**Stage II Established SE**

- If seizure not resolved, proceed to Alternative Second-Line agent

30-60 min

**Stage III Refractory SE**

- If seizure persists or recurs after 24 hours of Continuous Infusion therapy, consider Epileptologist consult

>24 hours

**Stage IV Super Refractory SE**

**Update: 6.19.2023**

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Original-Aug 18, 2022

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