Corrections

Intravenous fluid therapy for adults in hospital: summary of NICE guidance

In this Practice article by Smita Padhi and colleagues (BMJ 2013;347:f7073, doi:10.1136/bmj.f7073) the figure (algorithms for intravenous fluid therapy) contained an error. In algorithm 3 the normal requirements of sodium, potassium, and chloride should read 1 mmol/kg/day [not 1 mmol/L/kg/day]. The correct figure is provided here. 

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Figure

Algorithm 1: assessment

Using an ABCDE (Airway, Breathing, Circulation, Disability, Exposure) approach, assess whether patient is hypovolaemic and needs fluid resuscitation.

Assess volume status taking into account clinical examination, trends, and context. Indicators that a patient may need fluid resuscitation include: systolic BP < 100 mmHg; heart rate > 90 beats/min; capillary refill > 12 seconds or peripheries cold to touch; respiratory rate > 20 breaths/min; NEWS > 5; 45° passive leg raising suggests fluid responsiveness.

Algorithm 2: fluid resuscitation

- Yes: Initiate treatment
  - Identify cause of deficit and response
  - Give a fluid bolus of 500 mL of crystalloid (containing sodium in range of 130-154 mmol/L) over 15 minutes
  - Reassess patient using the ABCDE approach
  - Does patient still need fluid resuscitation? Seek expert help if unsure
  - >2000 mL given?
    - Yes: Does patient have signs of shock? Seek expert help
    - No: Does patient have complex fluid or electrolyte replacement or abnormal distribution issues? Look for existing deficits or excesses, ongoing abnormal losses, abnormal distribution, or other complex issues
  - No: Give a further fluid bolus of 250-500 mL of crystalloid

- No: Assess patient's likely fluid and electrolyte needs
  - History: previous limited intake, thirst, abnormal losses, comorbidities
  - Clinical examination: pulse, BP, capillary refill, JVP, oedema (peripheral or pulmonary), postural hypotension
  - Clinical monitoring: NEWS, fluid balance charts, weight
  - Laboratory assessments: FBC, urea, creatinine and electrolytes

Can patient meet their fluid and/or electrolyte needs orally or enterally?

Does patient have complex fluid or electrolyte replacement or abnormal distribution issues? Ensure nutrition and fluid needs are met also see Nutrition support in adults (NICE clinical guideline 32)

Algorithm 3: routine maintenance

Give maintenance IV fluids:
- Normal daily fluid and electrolyte requirements: 25-30 mL/kg/day water
- 1 mmol/kg/day sodium, potassium chloride 90-100 g/day glucose (for example, glucose 5% contains 5 g/100 mL)

Reassess and monitor patient
- Stop IV fluids when no longer needed
- Nasogastric fluids or enteral feeding are preferable when maintenance needs are more than 3 days

Algorithm 4: replacement and redistribution

- Existing fluid or electrolyte deficits or excesses
  - Check for: Dehydration, Fluid overload, Hyperkalaemia or hypokalaemia
  - Estimate deficits or excesses

- Ongoing abnormal fluid or electrolyte losses
  - Check ongoing losses and estimate amounts
  - Check for: Vomiting and NG tube loss, Bilary drainage loss, High or low volume ileal stoma loss, Diarrhoea or excess colostomy loss, Ongoing blood loss, such as melanoma

- Redistribution and other complex issues
  - Check for: Gross oedema, Severe sepsis, Hypertensive or hypotensiveemia, Renal, liver, or cardiac impairment, Postoperative fluid retention and redistribution, Malnourished and refeeding issues
  - Seek expert help if necessary and estimate requirements

Prescribe by adding to or subtracting from routine maintenance, adjusting for all other sources of fluid and electrolytes (oral, enteral, and drug prescriptions)

Monitor and reassess fluid and biochemical status by clinical and laboratory monitoring

N=intravenous. ABCDE=airway, breathing, circulation, disability, and exposure. NEWS=National Early Warning Score. BP=blood pressure. JVP= jugular venous pressure. FBC=full blood count. NG=nasogastric. AKI=acute kidney injury.