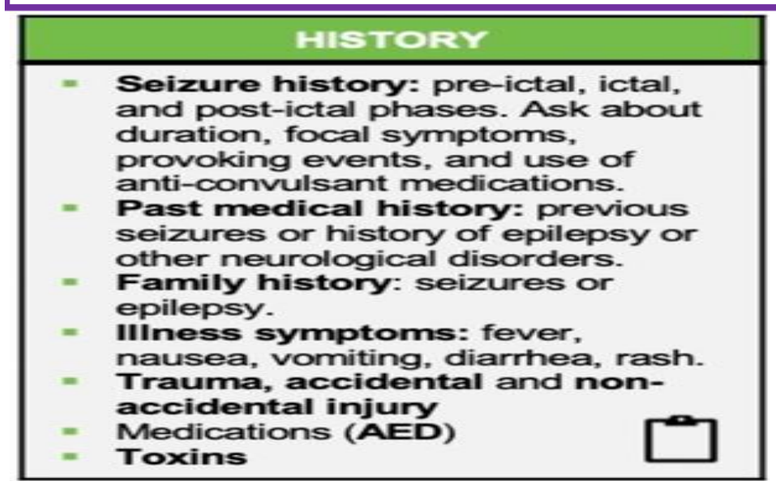
Management algorithm for children Status Epilepticus in the Emergency Department

In established epilepsy, status may be precipitated by:

drug withdrawal, missed doses, intercurrent illness, electrolyte and metabolic disturbances, or the progression of the underlying disease, and is commoner in symptomatic epilepsy.

Most episodes of status, however, develop de novo due to acute cerebral disturbances; e.g. cerebral infection, trauma, tumor, acute toxic or metabolic disturbances and febrile illness



- ✓ *Pre-hospital management :*

Convulsive seizure lasting longer than 5 minutes • Early pharmacological intervention improves outcome. Medications (single dose) are recommended for seizures lasting longer than 5 minutes

- ➢ *In-hospital management of convulsive status epilepticus*

0-5 Min

- **Stabilize patient (airway, breathing, circulation, disability)**
- **Time seizure from its onset, monitor vital signs**
- **Assess oxygenation, give oxygen via nasal cannula/mask, consider intubation if needed**
- **Initiate ECG monitoring**
- **CBC , Scr , Ca, Mg , NA , K, sugar and ABG/ VBG. Treat if abnormal**
- **Blood culture, if fever**
- **Attempt IV access an d collect electrolytes (Na, Ca & Mg), hematology, toxicology screen, (if appropriate, do anticonvulsant drug levels).**
- **Collect finger sticks blood glucose. If glucose < 60 mg/dl then administer 2 mL/kg of 25% dextrose water (D25W) via central line.**

Still seizing after 5 minutes? → No → Monitor, investigate

Yes ↓

5-10 min

- **1st line Management— Benzodiazepines, IV preferable**
- **Diazepam IV: 0.3 mg/kg IV (maximum 5 mg if < 5 yrs)**
- **No IV access: PR: 0.5 mg/kg (maximum 20 mg) (maximum 10 mg if ≥ 5 yrs)**
- **Midazolam* IV available: 0.1 mg/kg IV (maximum 5 mg)**
- **No IV access: IM: 0.2 mg/kg (maximum 10 mg) (given over 30 to 60 seconds) Intranasal: 0.2 mg/kg (maximum 5 mg/nare) Buccal: 0.5 mg/kg (maximum 10 mg)**

Still seizing after 5 minutes? → No → Monitor, investigate

Yes ↓

10-15 min

- **Repeat first-line medication once, 5 minutes after first dose is given.**
- **If ≥ 2 doses of first-line medications have been given (including pre-hospital medications), and the seizure persists for more than 5 minutes after the last dose of benzodiazepine,**

15-20 min

- **Second line medication,,Start with loading dose of Levetiracetam**
- **Levetiracetam IV: (40- 60 mg/kg) (maximum 3000 mg), given over 5 to 15 minutes , mixed in NS or D5W**

20-25 minutes

- ***Give a different second-line medication***
- **Phenytoin IV 20 mg/kg (maximum 1000 mg), given over 20 minutes, mixed in NS**
- **No need for Phenytoin IV maintenance dose**
- **Give maintenance dose for Levetiracetam only after 12 hours from LD.**

25-40 minutesas

- **Phenobarbital IV 15-20 mg/kg (maximum 1000 mg), given over 20 minutes, mixed in NS or D5W**

or

- **Repeating second-line therapy (repeat IV phenytoin 10 mg/kg)**

≥40 minutes

- **Refer to ICu to start general anesthetics**
- **Midazolam—0.2 mg/kg IV bolus followed by infusion 1 µg/kg/ min, increasing 1 µg/kg/min, every 5–10 minutes, till seizures stop, up to a maximum of 30 µg/kg/min,**
  - **tapering initiated after 24 hours of seizure control 1 µg/kg/min, every 3 hours Or High-dose**
- **Thiopental sodium: Induction: 3-5mg/kg bolus. Maintenance: 3-5mg/kg/hour, Over 24 hr.**
- **phenobarbitone: 5–10 mg/kg boluses every 30 minutes up to 120 mg/kg/24 hours, Maintenance up to 40 mg/kg/day**
- **Propofol loading dose of 1–2 mg/kg, followed by continuous infusion of 1–3 mg/kg/h, maximum of 5 mg/kg/h Or**
- **Topiramate: through orgastric/nasogastric tube (2–5 mg/kg enteral loading, increase by 5–10 mg/kg/day up to maximum of 25 mg/kg/day)**