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EPILEPSY

Epilepsy

- **Definition**

Intermittent stereotyped attacks of motor, sensory, behavioral or emotional disturbances resulting from excessive abnormal neuronal discharge.

- **Classification**

A. Partial

B. Generalized

Epilepsy

- **Etiology**

1. **Acute symptomatic**

- ❑ Fluid and electrolytes disturbances.
- ❑ Metabolic.
- ❑ Drug induced.
- ❑ Head injury.
- ❑ CNS infections.
- ❑ CVS.

Epilepsy

2. **Remote symptomatic**

- Head injury.
- Postcranial surgery.
- Brain tumors.
- Hypoxic ischemic encephalopathy.
- Neurodegenerative and demyelinating.

3. **Idiopathic**

Epilepsy

- **Differential diagnosis**

1. **Syncope.**
2. **Hysterical (pseudoseizure).**
3. **Others (sleep disorders, migraine, TIA, hypoglycemia)**

	Syncope	Seizures
Posture	Upright	Any posture
Pallor and sweating	Invariable	Uncommon
Onset	Gradual	Sudden/aura
Injury	Unusual	Not uncommon
Convulsive jerks	Not uncommon	Common
Incontinence	Rare	Common
Unconsciousness	Seconds	Minutes
Recovery	Rapid	Often slow
Post-ictal confusion	Rare	Common
Frequency	Infrequent	May be frequent

	Epileptic seizure	Pseudoseizure
Onset	Sudden	May be gradual
Retained consciousness	Very rare	Common
Cyanosis	Common	Unusual
Tongue biting and other injury	Common	Less common
Stereotyped attacks	Usual	Uncommon
Duration minutes	Seconds or minutes	Often many
Resistance to passive limb movement or eye opening	Unusual	Common
Prevention of hand falling on to face	Unusual	Common
Induced by suggestion	Rarely	Often
Post-ictal drowsiness or confusion	Usual	Often absent
Ictal EEG abnormality	Almost always	Almost never
Post-ictal EEG abnormality	Usually	Rarely

Pharmacological treatment of epilepsy

- ***General principles***

1. ***The diagnosis of seizures or epilepsy should be secure.***
2. ***An initiation or change in antiepileptic drug therapy needs a full and adequate discussion with the patient.***
3. ***The ultimate aim of treatment of epilepsy will be no seizures and no drugs.***

Pharmacological treatment of epilepsy

Starting therapy

- *No prophylactic treatment.*
- *When two or more unprovoked seizures have occurred within a short interval (6 months to 1 year), antiepileptic therapy is usually indicated.*
- *Monotherapy is usually effective, less expensive, more compliant and no drug-drug interactions.*

Pharmacological treatment of epilepsy

Before starting treatment

- Baseline haematological and biochemical investigations.
- Gradual titration of dose till seizure control without adverse effects.
- If monotherapy failed try to find other causes of failure e.g. non compliance
- If failed choose another monotherapy
- Then Add-on therapy.

Pharmacological treatment of epilepsy

- **The choice of drug**

Partial seizures	Generalized seizures
First line: ▪ LTG ▪ CBZ ▪ OXC	First line: ▪ VPA
Second line (adjunctive to first line) ▪ *PHT* ▪ *GBP* ▪ *VIG* ▪ *TIAG*	Second line (adjunctive to first line) ▪ *LTG* ▪ *TPM* ▪ *LEV* ▪ *PBP* ▪ *BENZ*

Status epilepticus

Definition:

SE is defined as continuous or repetitive seizure activity persisting for at least 30 minutes without recovery of consciousness in between attacks.

Classification:

- **Convulsive status epilepticus .**
- **Nonconvulsive status epilepticus (NCSE)**
  - ✓ Absence status
  - ✓ Complex partial status epilepticus

Aetiology:

- the most common cause is change in medication or non compliance or abrupt withdrawal of AEDs .
- CVS
- Drug/alcohol induced
- Infection
- Tumors
- Head trauma
- Metabolic disturbances

Complications of SE

A) Neurological

- Excitotoxicity
- Increased neuronal metabolic demand
- Mass effect
- Changes in blood flow

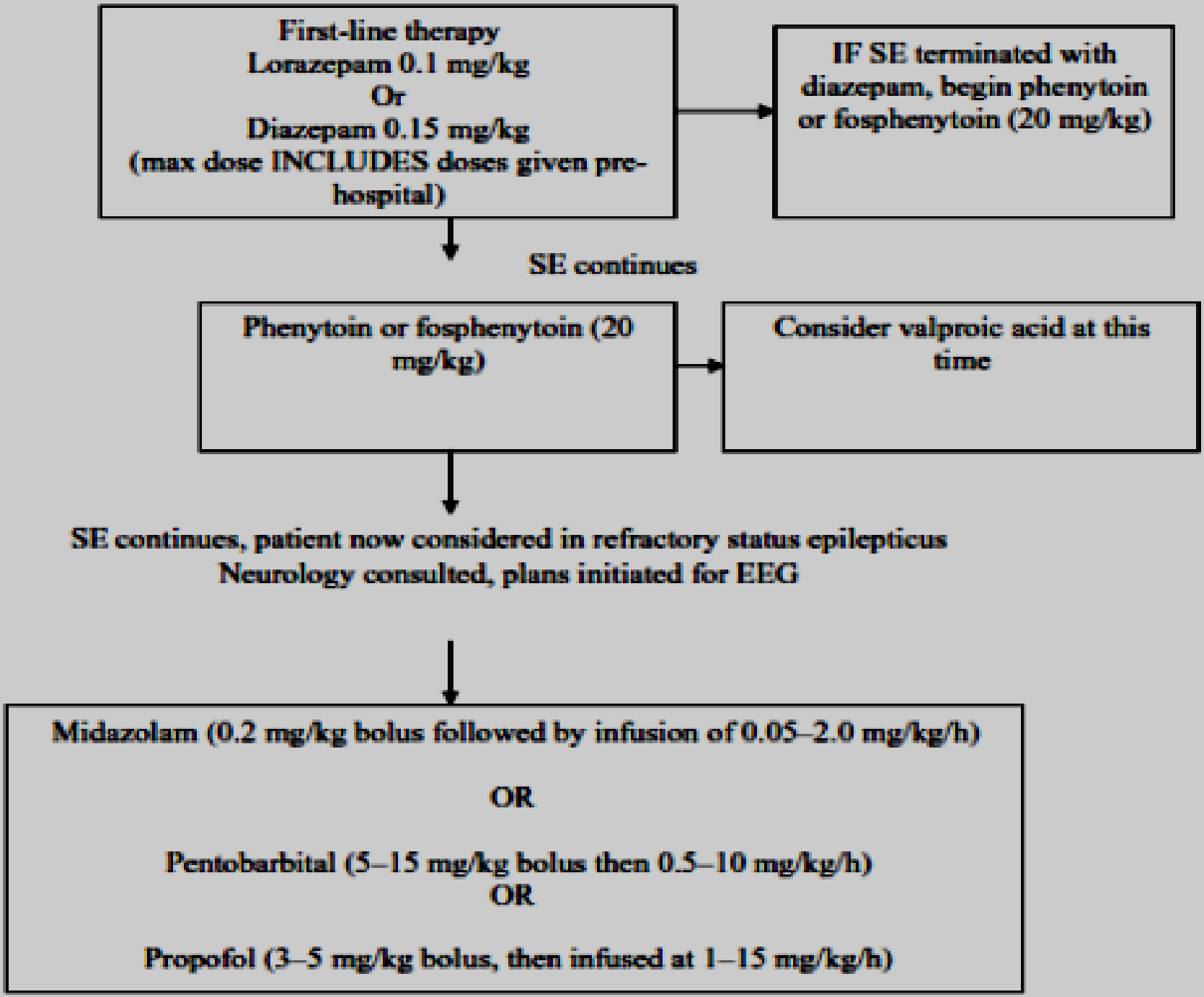
B) Systemic disturbances:

- Pulmonary edema
- High output cardiac failure
- Cardiac arrhythmias
- Aspiration pneumonia
- Fever
- Hypoxia
- Electrolyte imbalance
- Acute tubular necrosis
- Rhabdomyolosis

Management of SE

General measures

- Lateral positioning to prevent aspiration.
- Airway protection and O_2 administration.
- ECG monitoring.
- IV access with 3 blood samples (ABG, AED, toxicology screening).
- Thiamine administration 100 mg IV for malnourished and alcoholic patients.
- 50 ml dextrose 50% unless hypoglycemia excluded.
- Pyridoxine for neonates and patients taking isoniazid.
- Intravenous fluids if hypotension.


First-line therapy
Lorazepam 0.1 mg/kg
Or
Diazepam 0.15 mg/kg
(max dose INCLUDES doses given pre-hospital)
IF SE terminated with diazepam, begin phenytoin or fosphenytoin (20 mg/kg)
SE continues
Phenytoin or fosphenytoin (20 mg/kg)
Consider valproic acid at this time
SE continues, patient now considered in refractory status epilepticus
Neurology consulted, plans initiated for EEG
Midazolam (0.2 mg/kg bolus followed by infusion of 0.05–2.0 mg/kg/h)
OR
Pentobarbital (5–15 mg/kg bolus then 0.5–10 mg/kg/h)
OR
Propofol (3–5 mg/kg bolus, then infused at 1–15 mg/kg/h)

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Thank you