October/ 2019

Department of Health Research
Ministry of Health and Family Welfare, Government of India

INDIAN COUNCIL OF MEDICAL RESEARCH
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Standard Treatment Workflow (STW) for the Management of

EPILEPSY

ICD 10 - G40

CLINICAL FEATURES

Episodic, few secs-mins	Abnormal jerky movements	Loss of consciousness/ awareness	Blank staring
Sudden drops/ falls, brief jerks	With or without urine/ stool incontinence, tongue bite, drooling	Bizzare activity out of context	Any other episode lasting for few mins (usually<5 mins)

Episodes could be single with high risk of recurrence. Prolonged motor convulsion of > 5 mins with loss of consciousness - **STATUS EPILEPTICUS** (SE) - **MEDICAL EMERGENCY**

PRIMARY HEALTH CENTRE (MEDICAL OFFICER)

- Clinical diagnosis of epilepsy: detailed history from an eyewitness
- Differentiate between provoked seizures and epilepsy (provoked due to fever, acute CNS insult, antibiotics, and metabolic causes)
- **Laboratory investigations:** CBC, liver function tests, routine biochemistry, hemogram, lipd profile, vit D levels, TFT (whichever feasible)
- **Initiation of treatment:**
  - Treat the patient if patient has epilepsy (2 or more episodes of unprovoked seizures)
  - Treat a single seizure if risk of recurrence is high as in patients with focal seizures,mentally retarded, neurological deficits having family history of seizures abnormalEEG, neuroimaging
  - Anti Epileptic Drug (AED broad spectrum, low dose, start low go slow, except status epilepticus)
  - Emergency medical care of status epilepticus
- **Treatment counselling:** side effects/toxicities of drugs, red flags, importance of adherence, maintaining treatment diary
- **Advice on prevention of seizures:** regular medication, sleep 7-8 hrs, avoid excess TV/mobile/ photic stimulation, regular diet, lifestyle choices(avoid alcohol)
- Evaluate any possibility of superimposed non-epileptic seizure
- Training of MLP/ANM/ASHA on epilepsy
- For excessive alcohol use, refer to ANM/MLP where psychosocial interventions are carried out for substance use disorders
- Follow up visits for treatment monitoring & difficult patients under neurologist at STC centre
- Basic management of co-morbidities (behaviour, cognition, reproductive health, bone health)
- Alert to signs of abuse and neglect
- Maintain upward referrals with paediatrician/physician at DH

REASONS FOR REFERRAL

(centres with specialists like paediatrician, neurologist)

- Redflag Signs
- Progressive problems, rapid appearance of new symptoms
- Recent injury
- Symptoms appearing after alcohol binge
- Status epilepticus after stabilization
- Non response to adequate dose and duration of medication
- Serious side effects
- Neuroimaging

RED FLAG SIGNS

- o Fever
- o Headache
- o Vomiting
- o Altered Sensorium
- o Severe Giddiness
- o Loss of function of body

DISTRICT HOSPITALS

- Careful evaluation of all referral patients, provide specialized management for patients and refer back to PHC for follow up of management
- Maintain communication, ongoing clinical support and supervision of MOs at PHC
- **Laboratory investigation**
  - CBC, liver function tests, antiepileptic drug levels, routine biochemistry, hemogram, lipid profile, vit D levels, TFT, CT brain (when necesary)
- Monitor side effects of AED
- Clinical Psychologist: counselling health services for persons with epilepsy or upon referral from PHC/UPHC

AED– BROAD SPECTRUM (GENERALIZED SEIZURES)	DOSE (MAINTENANCE: MG/D)	ADVERSE EFFECTS
Sodium Valproate (avoid in women of child bearing age unless non responsive to other drugs)	Starting dose :200mg TDS Maintenance Dose: 600-2400	Anorexia, wt gain, nausea, vomiting, tremors, hair loss, PCOS, thrombocytopenia
Lamotrigine	Starting dose: 25mg HS (Lower dose with VPA) Maintenance Dose: 100-300	Sedation, ataxia, dizziness, skin rash, SJS (lower risk with slow titration)
Levetiracetam	Starting dose: 250mg BD Maintenance Dose: 1000-3000	Somnolence, dizziness, cognitive slowing, psychosis
Topiramate	Starting dose: 25mg OD Maintenance Dose: 100-400	Sedation, somnolence, cognitive problems, weight loss, word finding difficulty, renal stones, seizure worsening
AED (focal seizures)		
Carbamazepine	Starting dose: 100mg BD Maintenance dose: 400-1200	Sedation, dizziness, ataxia, skin rash, SJS, hyponatremia, seizure worsening in some situations
Oxcarbazepine	Starting dose: 150mg BD Maintenance dose: 600 to 1800	Sedation, dizziness, ataxia, headache, hyponateremia, skin rash
Phenobarbitone Can be used for generalized also	Starting dose: 30mg HS Maintenance dose: 60-180	Sedation, ataxia, depression, memory problems, hyperactivity in children, skin rash
Phenytoin	Starting dose: 200mg HS Maintenance dose:200-400	Ataxia, sedation, gum hyperplasia, coarsening of facial features, hirsutism, memory problems, osteomalacia & bone loss, skin rash

Folic Acid 5 mg/day to be added along with AEDs in all women of child bearing age. Polytherapy and valproate to be avoided in women with epilepsy

IMPENDING SE — **ESTABLISHED SE** — **REFRACTORY SE**

5 MIN — **30 MIN** — **60 MIN 2 IV drugs fail (Benzo + IV AED)**

FIRST ABCS TO BE DONE FROM WHEN YOU SEE PATIENT SIMULTANEOUSLY WITH MEDICATION

Out of Hospital/home : Buccal/Intranasal IMDZ with acute repititive seizures/status (0.3-0.5 mg/kg)

EMERGENCY ROOM

IV Lorazepam up to 0.1 mg/kg @ 2mg/min
OR
IV Midazolam 0.1-0.2 mg/kg bolus or 0.05-0.5 mg/kg/hr in CIV
OR
IV Diazepam upto 0.25-0.4 mg/kg over 2-3 min

- Phenytoin @50 mg/min 20 mg/kg repeat plus 10 mg/kg if seizures do not stop in 15-20 min
- If seizures not controlled or contra indiction (CI) to PHT Intravenous Valproate 25-40 mg/kg @3-6 mg/kg/min
- If CI to above two; Phenobarbitone 20 mg/kg IV @ less than 5-60 mg/min but be prepared to Intubate and ventilate

Levetiracetam 20-30 mg/kg IV at 5 mg/kg/min (max 3g) or
Levetiracetam 1500-3000 mg via NGT or
Lacosamide 200-400 mg IV at 40-80 mg/min
Topiramate 150-800 mg bid via NGT

ICU
IV Midazolam loading 0.2 mg/kg
OR CIV 0.05-0.5 mg/kg/hr
(can go up to 2 mg/kg/hr)
Taper gradually after seizure stops
(preferably as evidenced by EEG)

Thiopental 5-7 mg/kg IV bolus
further 50 mg until seizures controlled
3-5 mg/kg/hr for only 48 hours

OR Propofol IV loading 2-5 mg/kg
CIV 1-15 MG/KG/HR
OR Pentobarbital IV upto 10 mg/kg
@ <0.2-0.4 mg/kg/min CIV 0.5-2 mg/kg/h
OR Ketamine bolus 1.5 mg/kg
CIV 0.01-0.05 mg/kg/h max 10mg/kg/hr * to be EEG Monitoring

Super refractory
> 24hr no control

Airway, blood pressure, temperature, intravenous access, electrocardiography, CBC, glucose, electrolytes, AED levels, ABG, oximetry, tox screen, central line
If alcoholic- thiamine & glucose, if diabetic GLUCOTEST/blood sugar & glucose IV. MUST INFORM CONSULTANT ON CALL

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES