Paediatric Quick Hits Gastroenteritis

By Val Astle

- Causes
  - 70% viral, 20% bacterial and 10% protozoa
- Symptoms
  - Vomiting and diarrhoea
    - Vomiting can occur before diarrhoea, but vomiting in isolation generally needs consideration of other causes, particularly if under 6 months, prolonged duration, bilious vomiting, co-morbidities
      - Think UTIs, Sepsis, DKA, Intussception, Appendicitis and more…

Assessment

- Assess degree of dehydration
  - In practical terms, thought of as 3%, 5% and 10%

No or mild dehydration	<3% weight loss	No physical signs, + / - thirst, dry mucus membranes, reduced urine output
Moderate dehydration	4-6% weight loss	Dry mucus membranes, reduced urine output, tachycardia, sunken eyes, minimal or no tears, diminished skin turgor, altered neurological status (drowsiness and irritability).
Severe dehydration	7-10% weight loss	Increasingly marked signs from the above group, plus: decreased peripheral perfusion, (cool, mottled, pale peripheries, capillary refill time >2 seconds), anuria, hypotension, circulatory collapse.

- Assess for signs of shock
  - E.g. Reduced level of consciousness, low BP, poor perfusion

- Assess for signs of differential diagnoses
  - E.g. Focal abdominal tenderness, guarding

Investigation

- Do BGL if prolonged symptoms or moderate/severe dehydration
  - Checking ketones
    - A raised ketone level tells you that there has been some starvation.
    - High ketone level may in itself make them feel sick
      - so knowing the level is very high may make you more concerned that the vomiting is unlikely to resolve soon
      - but there is not a set level for everyone at which this occurs
    - There is no set timeframe within which someones ketones will correct, and so not useful to keep measuring
      - (providing type 1 diabetes ruled out)
- Otherwise, no investigations usually required
  - Can do stool sample if prolonged diarrhoea (>10 days) or if blood/mucus in stool or if immunocompromised
  - Can do routine bloods if doing IVC

Management

- Mild dehydration
  - Trial of oral fluids
    - 1ml/kg (max 20m) every 10 minutes
      - Can use hydrolyte or apple juice diluted 1:1 with water
    - Consider ondansetron.
  - If tolerates oral fluids then discharge home with advice for small frequent feeds/fluid

- Moderate dehydration
  - Trial of oral fluids
  - If fails oral fluids then for NG rapid rehydration
    - 50ml/kg over 4 hours of gastrolyte
    - This corrects for 5% dehydration.
    - Admit to short stay for this
    - If tolerates this then discharge afterwards
    - If vomits then reduce the rate to over 6 hours
    - If fails this (ongoing vomiting) then admit and give slower NG fluids (maintenance +deficit) or IVF

Management

- Severe
  - Obtain IV access
  - Give 20ml/kg 0.9% saline bolus
    - Repeat if required
  - Continue IV fluids of 0.9% saline + 5% dextrose
    - Calculate maintenance + deficit over 24 hours
    - If Na >150 then will need to give fluids slower over 48-72 hours.
    - If neonate then will need fluids of 10% dextrose for maintenance.
  - Admit under paediatric team

Extra tips

- Ondansetron
  - Can be given if child failing oral fluid trial or vomits with rapid rehydration
  - Not recommended as a discharge medication
- Rapid rehydration
  - do not need to see that they can drink afterwards before they are discharged (providing vomiting has settled), as unlikely to drink for several hours after such a large volume with the rapid rehydration
- Probiotics not effective in reducing symptoms
- Antibiotics are reserved for specific pathogens or in patients with comorbidities, i.e. not for uncomplicated diarrhoeal illness