



The OMFS Survival Guide

Prescribing Fluids

Aims & Objective

- Participants to be able to understand indications for fluid prescriptions in adults and children
- Participants to be able to prescribe an appropriate fluid and regime in adults and children
- To have some understanding of fluid balance and causes/ management of dehydration

Components of a Good Medical and Social History

- Full past medical history
- Current prescribed medications and any over-the-counter medications
- Past surgical history
- Family history of conditions
- Smoking- current and past usage
- Alcohol- current and past usage
- Recreational drugs- current and past usage
- Occupation
- Living circumstances
- Systems review
- **If unable to gain a good history, can look at previous admissions, GP records, contact family with consent**

IV Fluids- Indications

- **Resuscitation:** fluid bolus if systolic BP <90, diastolic <60 (however remember a patient with seemingly “normal” BP may be hypotensive if they are usually hypertensive)
- **Replacement:** If a patient is dehydrated or has lost blood the blood volume needs to be replaced (n.b. in patients with blood loss this is a mix of fluid and blood components)
- **Routine Maintenance:** The patient may be NBM pre- or post-operatively, or unable to have a good intake.

Types of IV Fluids

- Hartmann's is most "physiological"- contains multiple electrolytes. Most frequently given, although does not contain enough potassium or any glucose. Cannot add anything to this bag (e.g. K^+ or glucose).
- Plain Saline (0.9% or 0.45% or 0.18% sodium chloride)- also frequently used. Only contains Sodium and Chloride and so given alone increases risk of hypernatraemia and hyperchloraemia. Can add K^+ or glucose to this bag (e.g. 0.9% NaCl with added 10mmols of K^+ and 5% glucose).
- If a patient is NBM and on fluids alone for some time, it is best to alternate bags of Hartmann's and NaCl so patients don't become overloaded or depleted of electrolytes.
- Be aware of patients that have electrolyte disturbances- don't give them a fluid that contains an electrolyte if they already have high levels of it e.g. hypercalcaemia, hyperkalaemia.

| | Na | Cl | K | HCO ₃ | Glucose | Ca |
|---------------------|----------------|----------------|----------------|------------------|-----------------|-----------------|
| Human Plasma | 135-145 | 100-110 | 3.5-5.0 | 22-26 | 3.5- 7.8 | 2.2- 2.6 |
| 0.9% NaCl | 154 | 154 | - | - | - | - |
| Hartmann's | 131 | 111 | 5 | 29 | - | 2 |
| 5% Dextrose | | | | | 50g | |

Adult Maintenance Fluid Requirements

- HEALTHY: 25-30mls/ kg for 24 hours (e.g. a 70kg adult needs 1750- 2100 mls in 24 hours)
- FRAIL/ KNOWN RENAL OR CARDIAC PROBLEMS: 20mls/kg in 24 hours
- Other requirements: 1mmol/kg of potassium, sodium and chloride
- 50- 100g of dextrose per day

Fluid Boluses

- Indicated if hypotensive
- HEALTHY: 500mls of IV Hartmann's or 0.9% Saline given over less than 10 minutes
- FRAIL/RENAL/CARDIAC Impairment: 250mls of IV Hartmann's or 0.9% Saline given over less than 10 minutes

Paediatric Fluid Requirements

- FOR MAINTENANCE ONLY!
- Many units will require you to take overall care for the patient's management plan and prescriptions and so you should know and understand this formula

- 100ml/kg for the first 10kg of weight, then 50ml/kg for the next 10kg and 20ml/kg for any further weight after that
- E.g. a child weighing 24kg needs 1580mls of fluid over 24 hours (1000ml for first 10 kg + 500mls for next 10 kg + 80mls for the next 4kg)
- If the child is dehydrated the fluid loss needs to be calculated- contact paediatrics for help

Signs and Symptoms of Dehydration

- Be very thirsty
- Dry mucous membranes, reduced skin turgor
- Irritable, confused in later stages
- Cold peripheries
- Weak pulses, increased capillary refill time
- Low urine output, dark urine
- **Observations may show:** Tachycardia initially as the heart works harder to pump less blood around the body with other measures (such as vasoconstriction) to preserve the BP to maintain organ perfusion. The BP is one of the last things to fall, and so in patients that are hypotensive they are quite unwell- need immediate management and senior input.
- **Bloods may show:** Hypernatraemia (high sodium) as the NA becomes more concentrated due to loss of water. The kidneys also hold onto more salt to preserve water. Calcium may also become high due to the same effects.

Risks for Fluid Overload

- Cardiac failure
- Renal failure
- Any diseases putting patients at risk of renal issues such as diabetes or hypertension
- Alcoholism (predisposes to a type of heart failure and also liver cirrhosis)
- Pregnancy

Further reading:

General assessment of OMFS patients: <https://www.amazon.co.uk/Call-Oral-Malliofacial-Surgery-2nd/dp/1909818585>

Renal Drug Handbook:

<http://www.gicu.sgul.ac.uk/resources-for-current-staff/supplementary-inpatient-prescription-charts/renalbook.pdf>

Mind the Bleep:

<https://mindthebleep.com/prescribing-iv-fluids/>

Geeky Medics Guides on Adult and Paediatric Fluids:

<https://geekymedics.com/intravenous-iv-fluid-prescribing-adults/>

OSCE Stop Fluids guide:

<https://oscestop.com/Adult%20IV%20Fluids.pdf>

E- Face:

<https://www.e-lfh.org.uk/programmes/oral-and-maxillofacial-surgery/>