

## **Emergency management of the convulsing child**

- **Airway, high flow oxygen, glucose**
- **If there is vascular access, give LORAZEPAM 0.1mg/kg**
- **If there is no vascular access, give PR DIAZEPAM 0.5mg/kg**
  - **Or... Buccal MIDAZOLAM 0.5mg/kg**

**...wait 10 minutes, and give more Lorazepam if there is not benefit**

- **Then: give PARALDEHYDE 0.4mg/kg PR**
- **Then: give PHENYTOIN 0.18mg/kg**
- **Then: perform an RSI with THIOPENTONE 4mg/kg**

### **what the hell is paraldehyde?**

- Cyclic trimer of acetaldehyde molecules
- CNS depressant, hypnotic sedative antiepileptic
- Half-life is roughly 8 hrs in neonates
- Mechanism of action is very similar to the barbiturates: increase the duration of the GABA-chloride-channel opening
- 90% is excreted in the lungs, as it is metabolized into acetaldehyde, then acetate, and then CO<sub>2</sub> and water.
- When it is not acting as a sedative, it is an industrial solvent. It can dissolve a plastic syringe in about 15 minutes.
- It is highly flammable
- It can cause rectal irritation
- It tastes like burning, and needs to be mixed with milk.

### **The drugs:**

- **LORAZEPAM**
  - **Less respiratory depression than diazepam; half life 12-24 hrs**
  - **Poor rectal absorption**
- **DIAZEPAM**
  - **Action lasts only 1 hr**
  - **Fast acting when given PR**
- **MIDAZOLAM**
  - **Short acting**
  - **BUCCAL ADMINISTRATION: squirt it into the area between the lower bottom lip and the gum margin**
  - **Buccal midaz is twice as effective as rectal diazepam**
- **PHENYTOIN**
  - **Measure the levels 60-90 minutes after the infusion has finished**
  - **Monitor the ECG**
  - **Peak action is within 1 hr**

## More drugs:

- **FOSPHENYTOIN**
  - Pro-drug of Phenytoin
  - Can be administered more rapidly: Phenytoin uses propylene glycol as a solvent, and so needs to be administered very slowly
  - There are fewer cardiac side effects because there is no propylene glycol
  - 75mg of this is equivalent to 50mg of phenytoin
- **THIOPENTONE**
  - 4-8mg/Kg
  - NOT an effective long term anticonvulsant

## General management

- Normoglycaemia is the key
- Normo-natremia is also the key
- Normothermia is a good idea as well
- **RESTRICT FLUIDS: 60% of maintenance.**
- Aspirate the stomach contents, before it ends up in the lungs
- If increased intracranial pressure is present, you will want to be dealing with it.

## The child with a systemic hypertensive crisis

- Hypertension is rare in children:
  - Dysplastic kidneys
  - Obstructive nephropathy
  - Glomerulonephritis
  - Coarctation of the aorta

### MEASURING A CHILD'S BLOOD PRESSURE IS A PAIN IN THE ARSE

- Use the biggest cuff that fits comfortably on the upper arm
- Systolic is more accurate
- Diastolic is frequently misleading – you might hear the Korotkoff sound all the way down to zero.
- The measured value needs to be compared against the normal age ranges.
- Aim to reduce the blood pressure to 95% percentile over the next 24-48hrs
- Aim to accomplish 1/3<sup>rd</sup> of the reduction over the first 8 hrs
- If you lower it any faster than that, you risk infarcting the optic nerve heads
- Drugs of choice:
  - Labetalol infusion – unless they are in heart failure
  - Sodium nitroprusside infusion – and monitor for cyanide poisoning

**Nifedipine:** orally; better when you bite the capsule