

DRAFT
Mount Sinai Medical Center
STATUS EPILEPTICUS in ADULTS
TREATMENT PROTOCOL 2006

(This algorithm is meant as a guideline. Individual patient circumstances may supersede this algorithm.)

Time, minutes	Action
0-5	<p>Diagnose. Page Neurology consult (Beeper 2545) Consider toxicological (2nd Page), trauma (immobilization) and infection (isolation). Give O₂NRBFM; ABC's; Begin ECG monitoring; Obtain IV access; Draw blood for GEM3000, Chem-7, Magnesium, Calcium, Phosphate, CBC, LFTs, AED levels, ABG; toxicology screen (urine and blood). APAP, salicylates, ETOH, Head CT, Pregnancy Test.</p>
6-10	<p>Thiamine 100 mg IV; 50 ml of D₅₀ IV unless adequate glucose known. Lorazepam. Begin with 4 mg IV over 2 mins; if still seizing, repeat at 5 mins 4 mg IV over 2 mins (Maximum approximately 0.1 mg/kg). Monitor blood pressure during administration If no rapid IV access give midazolam 10 mg IM*.</p>
10-20	<p>1. Begin Fosphenytoin 20 phenytoin equivalents/kg IV at 150 mg/min, with BP and ECG monitoring.</p> <ul style="list-style-type: none"> • If seizures persist Fosphenytoin additional 10 PE/Kg IV at 150 mg/min <p>OR</p> <p>2. In patients with known seizure disorder (taking either depakote or phenobarbital at home) reload with the home medication as follows:</p> <ul style="list-style-type: none"> • IV valproate: 20 mg/kg over ~10 minutes. If still seizing, additional 20 mg/kg over ~5 mins. Or • IV Phenobarbital: 20 mg/kg IV at 50-100 mg/min.
20-60	<p>If seizures persist, consider intubation (Use neuro-protective medications)</p> <p>CIV midazolam: Load: 0.2 mg/kg; repeat 0.2-0.4 mg/kg boluses every 5 minutes until seizures stop, up to a maximum total loading dose of 2 mg/kg. Initial CIV rate: 0.1 mg/kg/hr. CIV dose range: 0.05 – 2 mg/kg/hr (up to 140 mg/hour for 70 kg person). Mix 50mg midazolam in 50ccs NS (1mg = 1cc)</p> <p>Other options: IV valproate: 40 mg/kg over ~10 minutes. If still seizing, additional 20 mg/kg over ~5 minutes. If still seizing, proceed to c IV midazolam or propofol. OR CIV propofol: Load: 1 mg/kg; repeat 1-2 mg/kg boluses every 3-5 minutes until seizures stop, up to maximum total loading dose of 10 mg/kg. Initial CIV rate: 2 mg/kg/h. CIV dose range: 1-15 mg/kg/hr. If still seizing, proceed to CIV midazolam or pentobarbital. OR IV Phenobarbital: 20 mg/kg IV at 50-100 mg/min. If still seizing, proceed to CIV midazolam, propofol, or pentobarbital.</p>
>60 minutes	<p>CIV Pentobarbital. Load: 5-10 mg/kg at up to 50 mg/min; repeat 5 mg/kg boluses until seizures stop. Initial CIV rate: 1 mg/kg/hr. CIV-dose range: 0.5-10 mg/kg/hr; traditionally titrated to cessation of motor activity. Consider continuous EEG monitoring ASAP if patient does not rapidly awaken, or if any CIV treatment is used.</p>

CIV = continuous intravenous infusion

ABC's = stabilize airway, breathing and circulation;

* The IV solution of diazepam can be given rectally if Diastat is not available

* The IV solution of midazolam can be given by any of these routes

Toxicity Related Seizures & Status Epilepticus

Almost any agent in overdose may cause a seizure indirectly if they cause hypoxia, hypotension, or electrolyte (including hypoglycemia) abnormalities.

In these entities, treatment with benzodiazepines while concomitantly correcting the underlying cause is of utmost importance (i.e. glucose).

Not advised to use phenytoin or valproate

Toxicological agents that cause seizures directly or status epilepticus.

1. INH
2. Tricyclics
3. Theophylline
4. Cocaine / Sympathomimetics
5. Alcohol withdrawal
6. Organophosphates

The initial treatment for the agents above is in controlling the seizure with benzodiazepines (Specific anticonvulsants would not work)

1. INH Toxicity

1. Benzodiazepines (Lorazepam)

2. Pyridoxine (vitamin B6) should be administered after a benzodiazepine

Dose 70 mg/kg (up to 5 gm, need 10 grams stocked in ED)

It is best if it is administered on a gram for gram basis with the dose of INH

Diazepam and pyridoxine are synergistic and therefore should be used in unison

Treatment algorithm: Lorazepam. Vitamin B6 (if INH suspected) pentobarbital if in status (quicker acting since Phenobarbital at 20 mg/kg would take 30 mins to administer)

If not in status Phenobarbital is acceptable

2. Tricyclic Antidepressants (TCAs) Toxicity

3. Theophylline

4. Cocaine/Sympathomimetics

5. Alcohol withdrawal seizure Propofol is known to work for GABA-ergic withdrawal as well

1. Lorazepam
2. Phenobarbital or propofol
3. Pentobarbital

6. Organophosphates

1. Valium
2. Pralidoxime (2-PAM)

Anticholinergic treat the seizure with toxicology algorithm

Physostigmine, start with 1-2 mg (0.1 mg per min) and titrate PRN to normal mental status