STATUS EPILEPTICUS (SE)

(Last updated 2/5/209 Reviewers: Hong Bo MD)

PRESENTING COMPLAINT: Seizure > 5 minutes

FINDINGS

- **A** Check airway
- **B** ↑RR, ↓SpO2
- **C** ↑BP (if seizure persists, it will go down), ↑HR
- **D** Unconscious U, delirious D*
- **E** Tonic/clonic motor activity of whole body or local limb
- **L_{PC}** ↓PaO2, ↓ PCO2**,** ↑ glucose (hyperosmolar nonketonic hyperglycemia)
- **U_{PC}** N/A

***V** (verbal), **P (**pain), **U** (unconsciousness), **D** (delirious)

U_{PC} (point of care ultrasound) **L_{PC}** (point of care labs)

Definition: Continuous seizure lasting longer than 5 minutes or recurrent seizures without return to baseline clinical state in between the seizure attacks

OTHER HISTORY

Predisposing Conditions: Noncompliance with antiepileptic drugs, withdrawal syndromes (alcohol, drugs, e.g. benzodiazepine), acute brain injury, infection, metabolic abnormalities (e.g. hypoglycemia, hyponatremia)

Signs & Symptoms: Tonic-clonic or non-convulsive SE (with or without consciousness impairment); continuous/persistent or repetitive ictal activity on EEG

OTHER INVESTIGATIONS

- **Labs:** Electrolytes, glucose, blood count (↑WBC), blood alcohol level, toxicology screen, blood drug levels, creatine kinase, lactate, troponin, liver function test
- **Monitoring:**
  - EEG: continuous EEG preferred until seizure is controlled
  - Hemodynamic status and respiratory function (SaO2)
- **Imaging:** Consider CT head, LP

THERAPEUTIC INTERVENTIONS

- **General:**
  - **Airway protection:** consider intubation/mechanical ventilation
  - **Address underlying conditions:** correct electrolytes abnormalities, hypoglycemia, etc.
  - **Seizure precautions:** padded side of the beds and other means to prevent injury

- **Medications:**

  First Line:

  - **Benzodiazepines:** lorazepam 4 mg IV every 3-5 minutes up to 0.1 mg/kg IV*; if IV access is not available, midazolam 10 mg IM.
  - **Fosphenytoin** 20 mg/kg phenytoin equivalents (PE) at 100-150 mg PE/min. If fosphenytoin is not available, Phenytoin 20mg/kg at 25-50 mg/min. Reduce infusion rate for hypotension and other significant adverse effects of infusion seen.

    OR
  - **Sodium valproate** 20-40 mg/kg IV. No need for BP/ECG monitoring during infusion.

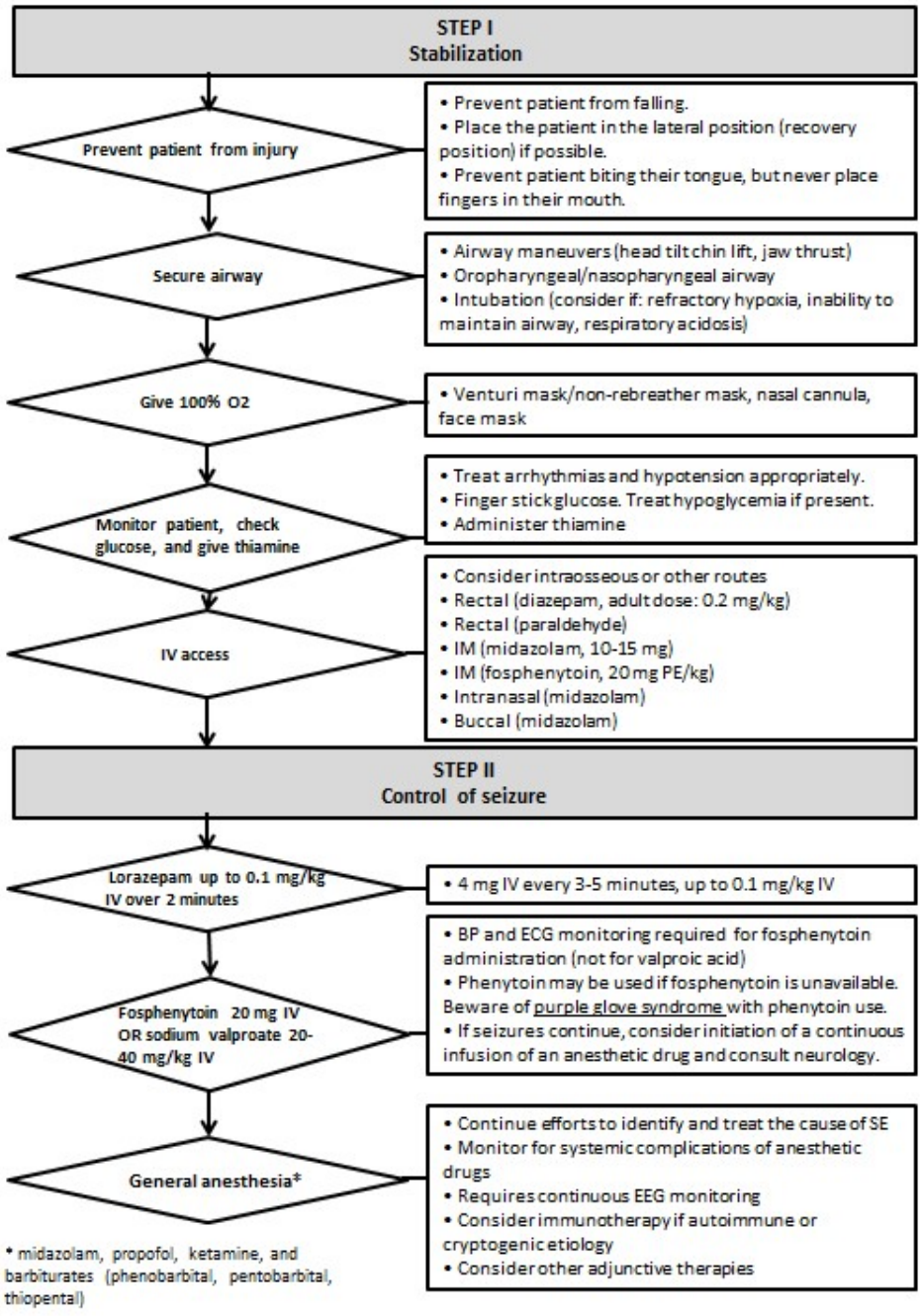
  Options for refractory SE:

  - Continuous infusion anesthetic drug (e.g. midazolam, propofol, ketamine, pentobarbital or thiopental)
  - Additional non-anesthetic antiseizure drugs in nonconvulsive SE (e.g. phenobarbital, levetiracetam, lacosamide)
  - Crystalloids and pressor support for hemodynamic instability, e.g. phenylephrine
- **Consult:** Neurology, Poison control

MANAGEMENT AFTER STABILIZATION

- **Further diagnostics**: Brain MRI
- **Supportive measures:** DVT prophylaxis
- Continuous EEG
- Check blood level of antiepileptic drugs

ALGORITHM



4) REFERENCES & ACKNOWLEDGMENT

Acknowledgement: *Benjamin Bonneton, MD; Perliveh Carrera, MD; Ognjen Gajic, MD; Philippe R. Bauer, MD; Sara Hocker, MD*

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