

DEFG...Don't Ever Forget the Gas

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Introduction

- Hyponatraemia = Serum Sodium < 135mEq/L
- Symptoms range from nausea and headache to coma and seizure
- Causes include hypotonic fluids, SIADH, medications, water intoxication and adrenal insufficiency
- EM practitioners should be aware of it as a differential in refractory seizures

Outcome



Admitted & Investigated: Neuroimaging, serum and urine metabolic testing.

Final Diagnosis: Hyponatraemia secondary to water intoxication.

Disposition: Parent education on fluid intake and child discharged

Case

An 18 month old child arrived to ED with recurrent seizures for > 30 minutes despite a single dose of pre-hospital buccal Midazolam

A/B: Supported with chin lift and high flow oxygen @ 15L/min
C: IV access obtained
D: Tonic-Clonic Seizure, Glucose 7 mmol/L
E: No signs of head injury



Interventions#1:

Weight appropriate dose of IV lorazepam X 2
IV Levetiracteam Infused
IV Phenytoin infusion drawn up
RSI checklist - need for 2nd IV cannula noted



IV Line Inserted and VBG drawn
Na = 112 mmol/L (confirmed on repeat gas)



Interventions #2

3mls/kg bolus Hypertonic saline
Rapid termination of seizure, but remained obtunded
Repeat 2mls/kg bolus Hypertonic saline
Conscious level improved and baseline playfulness within hours

Learning Points

- Na Many guidelines exist for managing status epilepticus. Few reference early checking of serum sodium
- Na In children failing to respond to standard management search for alternative causes: CNS infection, electrolyte abnormality, hypoglycemia, and dystonic reactions
- Na This case highlights the importance of a venous blood gas early in obtunded or critically unwell children

Conclusion



Hyponatraemic seizures are unlikely to respond to standard seizure management; therefore diagnose early and treat appropriately with 3-5mls/kg hypertonic saline