

CLINIC CONSULT

PEDIATRICS

Childhood Diarrhea

2nd Edition



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CHAPTER 4

Clinical Diagnosis of Diarrhea

Quite often, it is possible to diagnose the cause of diarrhea on clinical grounds and without any investigations. The following clinical parameters may help.

HISTORY

- The age of child is important as many illnesses are typically present at certain ages. Rotavirus diarrhea occurs in early infancy. Norwalk virus infection occurs in slightly older infants and preschool children
- It might be possible to distinguish inflammatory cause from noninflammatory cause. Inflammatory disorders typically cause extraintestinal symptoms, such as fever, arthritis, anemia, leukocytosis, and/or blood or mucus in the stool. Patients with noninflammatory disorders generally have milder symptoms and would not have mucus in the stool
- Small intestinal pathology usually results in a large volume of diarrhea, and may also result in malabsorption in one or more nutrients. Large bowel pathology usually results in smaller volume of diarrhea, unless there is a secretary element to the diarrhea. Inflammation of the large intestine is more likely to present with gross blood

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and mucus in the stool along with symptoms of fecal urgency and tenesmus

- Viral diarrhea generally has a short incubation period of 2–5 days. Soon afterward, the virus particles are excreted causing symptoms, such as vomiting, diarrhea, fever, and abdominal cramping. The symptoms usually subside within 7 days
- Patients with bacterial gastroenteritis often present with fever, abdominal pain, and blood or mucus in the stool. The diarrhea is typically self-limited and resolves within 10 days. However, several pathogens like *Salmonella*, *Shigella*, *Yersinia enterocolitica*, and *Campylobacter jejuni* can cause persistent diarrhea. *Clostridium difficile* produces a toxin that can cause pseudomembranous colitis. It is typically associated with antibiotic administration but can occur spontaneously as well
- Presence of other medical problems can also give a clue to the etiology of diarrhea, viz., respiratory tract infection, otitis media, urinary tract infection (UTI) or some other acquired immunodeficiency syndrome, or other immune deficiency.

FEVER

Presence of fever in a child with acute diarrhea can provide some information and may indicate need for special evaluation.

- In rotavirus diarrhea, the fever is occasionally of high grade but the child does not look toxic
- In shigellosis, the child has toxemia besides fever as gastrointestinal infections (except *Salmonella* rarely caused fever beyond 36–48 hours; every child with fever of more than 48 hours should be investigated)

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- In a child with persistent fever, diarrhea is only of a secondary importance. Onset of fever preceding the onset of diarrhea may indicate systemic infection and should be accordingly investigated. Parenteral infections cause not only fever but also other symptoms like excessive crying (otitis media, meningitis), respiratory distress (pneumonitis), and dysuria or urinary frequency (UTI).

NAUSEA AND VOMITING IN ACUTE DIARRHEA

- These are nonspecific symptoms but vomiting may suggest infection in the upper intestine, such as by enteric viruses, enterotoxin-producing bacteria, and *Giardia* and *Cryptosporidium*
- If emesis is not accompanied by fever or the fever is of low grade, then the diarrhea may be due to noninflammatory cause
- A child with isolated or persistent vomiting should be considered for an affliction outside the gastrointestinal tract (throat, chest, meninges, liver, urinary tract, etc.) rather than in the gastrointestinal tract itself.

Hence, all children with persistent vomiting with or without diarrhea need very careful appraisal for these problems rather than just trying to stop vomiting.

CONSISTENCY AND CONTENT OF STOOLS

At times, this may also provide a clue to the cause of diarrhea. On the basis of the type of stools, it has been classified as acute watery diarrhea and acute invasive (bacillary dysentery) diarrhea syndrome.

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Watery Diarrhea/Mucoid Diarrhea

- Rotavirus and other viral diarrheas
- Enterotoxigenic *Escherichia coli* (ETEC), *Vibrio cholerae*, *Campylobacter*, enteropathogenic *E. coli* (EPEC)
- Parenteral infections (otitis media, UTI, pneumonia)
- *Giardia* (occasionally)
- Early stages of *Shigella* (rarely).

Invasive Diarrhea (Loose Stools with Blood)

- *Shigella*, enteroinvasive *E. coli* (EIEC)
- *Salmonella* (nontyphoidal)
- *Campylobacter*
- *Yersinia*.

CAUSATIVE ORGANISM

The likely causative organism based on clinical presentation may be as follows:

- Infant with severe watery diarrhea, vomiting, and mild-moderate fever: Rotavirus
- Similar presentation in older infant/preschool child: Norwalk virus
- Child with large, watery stools, vomiting, and severe dehydration: *V. cholerae* or ETEC
- Blood and mucus in stools, fever, abdominal cramps, and tenesmus: *Shigella*
- Small amount of blood in stools: *Shigella*, *Salmonella*, *Campylobacter*, EIEC
- Diarrhea in a very sick looking child who has received broad-spectrum antibiotics—*Staphylococcus*, *Candida*, *Clostridium*

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- Young infant with perianal excoriations (extending to groins and thighs): Fungal diarrhea/lactose intolerance.

CLINICAL MANIFESTATIONS

Other clinical manifestations which may also give an idea of the causative organisms are as in table 1.

TABLE 1

Associated clinical manifestation of different pathogens	
Manifestation	*Pathogens*
Reactive arthritis	*Salmonella, Shigella, Yersinia, Campylobacter, Clostridium difficile*
Guillain-Barre syndrome	*Campylobacter*
Acute glomerulonephritis	*Shigella, Campylobacter, Salmonella*
IgA nephropathy	*Campylobacter*
Erythema nodosum	*Yersinia, Campylobacter, Salmonella*
Hemolytic anemia	*Campylobacter, Yersinia*
HUS	*Shigella dysenteriae* type 1, *Escherichia coli*

IgA, immunoglobulin A; HUS, hemolytic–uremic syndrome.

KEY MESSAGES

- Clinical information regarding age of child, stool characteristics, duration, and associated systemic signs and symptoms help in diagnosing the cause
- Different pathogens may present with myriads of systemic manifestations affecting other organ systems.

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