

1. Introduction

- Every year 10% of the UK's under-5s will have an episode of infective gastroenteritis.
- Characteristically they present with sudden onset of diarrhoea (with or without vomiting), which usually resolves without any specific treatment.
- When severe, dehydration can occur, which can be life-threatening. Younger children are most at risk of dehydration.

2. Severity and Outcome

In children with gastroenteritis:

- i. vomiting usually lasts 1–2 days, and stops within 3 days.
- ii. diarrhoea usually lasts 5–7 days, and stops within 2 weeks.

3. Pathophysiology

Escherichia coli 0157:H7 infection

- *E. coli* 0157:H7 is a bacterium found in the intestines of healthy cattle that can cause serious human infections especially in the young and the elderly.
- It often leads to bloody diarrhoea and occasionally kidney failure (referred to as haemolytic uraemic syndrome or HUS). Outbreaks have occurred following school farm visits or following consumption of undercooked, contaminated beef. (Beef burgers are notorious as the meat comes from many animals.)
- When *Escherichia coli* 0157:H7 infection is suspected (e.g. contact with a confirmed case), urgent specialist advice must be sought.

4. Assessment

- Gastroenteritis is diagnosed on clinical findings and should be suspected where there is a sudden change in stool consistency to loose or watery stools and/or a sudden onset of vomiting.

History: consider the diagnosis when the child has had:

- recent contact with someone with acute diarrhoea and/or vomiting
- exposure to a known source of enteric infection (farm visits, contaminated water or food – see *Escherichia coli* 0157 infection above)
- recent overseas travel.

Differential Diagnosis

Apart from gastroenteritis, alternative diagnoses must be considered when the following features are found and a more experienced paediatric assessment should be sought:

- Fever:
 - temp $\geq 38^{\circ}\text{C}$ in child < 3 months old
 - temp $\geq 39^{\circ}\text{C}$ in child ≥ 3 months old.
- Shortness of breath or tachypnoea.
- Altered consciousness.
- Neck stiffness.
- Bulging fontanelle in infants.
- Non-blanching rash.
- Blood and/or mucus in stool.

- Bilious (green) vomit.
- Severe or localised abdominal pain.
- Abdominal distension or rebound tenderness.

Examination: Clinical assessment for dehydration and shock

- Establish whether the child:
 - appears unwell
 - has altered responsiveness, e.g. irritability, lethargy
 - has decreased urine output
 - has pale or mottled skin
 - has cold extremities.

Use Table 3.81 to establish whether the child is clinically dehydrated or shocked.

Children most at risk of dehydration include:

- Infants of low birth weight (i.e. < 2.5 kg).
- Children < 1 year, especially those aged < 6 months.
- > 5 diarrhoeal stools in the previous 24 hours.
- > 2 vomits in the previous 24 hours.
- Those who have not been offered/not been able to tolerate oral fluids.
- Breastfed infants who have stopped feeding.
- Malnourished children.

At the end of the clinical assessment three groups of children should have been identified:

1. Those that are **not dehydrated**.
2. Those that are **clinically dehydrated**.
3. Those that are **clinically shocked**, and their management is detailed below.

Stool samples are not normally required but should be obtained in certain situations:

- Diarrhoea ≥ 7 days.
- Recent overseas travel.
- Possible septicaemia.
- Blood/mucus in stool.
- Immunocompromise.
- Persisting diagnostic uncertainty.

Contact the GP or out-of-hours service where this is thought to be necessary.

5. Management

Most children with gastroenteritis can be managed at home with oral fluids although dehydrated children require NG or IV fluid replacement and those in shock may require urgent intravenous fluid resuscitation. Fluid losses can be replaced either via the oral route, via a nasogastric tube or intravenously:

- a) Oral (and nasogastric) fluids:
 - oral rehydration salt solutions (ORS) are given orally or via a nasogastric (NG) tube.
 - they should be given as small, frequent volumes.
 - response to oral rehydration must be monitored by regular clinical assessment.
 - commercially available ORS solutions include Dioralyte, Dioralyte Relief, Electrolade and Rapolyte.