Clinical Policy: Critical Issues in Evaluation and Management of Adult Patients Presenting to the ED with Seizures (Non-Status Epilepticus)

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In patients with known seizure disorders, it is appropriate to resume either IV or PO route of administration of the home ASD *(Level C Recommendation).*
There is no recommendation that loading ASDs after noncompliant seizure (non-status epilepticus) is necessary, however available loading doses are supplied below if loading is clinically appropriate. An alternative option includes resuming home maintenance dose as prescribed.

Drug	Non-Status Epilepticus Loading Dose	Status Epilepticus Loading Dose*	Adverse Events	Seizure Recurrence rate (non-status epilepticus)	Notes
Carbamazepine *Tegretol, Equetro*	8 mg/kg PO (single oral load) using *oral suspension; max 1600 mg* [1]	Refractory SE: 8 mg/kg PO (use oral suspension); max 1600 mg	58% experienced: drowsiness (26%), nausea (23%), dizziness	Not Studied 93% achievement of therapeutic conc	PO tablet has slow/erratic absorption
Gabapentin *Neurontin, Gralise*	900 mg/d PO (300 mg TID) x 3 days [2]	Refractory SE: No load; start at 300 mg Q 8 hours	Somnolence, dizziness, ataxia and fatigue	No difference from slower load (only assessed 5 day period)	Adjunct for partial seizures
Lacosamide *Vimpat*	Loading dosage not studied; Maximum oral absorption 800 mg [3]	Refractory SE: 5-10 mg/kg IV over 5-10 min (max 500 mg)	Mild-mod dizziness, HA, back pain, somnolence, injection site pain	Not Studied	Adjunct for partial seizures; withdrawal seizures with abrupt discontinuation
Lamotrigine *Lamictal*	6.5 mg/kg single oral load in on LMG for >6 months w/o hx of intolerance and only off LMG <5 days [4]	Not recommended	Mild, transient nausea	Not Studied	Frequent and serious rashes; DO NOT load if hx of rash or patient not previously on LMG
Levetiracetam *Keppra*	1500 mg PO load Rapid IV loading up to 60 mg/kg well tolerated [5,6]	First Line: IV: 60 mg/kg (over 10 min); Max 4500 mg	Fatigue, dizziness, rare pain at injection site	No seizures within 24 hours of loading in study of oral load	
Phenytoin *Dilantin, Phenytek*	20 mg/kg divided in max 400 mg PO q 2 hours or 18 mg/kg IV (max rate 50 mg/min) [7,8,9]	Not recommended	IV faster to load but more serious ADE (low BP, bradyarrhythmias, cardiac arrest, extravasation)	No significant difference between PO and IV loading	Oral cheaper but takes >5 h to reach therapeutic levels; IV requires filter, infusion pump
Fosphenytoin *Cerebyx*	18 PE/kg max rate 150 PE/min [7,9]	First Line: IV: 20 PE/kg (rate up to 150 mg/min); Max 2000 mg	Fewer ADE compared to IV phenytoin load		
Valproate *Depacon*	IV: Up to 30 mg/kg IV (max rate 10 mg/kg/min) PO: (Depakote ER): 30 mg/kg [10,11, 12]	First Line: IV: 40 mg/kg (over 5-10 min); Max 3000 mg	Transient local irritation at injection site; GI discomfort orally	Not Studied	Oral Depakote loading not preferred due to intolerable GI side effects[13]
Topiramate *Topamax*	400-800 mg [14]	Refractory SE: 400-800 mg PO	Decreased sodium bicarbonate	Not Studied	Monitor for DDI
*for Status Epilepticus please refer to UCMC Status Epilepticus Guidelines					

Clinical Evidence:

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