Canadian Family Medicine Clinical Card

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Gastroenteritis

APPROACH

- Defined as the passage of ≥3 unformed stools in 24hrs plus an enteric symptom (nausea +/- vomiting, abdominal pain/cramping, flatulence, tenesmus, +/- fever) for <7d (pediatric) or <14d (adult)
- Viral etiology is most common (Rotavirus in children, Norovirus in adults)
- Non-bloody diarrhea (viral, bacterial toxin-mediated, *Giardia*) typically resolves within 48hrs without antibiotic treatment
- Bloody diarrhea is often a sign of invasive pathogens (Enterohemorrhagic *E. coli*, *Shigella dysenteriae*, *Salmonella* species, *Campylobacter jejeuni*, *Yersinia enterocolitica*, *Vibrio parahaemolyticus)* or the parasite *Entamoeba histolytica* and requires additional workup (see red flags)
- Approach to gastroenteritis is based upon:
  1. Assessing dehydration,
  2. Maintaining nutrition,
  3. Managing symptoms,
  4. Identifying red flags that require specific management, and
  5. Notifying public health (if required).

⚠ Serious conditions may mimic gastroenteritis; consider alternate dx if patient is **vomiting exclusively** (e.g. GI obstruction, inborn error in metabolism in infants) or if **peritoneal signs** (e.g. surgical causes of acute abdomen).

1. Assess Degree of Dehydration

Severity	Presentation	Management
None	Alert, normal urine output	- Continue hydration +/- ORT (see below) - Regular diet - Replace ongoing losses (10mL/kg for every episode of diarrhea or vomiting)
Mild	Decreased urine output, decreased thirst	
Moderate	Sunken eyes, decreased turgor (skin "tenting" recoils <2sec), dry mucous membranes	- ORT (see below) - Defer solids - Replace ongoing losses
Severe	Signs of moderate dehydration with rapid breathing, rapid thready pulse, lethargy or coma, decreased turgor (recoil >2sec)	- 0.9% NaCl 20mL/kg IV bolus as fast as possible, repeated up to 3x - Glucose, lytes - Intake/output measurement - Commence ORT once resuscitated

Oral rehydration therapy (ORT):

- **Pediatric:** ORT preferred
  - Target: 20mL/kg/hr in the first hour, followed by 10mL/kg/hr (mild) or 15-20mL/kg/hr (moderate) over the next 6-8hrs
  - Commercial electrolyte solutions (e.g. Pedialyte) and oral rehydration packets are preferred; however, 1L sports drinks with ½ tsp salt added can be used. Avoid carbonated drinks, juices, and water.
  - Start with small volumes and increase, using a spoon or dropper for infants, and small sips or a syringe for children (NG before IV in child who refuses fluids)
  - Administer q5mins, if vomiting occurs, wait 10min and resume
  - Assess q4hrs; patients unable to maintain hydration may require hospitalization
- **Adults:** mildly dehydrated adults can keep up with fluid losses using water, broths, and sports drinks; more significant dehydration should be treated using commercial electrolyte solutions as above

2. Maintain Nutrition

- Breastfeeding should continue unrestricted.
- If regular diet is held, aim to resume within 6hrs of initiating ORT.
- Start with simple starches (rice, saltine crackers), low-fat yogurt, fruits (bananas, apple sauce), steamed low-fibre vegetables (potatoes, yams), and steamed lean meats (chicken).
- Progress to full diet, as tolerated, within 24-48hrs.

3. Manage Symptoms

- Ondansetron: if severe vomiting in patient >6mos, may trial 0.15 mg/kg (max 8mg) PO once. ORT should be initiated 15-30mins after administration.
- Loperamide: can be considered for diarrhea in children >2y and adults if no fever or blood in stool, do not use >48hrs.
- Bismuth subsalicylate: for adults with abdominal pain and diarrhea (contraindicated if patient taking fluoroquinolones); warn patients that stools may appear black with this medication.
  - Avoid in children with "flu-like illness" or fever as risk for Reye's Syndrome
- Probiotics: some evidence for use in adults with *C. difficile*.

⚠ 4. Identify RED FLAGS	Management
- Fever (>72hrs) or grossly bloody diarrhea - Severe abdominal pain - Exposure to suspicious foods (undercooked meat, unrefrigerated food, unpasteurized dairy)	- Stool culture and sensitivity
- Hospitalized (presently or in last 6 mos) - Recent antibiotic use - Profuse diarrhea (>6 diarrheal episodes/d) - Immunocompromised (chemotherapy, HIV) - Age >65 with comorbidities (heart/renal failure, ↓ mobility)	- Stool culture and sensitivity - *C. difficile* toxins A and B
- Exposure to untreated water - Foreign travel (last 6mos) - HIV +ve patient - Diarrhea >1wk	- Stool culture and sensitivity - Stool ova and parasite
- Diarrhea changes to bloody within 3 days of illness onset - Decreased urine output, or dark urine - Consumption of undercooked beef (suggests Enterohemorrhagic *E. coli*) - Purpura on physical exam	- No antibiotics, evaluate for HUS: ❑ Renal injury (elevated Cr or ↓ urine output) ❑ Thrombocytopenia (platelets <150) ❑ Microangiopathic hemolytic anemia (Hbg <100)

- In patients presenting with all of [fever (>72hrs) AND bloody AND profuse diarrhea (>6 diarrheal episodes/d) AND duration >1wk], consider empiric ciprofloxacin or azithromycin, or ceftriaxone if hospitalized.
- Absolute indications for antimicrobial therapy: infection with *S. typhi*, *Shigella*, *C. difficile*, *E. histolytica*; treat prior to test results if suspicion is very high

5. Notify Public Health

- Campylobacter, Cholera, *C. difficile, Giardia, Listeria (only invasive forms), Norwalk (only outbreaks), Salmonella;* check provincial requirements.

Key References: 1) Churgay CA, Aftab Z. Gastroenteritis in Children: Part I. Diagnosis. American Family Physician. 2012Jun1;85(11):1059-62. 2) Riddle MS, Dupont HL, Connor BA. ACG Clinical Guideline: Diagnosis, Treatment, and Prevention of Acute Diarrheal Infections in Adults. The American Journal of Gastroenterology. 2016Dec;111(5):602-22. 3) Churgay CA, Aftab Z. Gastroenteritis in Children: Part II. Prevention and Management. American Family Physician. 2012Jun1;85(11):1066-77. 4) Leung A, Prince T, Canadian Paediatric Society, Nutrition and Gastroenterology Committee. Oral rehydration therapy and early refeeding in the management of childhood gastroenteritis. Paedi Child Health 2006;11(8):527-31