



Bulletin No. 3

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## Treatment and Prevention of Travelers' Diarrhea

Often health care personnel are asking for advice on treatment and prevention of diarrhea acquired while traveling outside the United States. Probably there are as many different suggestions given as there are causes of travelers' diarrhea. Recently, however, more knowledge has been gathered on this subject and the waters are clearing slightly, so to speak. So we thought it appropriate to include a brief review of the subject as it appeared in a recent advisory memorandum from the Center for Disease Control, Atlanta, Georgia.

"Travel agencies, health departments, airlines, and shipping companies receive many inquiries from persons planning international travel about how to prevent and treat diarrhea. Preventive measures and home remedies for travelers' diarrhea are adequately discussed in *Health Information for International Travel* (pages 90-92) (1); however, because the use of antibiotics and other drugs was not covered in that discussion, we deal here with information to answer questions posed by travelers about over-the-counter and prescription drugs commonly considered to prevent or treat travelers' diarrhea. An advance note of caution is necessary; We strongly recommend that the traveler contact a physician, if possible, rather than attempt self-treatment if the diarrheal illness is severe enough to warrant medication."

"The mainstay of therapy of an acute diarrheal disease is rehydration (fluid replacement) with either oral or, in severe cases, intravenous glucose and electrolyte solutions. A few comments on simple oral preparations for use by travelers appear on page 92 in *Health Information for International Travel*. These formulas can be used whether or not antidiarrheal drugs are taken."

"An appropriate antibiotic may limit the severity and duration of diarrhea caused by certain organisms, such as *Shigella*, but antibiotics are ineffective for treating diarrhea caused by certain others. For instance, antibiotics do not appear to modify diarrheal illness caused by *Salmonella* or, in one study, by enterotoxigenic *Escherichia coli*."

"Two recent studies, however, indicate that doxycycline (*Vibramycin*®), an oral antibiotic, may be of value in preventing cases of travelers' diarrhea caused by enterotoxigenic *E. coli* organisms that are susceptible to the drug. A daily dose of the drug was effective in preventing diarrhea in 18 Peace Corps Volunteers in Kenya and 26 Volunteers in Morocco for the three weeks the drug was given and for one week after it was stopped. We do not know whether it is effective when taken for more than three weeks or when used by other people in other areas. In addition, this drug has only been tested in two geographic regions; in some areas, enterotoxigenic *E. coli* organisms do not respond to doxycycline; side effects of the drug such as extreme sensitivity to sunlight may occur; and use of the drug may increase a person's likelihood of acquiring more serious gastro-intestinal infections caused by *Salmonella* or *Shigella* organisms, which may not respond to the drug."

"We do not have enough information on risks and benefits of use of doxycycline for preventing diarrhea to make general recommendations for travelers. This decision should be made by the individual traveler's physician after considering the traveler's age, underlying illnesses, and pregnancy status, as well as the destination and length of the trip, ease of access to safe food and water, availability of medical care, and the frequency (if known) of enterotoxigenic *E. coli* organisms that do not respond to tetracycline in the area to be visited. Until additional data are available, it is probably prudent to restrict its use to nonpregnant adults and children over eight years of age who are traveling for three weeks or less in remote areas of developing countries where it may be impossible to obtain safe food or beverages and where access to medical care may be listed."

"Drugs that slow the movement of the bowels (antimotility agents), such as diphenoxylate (*Lomotil*®) and loperamide (*Imodium*®), may provide symptomatic relief for patients with severe abdominal cramps, but should be used with caution by patients with diarrhea lasting more than 2-3 days or by any persons with blood or mucus in the stools or fever, since illness caused by some bacteria causing these conditions may be worsened by these drugs. Kaolin-pectin preparations (e.g., *Kaopectate*\*) may alter stool consistency, but they do not modify the illness. Idochlorhydroxyquin (*Entero-Vioform*\*) is not effective in preventing or treating travelers' diarrhea and, in any case, should not be used because of the risk of severe neurologic side effects with prolonged use.

"Recent evidence suggests that bismuth subsalicylate (*Pepto-Bismol*®) may be of value in both preventing and treating travelers' diarrhea, especially in those cases caused by enterotoxigenic *E. coli*. However, in the reported study of its use for prevention, large quantities of the liquid preparation were taken (2 ounces 4 times a day). Use of 1-2 ounces every 30 minutes for 8 doses has resulted in a decrease in diarrhea. Carrying enough *Pepto-Bismol*® to be effective either for prevention or treatment may be impractical, however, and further information is needed concerning the possibility of adverse effects of the drug used in this manner.

"Above all, the importance of precautionary measures to prevent diarrhea, rather than treatment or prevention with drugs, should be stressed to potential international travelers. Since the sources of the organisms causing traveler's diarrhea are usually contaminated food and water, travelers to areas where hygiene and sanitation are poor should be advised to eat only pasteurized milk and milk products, regardless of whether or not they are taking preventive medication. In addition, they should be advised to drink water that has been boiled or adequately disinfected with iodine or chlorine compounds, bottled carbonated water, soft drinks, beer, or wine. Should diarrhea occur despite these severe or does not resolve with several days."

### Reference

1. Center for Disease Control: *Health Information for International Travel*. *Morbidity Mortality Weekly Rep* 28 (Suppl): 90-92, 1979