

20.4 PERSISTENT TRAVELERS' DIARRHEA

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Most cases of travelers' diarrhea are acute in nature and will resolve within a week of onset of symptoms. Travel medicine practitioners and others who care for returning travelers have increasingly recognized subacute or chronic diarrheal syndromes in some returning travelers. Some cases of travelers' diarrhea persist for weeks, months, or even years, and the importance of chronic diarrhea as a presenting complaint is now well established in the post-travel setting. There are limited data on the incidence, natural history, and predisposing factors for chronic travelers' diarrhea, and an analysis of this condition is hindered somewhat by lack of uniformity in defining the syndrome. Indeed, some cases of persistent travelers' diarrhea are cases in which the diarrhea itself is actually a small complaint, but associated gastrointestinal symptoms such as cramping, bloating, gaseousness, and rectal urgency may predominate. In some cases, extreme and debilitating fatigue may follow a bout of travelers' diarrhea. In other cases, a distinct change in bowel habits such as intractable constipation may also follow acute travelers' diarrhea.

In a recent review of three studies, it has been found that up to 3% of travelers have persistent diarrhea longer than 30 days, and it has been estimated that between 3% to 10% will have diarrhea longer than 2 weeks.¹⁻³ This chapter will focus on the evaluation and management of the patient with chronic travelers' diarrhea, defined as diarrhea lasting longer than 2 weeks, the onset of which began during or shortly after travel. As important as recognizing the etiologies of chronic travelers' diarrhea will be recognizing distinct clinical syndromes. A combination of an etiologic and syndromic approach to this problem will often be more helpful than one or the other exclusively. The etiologies of chronic travelers' diarrhea are primarily but not exclusively infectious in nature. Bacteria, the most common cause of acute travelers' diarrhea, may also cause chronic travelers' diarrhea. Likewise, parasites and, in some cases, viruses can cause prolonged symptoms as well. In some cases, treatment of acute travelers' diarrhea may lead to continuing diarrhea because of bacterial overgrowth syndromes (e.g., *Clostridium difficile*, small bowel overgrowth). In other cases, a bout of acute travelers' diarrhea will unmask an underlying gastrointestinal syndrome such as celiac disease, inflammatory bowel disease, or irritable bowel syndrome.

INFECTIOUS ETIOLOGIES OF CHRONIC TRAVELERS' DIARRHEA

BACTERIA

Travelers' diarrhea is usually caused by a bacterial agent such as enterotoxigenic *Escherichia coli*, *Shigella*, *Salmonella*, or *Campylobacter*.^{2,4} These bacteria may also lead

to persistent symptoms in some individuals. After an initial resolution of the infection, a carrier state may ensue with recrudescence of symptoms days to weeks later. Both *Salmonella* and *Shigella* species have been known to behave in this manner. In some cases, there is slow resolution of the acute infection leading to damage to the intestinal mucosa, which may take days to weeks to repair even after clearance of the organism. An individual who reports relapsing diarrhea in the first few weeks following enteric bacterial infection may be suffering from this postinfective intestinal inflammation.

Infections due to diarrheagenic forms of *E. coli* and *Shigella* generally last less than a week, and excretion of the organisms is usually less than 2 weeks. The illness due to nontyphoidal *Salmonella* and *Campylobacter* is also generally short, but fecal excretion of the organism may continue for 4 to 6 weeks. A careful history may suggest that chronic diarrhea may be several unrelated episodes and that the current infection was acquired shortly before returning home. A history of fever and the presence of fecal leukocytes, blood, or mucous may suggest a missed bacterial infection. Treatment history may indicate that the infection was not treated or treated inappropriately. Stool culture with antimicrobial susceptibility testing is often helpful. *Yersinia enterocolitica* should be considered in travelers going to temperate climates but is very rare in travelers returning from the tropics. Recently, organisms such as enteroadherent *E. coli* have been associated with this syndrome of persistent diarrhea. Enteroadherent *E. coli* have been suggested as causes of chronic diarrhea in children in the developing world and in African patients with AIDS.⁵⁻⁸ Two studies recently suggested the possible importance of this organism as a cause of travelers' diarrhea.^{9,10} *Aeromonas* and *Plesiomonas* infections have been associated with chronic diarrhea in a few instances.^{11,12}

ANAEROBIC BACTERIA

C. difficile is a bacterial organism that elicits at least two toxins.¹³ *C. difficile* infections may be a cause of persistent diarrhea in returned travelers. There is usually a history of prior treatment of diarrheal episodes with antibiotics. In some cases, diarrhea from *C. difficile* may result from the use of antimalarial chemoprophylactic agents such as mefloquine, chloroquine, or doxycycline. A careful history of prior antibiotic use and medications used during travel is important in suggesting this diagnosis. An examination of stool for *C. difficile* toxin should be included as part of the work-up.

PARASITIC INFECTIONS

Parasitic infections probably represent the most common causes of chronic diarrhea in returning travelers. With