

# Stool Cultures Rarely Useful in Managing Diarrhea

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ASPEN, COLO. — Stool cultures cost millions of dollars annually, but rarely turn up meaningful information for physicians managing diarrhea in the United States, according to Ann-Christine Nyquist, M.D.

Physicians should only order cultures when the results would affect treatment or if they suspect an infectious disease outbreak, she advised at a conference on pediatric infectious diseases sponsored by Children's Hospital, Denver.

"Is it going to make a difference in what you are going to do with that patient—whether you treat or not? You are probably going to treat symptomatically," said Dr. Nyquist, the hospital's medical director of infection control.

She cited a review of 598 cultures done in pediatric hospital patients. Only 18 (3%) were positive (Arch. Pediatr. Adolesc. Med. 1997;151:142-5). Extrapolating the \$26,084 cost of these negative tests against 1990 census data for hospitalized children aged 14 and under, Dr. Nyquist suggested that more than \$45 million a year was being thrown away on negative stool tests for this population.

More useful information can be obtained from patient history, she said, urging physicians to be thorough in their questioning. "You really want to get to the nitty-gritty of what did the poop look like. ... Eighty percent of the story can be gotten by looking at the history," she said.

Focusing on epidemiologic risk factors in children, she suggested questions about travel to a developing area, day care, pets and petting zoos, unsafe foods, swimming in or drinking fresh untreated surface water, knowing other ill people, medications, and underlying medical conditions. Ask about contact with reptiles, she advised.

Review of clinical and epidemiologic features should include whether the illness had an abrupt or gradual onset, duration of symptoms, frequency of bowel movements, and relative quantity of stool produced, according to Dr. Nyquist, also of the University of Colorado, Denver.

Specific questions about stool characteristics should focus on such features as "watery, bloody, mucous, purulent, greasy, etc.," she said. Be sure to ask about dysenteric symptoms, such as "fever, tenesmus, blood and/or pus in the stool"; symptoms of volume depletion; and associated symptoms, such as "nausea, vomiting, abdominal pain, cramps, headache, myalgia, or altered sensorium."

Recent travel abroad is one of four criteria in an evidence- and consensus-based guideline cited by Dr. Nyquist for ordering a stool culture. The others are "history of blood with or without mucus in stool, [being] systematically unwell, severe or prolonged diarrhea, [and] a history suggestive of food poisoning" (Arch. Dis. Child. 2001;85:132-42).

Tests should be ordered selectively, starting with the most likely pathogens, she said. About 80% of traveler's diarrhea is caused by a bacterial agent, according to Dr. Nyquist. It can occur in the United States.

without travel to a developing country.

The parasitic agents *Giardia lamblia* and *Cryptosporidium* also are common causes for which new tests are available. Among the viral causes of diarrhea, she identified rotavirus as the leader with 3.5 million episodes occurring annually each year in the United States. Not detectable by routine viral cultures, it requires more expensive tests.

Dr. Nyquist urged caution with empiric use of antimicrobial agents, and warned

that most experts advise against using antibiotics in patients with bloody stool.

Antibiotics might induce disease-producing phage in some cases, she said, and they may worsen the risk of postdiarrheal hemolytic uremic syndrome in patients with shiga toxin *Escherichia coli* infections.

Treatment options discussed by Dr. Nyquist included rifaximin for simple traveler's diarrhea (but not in complex cases with bloody stool); tinidazole, a new agent for parasitic diseases; and Alinia (active

ingredient nitazoxanide), which is approved for pediatric diarrhea caused by *Cryptosporidium* or *Giardia intestinalis*.

Physician use of soap and water is also very important, according to Dr. Nyquist. Rotavirus can survive for days on hospital surfaces (which must be cleaned with a bleach solution), and hand-washing gels are not effective against *Clostridium difficile*.

In all cases, no matter what the cause, she added, "if your hands are visibly soiled, you need to use soap and water." ■

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