5/1/06

ADVOCATE HOPE CHILDREN'S HOSPITAL

STATUS EPILEPTICUS

Step 1: Stabilize the Patient

- Ensure patient's airway: Oral airway available, turn head to one side and keep limbs of opposite side free for possible lateral prone position if vomiting or not handling secretions.
- Monitoring: HR, RR, SaO_2, BP, cardiac rhythm, and body temperature. Provide oxygen by nasal cannula or facemask.
- Establish IV access: IV or IO
- Use rectal route as an option to administer: Benzodiazepines, valproic acid
- Consider elective intubation if the patient develops neurogenic respiratory depression with hypoventilation or significant distress/hypoxemia secondary to aspiration, in the event of raised ICP or hypothermia.

Step 2: Control of Seizure Activity

- Initial drug therapy:
  - Lorazepam 0.05-0.1 mg/kg IV/IO. Can repeat after 5 minutes for a total of 3 doses. Can consider initial rectal administration at same doses as IV administration or
  - Diazepam 0.2-0.3 mg/kg IV/IO
    0.5 mg/kg PR if no IV/IO - or
  - Midazolam - useful as first line therapy when no IV/IO access can be given. IM, nasal, rectal oral: 0.1 mg/kg IM
    0.4 mg/kg nasal
    0.5 mg/kg oral

- Concomitant with benzodiazepine infuse:
  - Fosphenytoin 20 mg/kg, IM or IV, can be given IM if no IV, and can be given rapidly → consider if no IV/IO access or if patient is in stage II (decompensated) of status epilepticus.
  - Phenytoin 20 mg/kg (IV) in 0.9% NaC1 solution at a rate not faster than 1 mg/kg/minute while monitoring ECG and BP.
  - Phenobarbital (IV) 20 mg/kg in newborns, patients with cardiac conduction abnormalities, failed Phenytoin therapy.

- Immediate diagnostic investigations:
  - CBC/differential
  - Glucose → one touch confirmed by serum level

- Electrolytes (serum), calcium, magnesium
- Bun & creatinine
- Toxicology screen
- Anticonvulsant levels if indicated
- UA and appropriate cultures if indicated
- LP searching for infections if necessary. It should be deferred until seizures have ceased and the patient is hemodynamically stable.
- CT scan: if considered, it should be done as soon as possible if intracranial bleed or increased ICP is suspected, or it should be deferred until status is controlled and a normal respiratory pattern is established. If there are no genuine respiratory indications, a child should not be intubated for transfer for a CT of the head.

Step 3: Refractory Status

- Admit to PICU
- Endotracheal intubation might be required.
- Continuous monitoring of vital functions, low threshold for intubation to ensure airway protection and adequate gas exchange.
- Drugs

    - If patient received 20 mg/kg of Phenytoin, infuse 10 mg/kg IV more, if no response, infuse Phenobarbital 20 mg/kg rate faster than 100 mg/minutes.
    - If patient received Phenobarbital 20 mg/kg initially, consider repeating 5 mg/kg IV x 1. If patient doesn't respond and continues to seize, administer Midazolam 200 mcg/kg bolus followed by a continuous infusion starting at 0.75 mcg/kg/minute and increasing as necessary up to 11 mcg/kg/minute.

    Other options to consider if status still refractory:

    - Pentobarbital coma: 10 mg/kg IV loading dose given slowly over 1-2 hours, monitoring BP closely. Then start maintenance infusion at 1 mg/kg/hour, and increase to 2-3 mg/kg/hour to attain burst suppression on EEG.
    - Propofol continuous infusion 50-100 mcg/kg/minute
    - Ketamine continuous infusion, starting at 1 mg/kg/hour
    - General anesthesia: Halothane, Isoflurane

- Addendum

For treatment of tonic, myoclonic and atypical absence status epilepticus → IV benzodiazepines followed by rectal/NG tube valproate. Loading dose 20 mg/kg per rectum/NG tube.