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Management of traveler's Diarrhea: Short review

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Abstract
It is typically caused by the consumption of contaminated food or water, predominantly by bacteria. Prevention strategies include careful selection of food and beverages. Prophylactic antibiotics are not recommended for most travelers. Management is self-diagnosis while still travelling, followed by hydration, medicine for symptom relief, and antibiotics therapy which is generally reserved for moderate to severe infections. In healthy patients, resolution is typically within 3 to 5 days even without antibiotic treatment.

Keywords: consumption, management, moderate

Introduction

Traveler's diarrhea (TD) is defined as ≥3 unformed stools in 24 hours accompanied by at least 1 of the following: fever, nausea, vomiting, cramps, tenesmus, or bloody stools (dysentery) during a trip abroad, typically to a low- or middle-income country. It is usually a benign self-limited illness lasting 3 to 5 days [1].

Risk factors include age <30 years, suppressed stomach acidity (due to use of proton-pump inhibitors, H2 blockers), immune suppression, lack of previous travel to high-risk destinations in the past 6 months, hot and wet climate [2].

Classification

1. Clinical

a. Tolerable (Mild): Diarrhea is not distressing, and does not interfere with planned activities.
b. Distressing (Moderate): Diarrhea that interferes with planned activities.
c. Incapacitating (Severe): Diarrhea that is completely prevents planned activities. Dysentery (passage of grossly bloody stools) is considered severe.
d. Persistent: diarrhea lasting ≥2 weeks.

2. Etiological

a. Bacterial traveler's diarrhea (80—90%): common infection usually due to enterotoxigenic Escherichia coli (ETEC) and enter aggregative E coli, Shigella, Salmonella (non-typhoid), Campylobacter jejuni, Yersinia, Aeromonas hydrophila, Plesiomonas shigelloides, and Vibrio (non-cholera) species [3].
b. Viral traveler's diarrhea: diarrhea due to rotavirus (especially in infants and children), norovirus (e.g., on cruise ships), and other enteric viral infections.
c. Parasitic traveler's diarrhea: more persistent (>14 days) diarrhea due to parasitic infection with Giardia, Entamoeba, or Cryptosporidium.

However, self-limited post-infectious irritable bowel syndrome is an even more frequent finding in returning travelers with persisting diarrhea [4].

Prevention

Careful selection of safe food and beverages. Prophylactic antibiotics are not recommended for most travelers [1, 5] except short-term critical itineraries such as diplomatic missions, professional sports, and critical business/life event engagements and chronically ill or immunocompromised patients on trips of <3 weeks' duration. Rifaximin is considered the treatment of choice for prophylaxis. [6-8] Fluoroquinolones are not recommended for the prophylaxis of TD [1]. Antibiotic prophylaxis is not usually recommended in children.

Diagnosis

Clinical, stool examination (culture and sensitivity) if severe or persistent diarrhea. PCR can be done to detect multiple pathogens. Stool for ova and parasite, protozoal stool antigen test if persistent diarrhea. Clostridium difficile stool toxin if suspect antibiotic induced diarrhea.

In chronic diarrhea need CBC, CRP, ESR, celiac disease antigens, colonoscopy, endoscopy and biopsy to rule out IBD, cancers, malabsorption syndrome.

Table 1

Differential Diagnosis	Features	Workup
Food poisoning	Vomiting followed by diarrhea within hours	Clinical, stool culture
IBS	Diarrhea alternate constipation, no weight change	Normal examination and laboratory test
IBD	Diarrhea with fever, abdominal pain	CBC, ESR, colonoscopy
Celiac D	Foul smelling chronic diarrhea, dermatitis herpetiformis	Serology test (AGA, AGG, tTGA, EMA)
pseudomembranous colitis	Drug induced	C difficile Stool toxin test

Treatment

1. Rehydration (ORS)
2. Adjunct Therapy (symptoms relief):
   a. Loperamide (antimotality agent): Alone or with antibiotics. Avoid in pregnancy, child <6 years and dysentery
   b. Bismuth subsalicylate: mild infections. Avoid in pregnancy, child <12 years (Reye's syndrome risk)
   c. Antibiotics (1st line: Azithromycin, 2nd line: Rifaximin, quinolones)
   d. Anti-parasitic agents: if no response with antibiotic, test stool for ova/parasite and give metronidazole or tinidazole.

Emerging treatment

1. Rifamycin. FDA approved for watery diarrhea
2. Crofelemer. For watery diarrhea (acute, HIV, IBS, pediatric), reduce stool volume in 6 hours
3. Prebiotics & probiotics
4. Cholera vaccine
5. Diosmectite. Ion anti-secretory agent and to prevent intestinal damage.

Table 2

Prophylaxis	Started before departure and discontinued after travel
Rifaximin	200-1100 mg/day orally given in 1-3 divided doses
Bismuth subsalicylate	524-1048 mg orally four times daily
Treatment	
Loperamide	4 mg initial → 2 mg / each unformed stool, maximum 16 mg/day
Azithromycin	1000 mg orally single dose or 500 mg orally once daily for 3 days
Rifaximin	200 mg orally three times daily for 3 days
Ciprofloxacin	750 mg single dose or 500 mg once daily for 3 days
Ofloxacin	400 mg orally once daily for 1-3 days
Levofloxacin	500 mg orally once daily for 1-3 days
Children	
Azithromycin	10 mg/kg orally once daily for 1-3 days, maximum 500 mg/day
Rifaximin	200 mg orally three times daily for 3 days
Ciprofloxacin	20-30 mg/kg/day orally given in 1-2 divided doses for 1-3 days

Complications

1. Post TD lactose intolerance
2. Post TD IBS
3. Antibiotic side effect (pseudomembranous colitis)
4. Hemolytic Uremic Syndrome

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