



Status Epilepticus

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Status epilepticus

a condition resulting either from the

- failure of the mechanisms responsible for seizure termination
- from the initiation of mechanisms,

which lead to abnormally prolonged seizures (after time point **t1**).

which can have long-term consequences (after time point **t2**),

neuronal death

neuronal injury

alteration of neuronal networks

depending on the type and duration of seizures

pathomechanisms

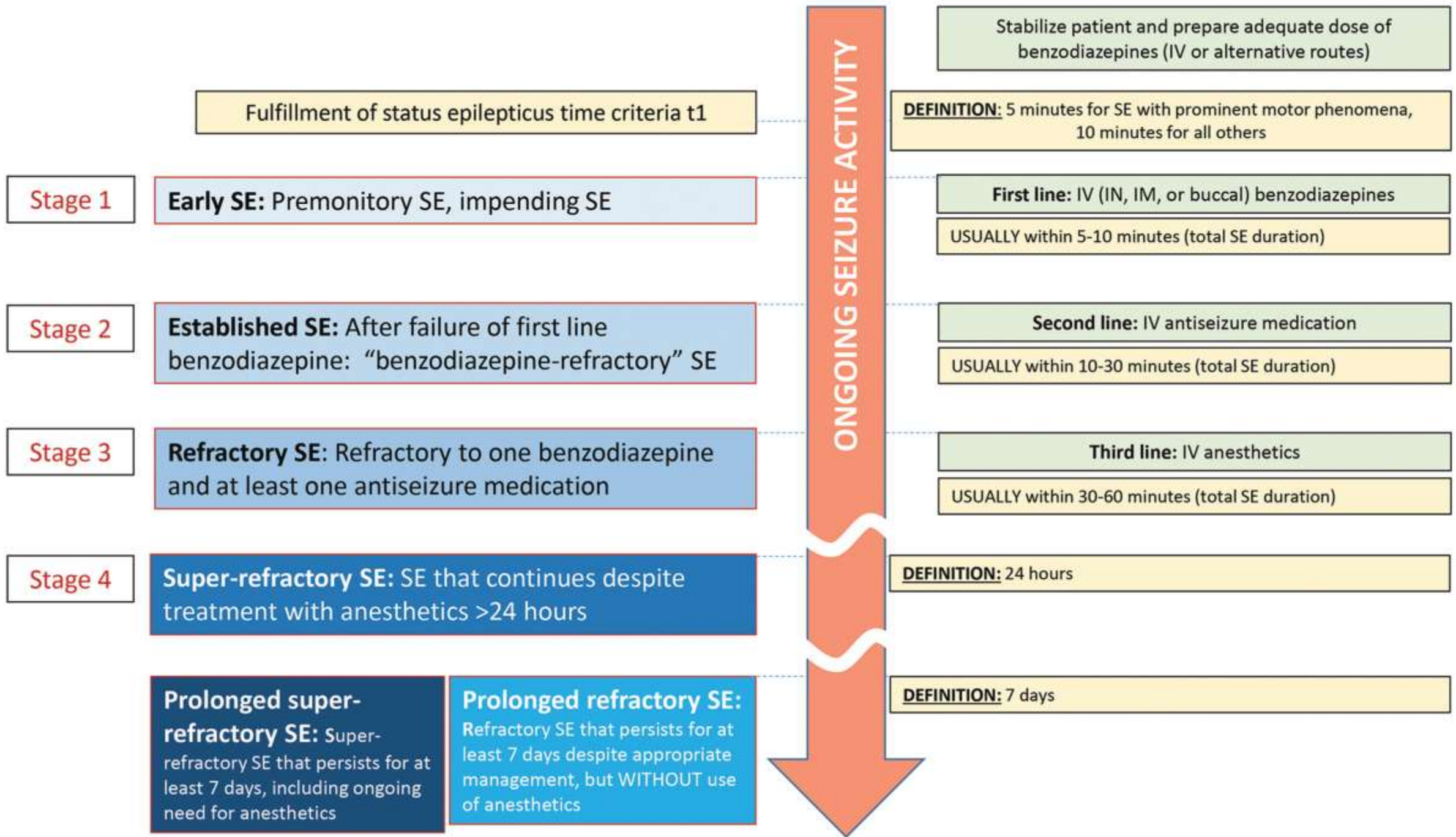
γ-aminobutyric acid-mediated (GABA-ergic)

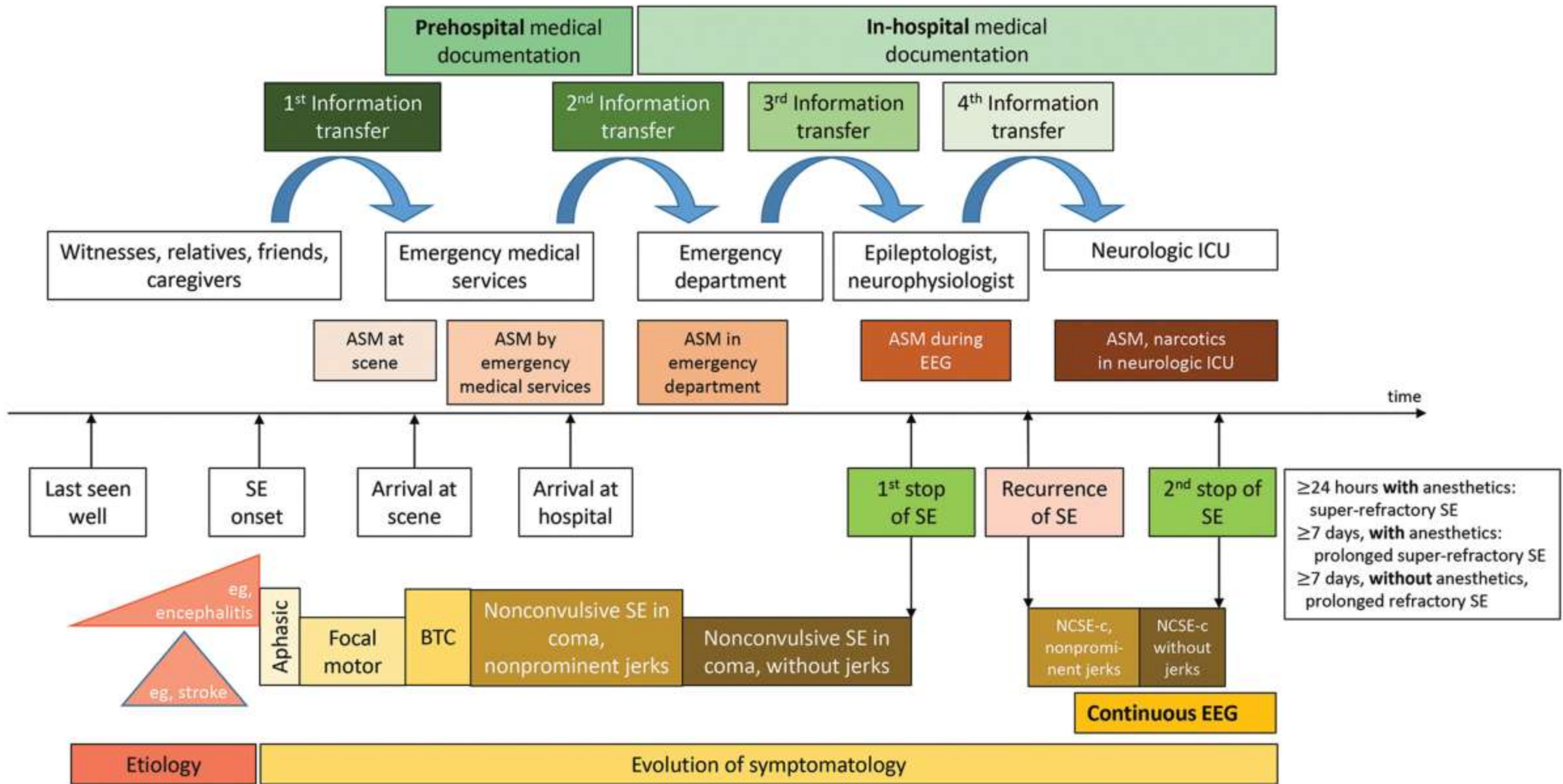
failure

glutamatergic hyperactivity

Type of status epilepticus	Time t1	Time t2
	Seizure activity does not stop spontaneously with a high probability, therefore, time t1 is the time at which emergency treatment of status epilepticus should be started	Seizure activity may cause long-term sequelae, therefore, time t2 is the time at which treatment should be successful to prevent long-term consequences
Bilateral tonic-clonic status epilepticus	5 minutes	30 minutes
Focal status epilepticus with and without impairment of consciousness, absences	10 minutes	60 minutes

^a Modified with permission from Trinka E, et al, Epilepsia.¹ © 2015 International League Against Epilepsy.





Classification of SE

SE **with** prominent motor phenomena SE **without** prominent motor phenomena, nonconvulsive SE

Tonic-clonic SE, convulsive SE Myoclonic Focal motor Tonic Hyperkinetic

Generalized convulsive	Focal onset evolving to bilateral convulsive SE	Unknown whether focal or generalized	With coma	Without coma	Repeated focal motor (Jacksonian)	Epilepsia partialis continua	Adversive status	Oculo-clonic	Ictal paresis, focal inhibitory
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SE **without** prominent motor phenomena, nonconvulsive SE

Nonconvulsive SE with coma, subtle SE	Nonconvulsive SE without coma								
	Generalized			Focal				Unknown whether focal or generalized	
	Typical absence status	Atypical absence status	Myoclonic absence status	Without impairment of consciousness		Aphasic	With impaired consciousness	Autonomic	
				Aura continua, with autonomic, sensory, visual, olfactory, gustatory, emotional/psychic/experiential, or auditory symptoms					

Time Line

**0-5 Minutes
Stabilization
Phase**

Interventions for emergency department, in-patient setting, or prehospital setting with trained paramedics

1. Stabilize patient (airway, breathing, circulation, disability - neurologic exam)
2. Time seizure from its onset, monitor vital signs
3. Assess oxygenation, give oxygen via nasal cannula/mask, consider intubation if respiratory assistance needed
4. Initiate ECG monitoring
5. Collect finger stick blood glucose. If glucose < 60 mg/dl then
Adults: 100 mg thiamine IV then 50 ml D50W IV
Children \geq 2 years: 2 ml/kg D25W IV Children < 2 years: 4 ml/kg D12.5W IV
6. Attempt IV access and collect electrolytes, hematology, toxicology screen, (if appropriate) anticonvulsant drug levels

YES

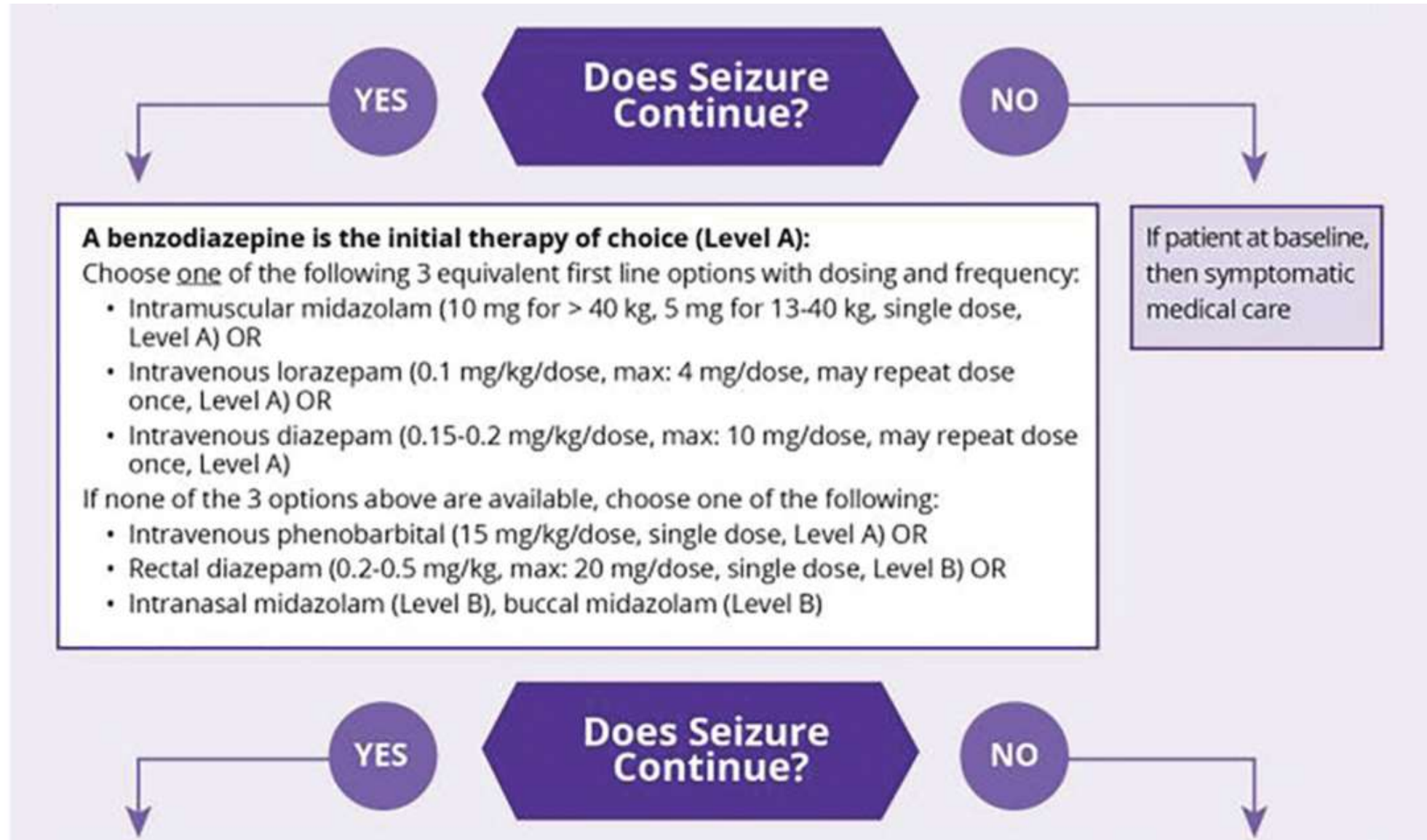
**Does Seizure
Continue?**

NO

**5-20 Minutes
Initial Therapy
Phase**

Berat badan 50 kg
(0,2 mgx50 kg=10 mg)

1 ampul diazepam (10 mg)
Dalam 10 cc NS
Bolus pelan 5 mg/menit

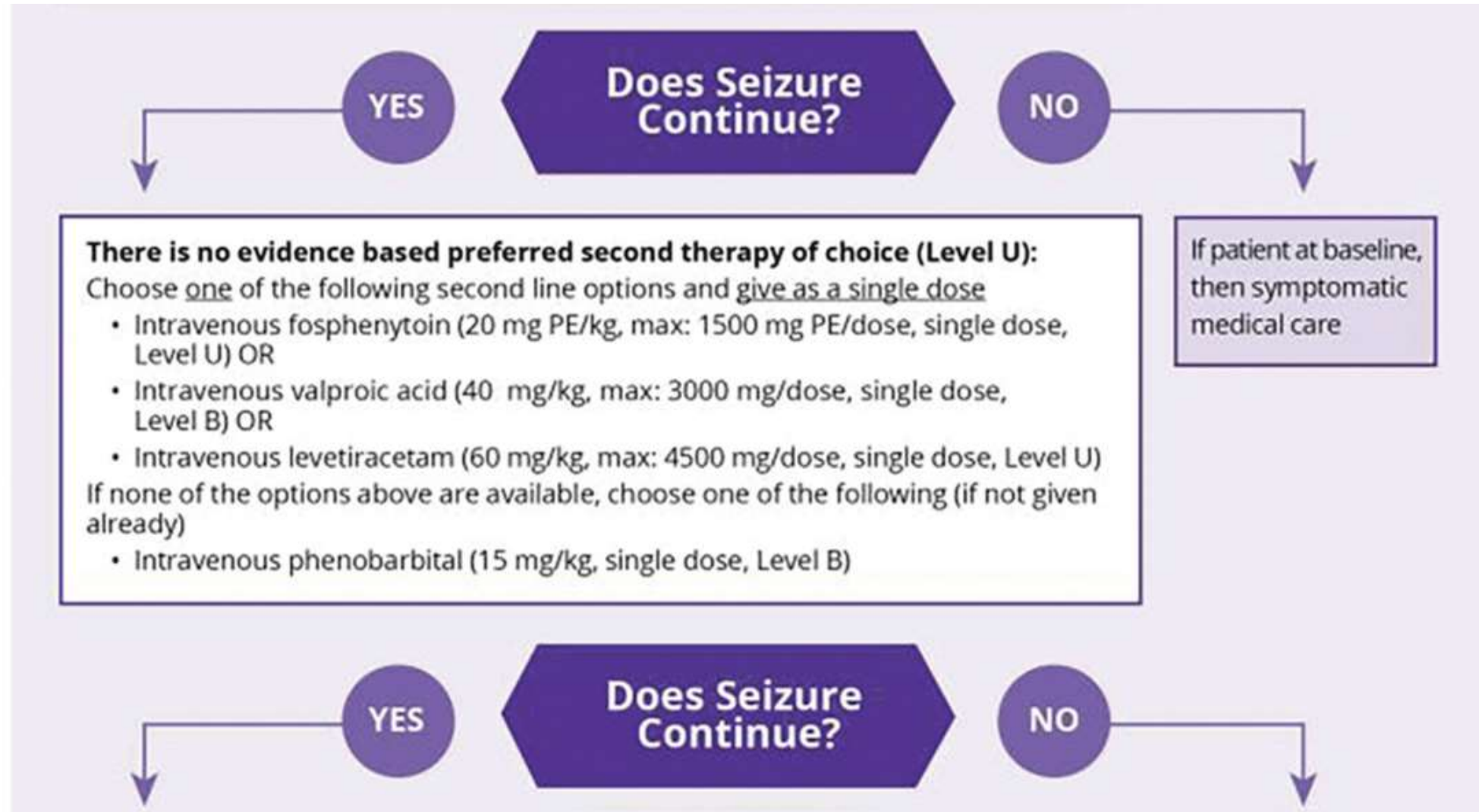


**20-40 Minutes
Second Therapy
Phase**

Fenitoin 15-18 mg/kg/
Berat badan 50 kg
(15 mgx50 kg=750 mg)
(18 mgx50 kg=900 mg)

1 ampul fenitoin (100 mg)
Dalam 10 cc NS
Bolus pelan 50 mg/menit

8-9 ampul



**40-60 Minutes
Third Therapy
Phase**



Disclaimer: This clinical algorithm/guideline is designed to assist clinicians by providing an analytic framework for evaluating and treating patients with status epilepticus. It is not intended to establish a community standard of care, replace a clinician's medical judgment, or establish a protocol for all patients. The clinical conditions contemplated by this algorithm/guideline will not fit or work with all patients. Approaches not covered in this algorithm/guideline may be appropriate.

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