Hypertonic saline (3% NaCl) guideline

Indications for use of 3% NaCl

- **Cerebral oedema** and raised ICP (e.g. head injury, DKA)
- **Hyponatraemic seizures**

Mechanism of action

- Increases plasma sodium
- Creates an osmotic gradient
- Induces a shift of fluid from the intracellular to the extracellular space
- Reduces brain water
- Increases effective circulating volume

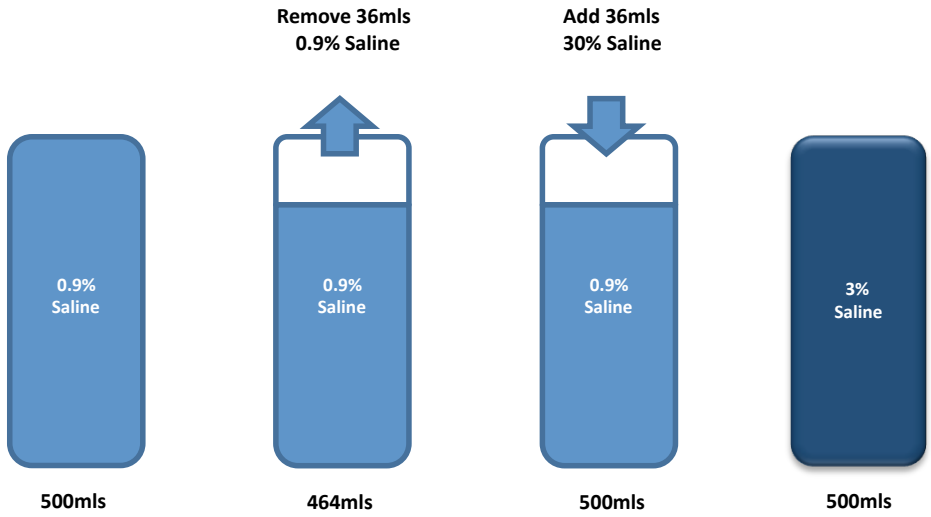
3% NaCl versus Mannitol

- As effective for the treatment of raised ICP in traumatic brain injury
- Less "rebound" ICP
- No obligatory osmotic diuresis (plasma volume preserved/expanded)
- Mannitol may be nephrotoxic
- 3% NaCl is reno-protective.
- Monitoring osmolality
    - For 3% NaCl one can use plasma Na
    - For mannitol need to infer osmolar gap

Dose of 3% NaCl (or pre-made 2.7% NaCl when available)

- Cerebral oedema (TBI or DKA) standard dose is **3-5 mls/kg** (over 10–20 minutes)
- For seizures associated with acute hyponatraemia use aliquots of **1ml/kg** to raise the **Na to ≥125 mmol/L**
- Use SAME dose even if the pre-made 2.7% NaCl solutions is used
- Repeat as clinically indicated
- 3mls/kg of 3% saline will **increase plasma Na by approximately 2-3 mmol/L.** The increase may be greater if a large diuresis occurs. Check plasma Na if any doubt

PREPARATION OF 3% NaCl USING 30% NaCl (to make 500mls)



PREPARATION OF 3% NaCl USING 30% NaCl (to make 50mls)

Take 5 ml NaCl 30%

Dilute with 45ml water for injection to give a final volume of 50ml and mix well

⚠ **DO NOT CONNECT THE 500ML BAG OF 3% SALINE DIRECTLY TO PATIENT IV LINE (RISK OF SERIOUS SODIUM OVERDOSE IF FULL BAG ACCIDENTALLY INFUSED). ALWAYS WITHDRAW THE PRESCRIBED VOLUME OF 3% SALINE (e.g. 3mls/kg) AND ADMINSTER TO PATIENT SEPARATELY**

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