

FROM THE FAMILY PRACTICE INQUIRIES NETWORK

What is the best way to evaluate acute diarrhea?

Lynda Montgomery, MD

Boston University Family Medicine

Caryn Scoville, MLS

Health Sciences Library University of Missouri–Columbia

■ EVIDENCE-BASED ANSWER

Limited evidence delineates the relative probabilities of causes of acute diarrhea, typically defined as a diarrheal disease lasting 14 days or fewer, in the developed world. Viruses (rotavirus, Norwalk, and other enteric viruses) are responsible for most cases. Stool culture helps to identify bacterial causes (*Salmonella*, *Shigella*, enterotoxigenic *Escherichia coli*), especially in patients with fever and bloody stool. A modified 3-day rule (eg, performing only *Clostridium difficile* toxin tests on low-risk patients who have been hospitalized for 3 or more days) leads to a more rational use of stool cultures without missing cases of clinically significant disease. (Grade of recommendation: D, based on limited studies, reliance on expert opinion, and consensus.)

■ EVIDENCE SUMMARY

More than 2 million cases of infectious diarrhea are documented in the United States annually. Infectious diarrhea is the second leading cause of morbidity and mortality worldwide. Published data have focused on the etiology of diarrhea in the developing world, and more commonly on the clinical evaluation and treatment of patients with diarrhea and dehydration.

While most research on acute diarrhea focuses on infectious causes, noninfectious causes should also be considered (eg, drug-induced diarrhea, inflammatory bowel disease).¹ Viral causes are most common; in children, viruses are responsible for 70% to 80% of cases of diarrhea.² A prospective study of 147 US children with acute, mild diarrhea demonstrated that rectal swabs yielded a positive test for an infectious agent in 60.5% of cases (**Table**).³

A case-control study of stool cultures for rotavirus in adult patients found that 14% of 683 with diarrhea and 5% of 1115 without diarrhea shed rotavirus.⁴ A recent systematic review found no published studies about the likelihood of specific diagnoses in children presenting to the hospital with diarrhea.⁵

Some evidence supports a structured diagnostic strategy for hospitalized patients with acute diarrhea. Using retrospective reviews, Bauer and colleagues⁶ developed a prediction rule for cases of infectious diarrhea. The “modified 3-day rule” recommends stool cultures for patients with diarrhea beginning more than 3 days after hospitalization only when they fall into 1 of the following groups: patients older than 65 years with permanently altered organ function, those with HIV or neutropenia, those hospitalized during suspected nosocomial

outbreaks, and those suspected of nondiarrheal manifestations of enteric infection.⁶ When the modified rule was applied prospectively, only 2 cases were missed. Both patients were at risk for immunosuppression, although they did not strictly meet the modified criteria. Neither required treatment.⁶

Etiologic agents in US children with acute diarrhea

Infectious agent	Percent
Rotavirus	29.3%
Giardia lamblia	15%
Pathogenic Escherichia coli	15%
Multiple agents	10%

Data from Caeiro JP, Mathewson JJ, Smith MA, Jiang ZD, Kaplan MA, Dupont HL. Etiology of outpatient pediatric nondysenteric diarrhea: a multicenter study in the United States. *Pediatr Infect Dis J* 1999; 18:94–7.

■ RECOMMENDATIONS FROM OTHERS

The Infectious Diseases Society of America’s practice guidelines for the evaluation and treatment of acute diarrhea recommends that stool culture for bacteria (including enterotoxigenic *E coli*) should be considered in patients with community- or travel-acquired diarrhea, especially when fever or bloody stool is present. In hospitalized patients, only toxin tests for *C difficile* are recommended. Testing for acute parasitic diseases should be reserved only for patients whose symptoms persist after 7 days.¹

Clinical Commentary by Les Hall, MD, at <http://www.fpin.org>.

REFERENCES

- Guerrant RL, Van Gilder T, Steiner TS, et al. Practice guidelines for the management of infectious diarrhea. *Clin Infect Dis* 2001;32:331–51.
- Merrick N, Davidson B, Fox S. Treatment of acute gastroenteritis: too much and too little care. *Clin Pediatr (Phila)* 1996;35:429–35.
- Caeiro JP, Mathewson JJ, Smith MA, Jiang ZD, Kaplan MA, Dupont HL. Etiology of outpatient pediatric nondysenteric diarrhea: a multicenter study in the United States. *Pediatr Infect Dis J* 1999;18:94–7.
- Nakajima H, Nakagomi T, Kamisawa T, et al. Winter seasonality and rotavirus diarrhoea in adults. *Lancet* 2001;357(9272):1950.
- Armon K, Stephenson T, MacFaul R, Eccleston P, Werneke U. An evidence and consensus based guideline for acute diarrhoea management. *Arch Dis Child* 2001;85:132–42.
- Bauer TM, Lalvani A, Fehrenbach J, et al. Derivation and validation of guidelines for stool cultures for enteropathogenic bacteria other than *Clostridium difficile* in

hospitalized adults. JAMA 2001;285:313-9.