Ministry Of Health

General Directorate of Khoula Hospital

Neurology Department

Institution Name: Directorate general of khoula hospital

Document Title: Guidelines For Management of Status Epilepticus

Approval Process

	Name	Title	Institution	Date	Signature
Written by	Prof. Dr. khalil Al-Shaikhly	Senior Consultant Neurologist	DGKH		
Reviewed by	Reviwer's signiture in next page				
Validated by	Ms. Salama Al Hajri	Document controller	DGKH		
	Dr. Mohammed Al-Yahmadi	Director of QM&PSD	DGKH		
Approved by	Dr. Abdulla Al-Harthi	Director General	DGKH		

Location of original copy: document owner

Distribution to: quality management & patient safety directorate & shared file

Reviewers Signature:

Name	Title	Signature	Date
Dr. Ahmed Sameer	Senior Specialist		
Ph. Abdulla Al Saadi	Sr. pharmacist		
Dr. Mohammed Zahiruddin	Hospital Expert		

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Acronyms:

AED	Anti Epileptic drug
ASE	Absence status epilepticus
CSF	Cerebrospinal fluid
DRE	Drug-resistant epilepsy
EEG	Electroencephalography
SE	Status epilepticus
RSE	Refractory status epilepticus

Guidelines for Management of Status Epilepticus

1. Introduction

Status epilepticus (SE) is a medical neuro-emergency associated with significant morbidity and mortality. Although the great majority of status patients have an underlying brain condition causing their status seizure, such as brain tumor, brain infection, brain trauma, or stroke, it may occur in those with a history of epilepsy, usually precipitated by drug withdrawal, intercurrent illness or metabolic disturbance, or by the progression of the underlying disease. It is more common in symptomatic than in idiopathic epilepsy.

Between 10 and 30% of people who have status epilepticus die within 30 days. However, people with diagnosed epilepsy who have a status seizure also have an increased risk of death if their condition is not stabilized quickly, their medication and sleep regimen adapted and adhered to, and stress and other stimulant (seizure trigger) levels controlled. In the United States, about 40 cases of SE occur annually per 100,000 people.[2] This includes about 10–20% of all first seizures. About 5% of all adult patients attending an epilepsy clinic will have at least one episode of status in the course of their epilepsy.

2. Scope

This guideline is applied to all doctors working in Emergency Department, Neurology, Neurosurgery, Neurophysiology, Neuroradiology, and Pharmacists dealing with patients present with status epilepticus.

3. Purpose:

The aim of this guideline are:

3.1. To guide assessing and managing adults with status epilepticus.

3.2. To provide a standardized approach to the management of patients with status epilepticus in all involved Departments at Khoula hospital

4. Definitions

4.1. Status Epilepticus is one of the most common Neuro-Emergency that last more than 5 min of either continuous seizure activity or two or more sequential seizures without full recovery of consciousness between them.

5. Management of Status Epilepticus

5.1. Diagnostic assessment of patients with status epilepticus:

5.1.1. EEG and AEDs level should be indicated in patients who develop status epilepticus. EEG is an important tool to diagnose non-convulsive SE, ascertain seizure type and etiology of SE, rule out non-epileptic spells, as well as for immediate follow-up of patients treated for SE. see figure 1.

5.1.2. Neuroimaging should be indicated in patients with SE after stabilizing the patient, especially if the etiology is unknown.

5.1.3. Toxicology screen and tests for inborn errors of metabolism (in children) should be considered.

5.1.4. Blood culture and (CSF) analysis should be performed if there is clinical suspicion of CNS infection.

5.2. Treatment of patients with status epilepticus:

5.2.1. Respiratory and cardiac symptoms are the most commonly encountered treatment-emergent adverse events associated with intravenous anticonvulsant drug administration in adults with convulsive status epilepticus (Level A).

5.2.2. Adults with status epilepticus without established IV access, Intra muscular midazolam is established as more effective compared with IV lorazepam in adults with convulsive status epilepticus (level A). No significant difference in effectiveness has been demonstrated between lorazepam and diazepam in adults with status epilepticus (level A).

5.2.3. Adults with convulsive status epilepticus, intramuscular midazolam, intravenous lorazepam, intravenous diazepam and intravenous phenobarbital should be established as efficacious as initial therapy (Level A).

5.2.4. If seizure persist then fosphenytoin 20 mg PE/kg IV at a rate of <150 mg PE/min, if not available then Phenytoin: 20 mg/kg IV at a rate of less than 50mg/min.

5.2.5. In contrast to phenytoin, there were no fosphenytoin-related significant cardiac arrhythmias, change in heart rate, respiration or blood pressure. In addition, it can be given IV within 7 min. unlike phenytoin, phenobarbital or valproate were it should be given slowly within 20 -30 min.

5.2.6. If seizure persist then phenobarbital IV 20 mg/kg at a rate of less than 50-75 mg/min., Monitor for respiratory depression.

5.2.7. If seizure persist then admit to ICU,BP, ECG, EEG, ABG, renal profile, administer midazolam 0.2 mg/kg iv as bolus then 0.05-0.5 mg/kg/hour infusion, or propofol 1-2 mg/kg/hour infusion ,titrate till seizure free state.

5.2.8. patient with SE and having low blood pressure (hypotension) is in stage 2 status epilepticus which carries high mortality, in this case valproate infusion is the drug of choice as it does not lower the BP like phenytoin or phenobarbitone does.

5.3. Maintenance of antiepileptic drug treatment following status epilepticus

5.3.1. AEDs should be maintained in sufficient doses to maintain therapeutic concentration.

5.3.2. Patient exposed to prolonged use of Phenobarbital or Pentobarbital, there is increased risk of withdrawal seizures and precipitation of refractory status epileptics, and hence, their levels should be carefully monitored and they should be weaned off very slowly.

5.3.3. The summary of the management of status epilepticus **see appendix 1.**

6. Responsibilities

6.1.Head of Neurology shall:

6.1.1. Ensure all doctors are aware about these guidelines

6.1.2. Ensure all staff are adhering to these guidelines

6.2.Head of Pharmacy:

6.2.1. Ensure all staff are adhering to these guidelines

6.2.2. Ensure all staff are Checking prescription before dispensing

7. Document History and Version Control

Document History and Version Control			
Version	**Description of Amendment**	**Author**	**Review Date**
01	Initial Release		
02			
03			
04			
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8. Attachments:

8.1. Appendix

9. References:

Title of book/ journal/ articles/ Website	Author	Year of publication	Page
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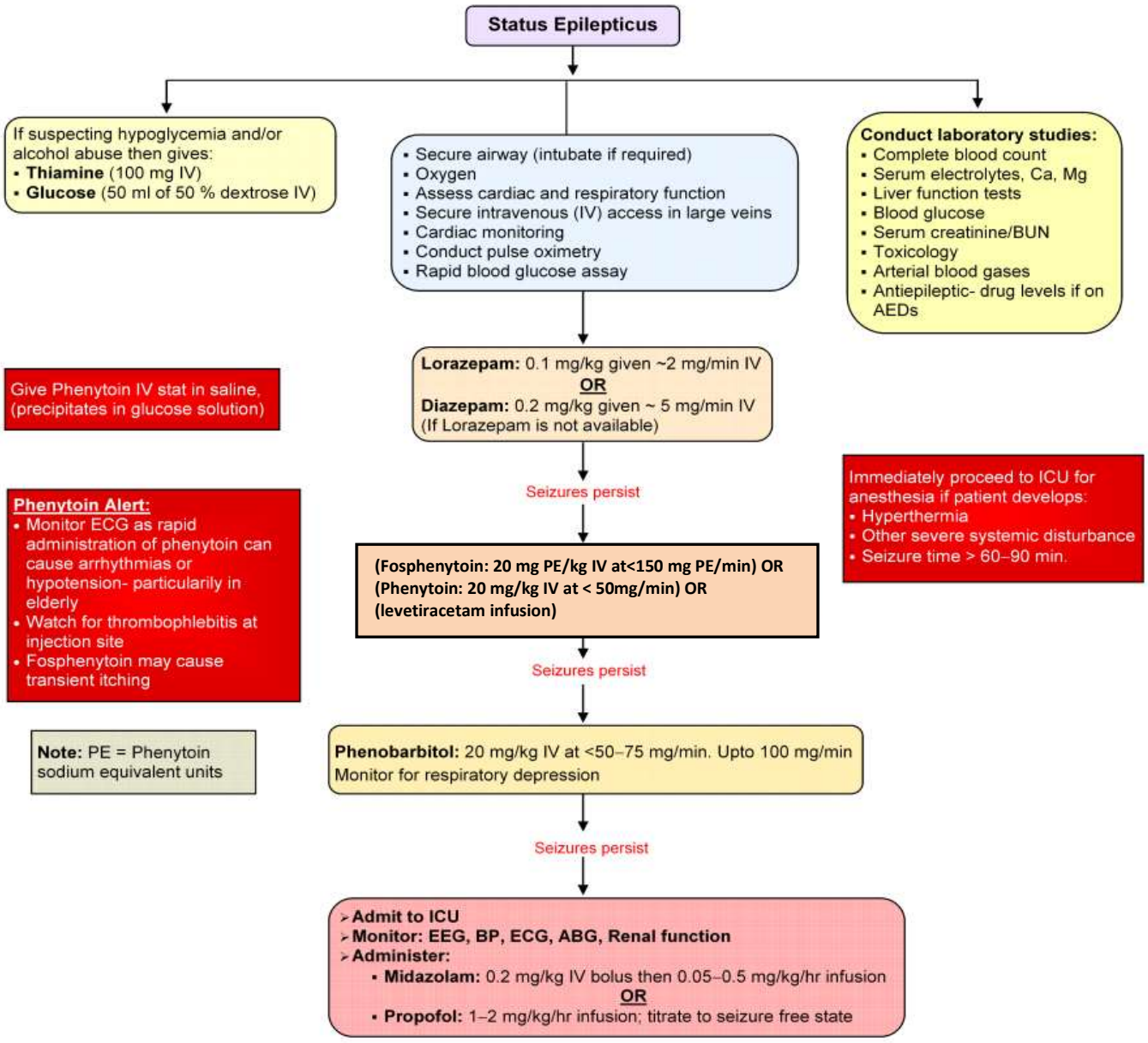
Appendix 1


Status Epilepticus
If suspecting hypoglycemia and/or alcohol abuse then gives:
• Thiamine (100 mg IV)
• Glucose (50 ml of 50 % dextrose IV)
• Secure airway (intubate if required)
• Oxygen
• Assess cardiac and respiratory function
• Secure intravenous (IV) access in large veins
• Cardiac monitoring
• Conduct pulse oximetry
• Rapid blood glucose assay
Conduct laboratory studies:
• Complete blood count
• Serum electrolytes, Ca, Mg
• Liver function tests
• Blood glucose
• Serum creatinine/BUN
• Toxicology
• Arterial blood gases
• Antiepileptic- drug levels if on AEDs
Lorazepam: 0.1 mg/kg given ~2 mg/min IV
OR
Diazepam: 0.2 mg/kg given ~ 5 mg/min IV
(If Lorazepam is not available)
Give Phenytoin IV stat in saline, (precipitates in glucose solution)
Seizures persist
Immediately proceed to ICU for anesthesia if patient develops:
• Hyperthermia
• Other severe systemic disturbance
• Seizure time > 60–90 min.
Phenytoin Alert:
• Monitor ECG as rapid administration of phenytoin can cause arrhythmias or hypotension- particularly in elderly
• Watch for thrombophlebitis at injection site
• Fosphenytoin may cause transient itching
(Fosphenytoin: 20 mg PE/kg IV at<150 mg PE/min) OR
(Phenytoin: 20 mg/kg IV at < 50mg/min) OR
(levetiracetam infusion)
Seizures persist
Note: PE = Phenytoin sodium equivalent units
Phenobarbitol: 20 mg/kg IV at <50–75 mg/min. Upto 100 mg/min
Monitor for respiratory depression
Seizures persist
➢ Admit to ICU
➢ Monitor: EEG, BP, ECG, ABG, Renal function
➢ Administer:
• Midazolam: 0.2 mg/kg IV bolus then 0.05–0.5 mg/kg/hr infusion
OR
• Propofol: 1–2 mg/kg/hr infusion; titrate to seizure free state