Pediatric Status Epilepticus(≥1 month old) Pathway

Pathway Purpose: To provide guidance for medication choice, timing, and dose for children ≥1 month in status epilepticus

Inclusion Criteria:
- Age ≥ 1 month
- Admitted to acute care/PICU
- > 5 min of clinical/EEG seizures OR multiple seizures w/o return to baseline

Exclusion Criteria:
- Infantile spasms w/ spasm clusters
- Patients admitted for vEEG monitoring
- NICU patients (even if ≥1m/o)
- Patients with allergies/contraindications to listed medications
- Patients with diagnosis or suspicion of psychogenic non-epileptic seizures (PNES)
- Patients who have been treated for SE in the preceding 24h

Consider using Status Epilepticus Pathway Order Set

Neurology consult

*CALL RRT at any time if: unable to obtain IV access, unable to obtain appropriate AEDs, respiratory compromise, or hemodynamic compromise

0-5 min

Immediate Non-AED (Anti-Epileptic Drug) Management
- Non-invasive airway protection (head/jaw repositioning)
- Place full cardiac, respiratory monitors and cycle blood pressure q1 minute
- Administer O2, suction, support respiration as necessary
- Establish IV access
- POC glucose, treat hypoglycemia
- STAT electrolyte panel PRN (treat ↓ calcium, ↓ sodium, ↓ glucose), AED levels
- Acetaminophen PR or IV if febrile

Emergent Initial AED Therapy*

**Order 2 doses STAT: give first dose and simultaneously prepare 2nd dose*

IV access (preferred if available):
- Lorazepam 0.1 mg/kg IV (max 4mg)

No IV access:
- Preferred: Midazolam (IM or IN) 0.2 mg/kg (max 10mg)

ORDER 2nd LINE AED STAT BEFORE AWAITING REPSONSE. CONTACT PHARMACY CODE PHONE (650-721-9845) TO COORDINATE DISPENSING OR OBTAIN FROM OMNICELL IF AVAILABLE ON UNIT

Reassess after 2-3 min Still seizing?

No

Yes

6-10 min

Repeat 1st Line AED: Repeat benzodiazepine dose as above (use IV if available)

CALL NEUROLOGY AFTER SECOND DOSE GIVEN

Reassess after 2-3 min Still seizing?

No

Yes

10-20 min

Give 2nd line AED
- Levetiracetam 60mg/kg IV (max 4500mg) infused over 10 minutes

ORDER 3RD LINE AED STAT BEFORE AWAITING RESPONSE. CONTACT PHARMACY CODE PHONE (650-721-9845) TO COORDINATE DISPENSING

Reassess 5-10 min after infusion begins. Still seizing?

No

Yes

CALL RRT (if not already done*) IF APPROACHING 20 MIN OF SEIZURES

20-40 min

Give 3rd Line AED (for Refractory Status Epilepticus)
- Fosphenytoin 20mg PE/kg IV (max dose 1500mg) over 7 minutes (if dose >1000mg, infuse over 10 minutes – max 150mg/min)
  - If patient already on phenytoin: fosphenytoin 10mg PE/kg IV over 5min
- Valproate 40 mg/kg (max 3000 mg) over 10 minutes
  - use with caution if age < 2yr; do not use in liver/metabolic disease
- Phenobarbital 20 mg/kg IV over 10 minutes (if dose >1000mg, infuse @ 100mg/min)

Reassess 10min after infusion beings. Still seizing?

No

Yes

40-60 min

If seizures persist after 3rd AED:
- Transfer to PICU if not already done
- Proceed to Coma Induction Pathway (available in PICU)

To discharge from pathway:
- Examine for post-ictal state vs signs of ongoing subtle seizures (stiff vs limp, eye deviation, response to noxious stimuli, twitching/jerking)
- Check AED levels after seizures stop
- Discuss with neurology diagnostics, imaging, and maintenance medications

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Associated Orderset: Status Epilepticus Pathway
Feedback? Associated Policies: n/a

Definitions: *Age criteria < 1 or ≥1 month are used to distinguish neonates from older infants and children. Please refer to specific pathway for patient age.*

Status epilepticus (SE): ≥ 5 minutes of continuous clinical and/or EEG seizures OR recurrent seizures without return to baseline between seizures

Refractory SE: SE unresponsive to 2 medications.

Pathophysiology:

- Can be convulsive or non-convulsive; convulsive SE is the most common neurologic emergency in childhood
- Failure of the normal mechanisms that limit the spread and recurrence of isolated seizures

Outcomes:

- Mortality is between 0-16%, with etiology being most predictive of outcomes

DDx for Etiology of SE:

Etiology should be diagnosed/treated ASAP

Common:

- Sub-therapeutic AEDs
- Febrile seizures
- Electrolyte abnormalities
- Intoxication
- Trauma

Also consider:

- CNS hemorrhage/ischemia
- Sinus venous thrombosis
- CNS infection
- Autoimmune/post-infectious pathology
- Metabolic disease
- Hypertensive crisis

Diagnostic evaluation (as indicated):

Laboratory studies: chemistries, LFTs, tox screen (serum and/or urine), metabolic screen, blood and urine cultures, CRP, autoimmune serologies, lumbar puncture

Neuroimaging: CT, MRI, neurovascular
**Obtain urgently if CNS hemorrhage, trauma, stroke is suspected*

References:

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3. Brophy GM, et al. Neurocrit Care. 2012 Aug;17(1):3-23
4. Raspall-Chaure M, et al. Lancet Neurol. 2006 Sep;5(9):769-79
5. Glauser T. Epilepsy Curr. 2016. Jan-Feb: 16(1):48-61
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7. Kapur J. N Engl J Med. 2019 Nov;381(22):2103-2113

Family Education:

- Seizure precautions (see below)
- Seizure rescue (Diastat/Nayzilam/Valtoco) administration

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