Cholera

Traveler Summary

Key Points

- Cholera is an acute intestinal bacterial infection occurring mainly in Africa and South and Southeast Asia, acquired through the consumption of fecally contaminated food or water.
- Risk is very low in typical travelers, even in countries with cholera. Risk is highest for aid and refugee workers (including health care workers [HCWs]) handling patients with cholera.
- Symptoms are generally mild and include watery diarrhea, nausea, and vomiting.
- Consequences of infection rarely occur in travelers but may include severe dehydration, muscle cramps, and shock.
- Prevention includes observing strict food and beverage precautions and hand hygiene (frequent, thorough handwashing with soap and water).
- Cholera vaccination (only indicated for certain at-risk groups), depending on the brand, is taken orally either as a single dose at least 10 days before possible exposure (US vaccine) or in a multiple-dose series given at intervals of 1 to 6 weeks apart (non-US vaccine).
- Vaccine side effects are most commonly mild gastrointestinal (GI) symptoms (e.g., nausea and vomiting), fatigue, or lack of appetite.
- Duration of vaccine protection is 2 years for the US vaccine, with a booster recommended every 2 years if at continued risk.
- Stand-by antibiotic therapy used to treat travelers' diarrhea (TD) is also effective for treatment of cholera in travelers.

Introduction

Cholera is an acute bacterial intestinal infection transmitted mainly through ingestion of contaminated water or food in endemic areas (e.g., Africa and Asia). Risk of cholera is very low in travelers. In otherwise healthy travelers, clinical disease most often mimics other causes of TD; severe cholera is uncommon. Cholera is especially responsive to proper rehydration and antibiotic therapy used to treat other causes of travelers' diarrhea.

Risk Areas

Cholera occurs mainly in developing countries with inadequate sanitation and lack of clean drinking water, as well as in developed countries where infrastructure may have broken down due to war or natural disasters. Cholera is endemic in Africa and South and Southeast Asia, where focal outbreaks often occur. Recent outbreaks have occurred in the Democratic Republic of the Congo, the Horn of Africa, and Yemen. In 2020, more than 300,000 cholera cases (including more than 800 deaths) were reported from 27 countries, with 85% of cases reported from Yemen. A large number of cases from India, Pakistan, and Bangladesh are not officially reported to WHO.

Cholera is rarely reported in travelers. In the US (where a cholera vaccine was not available from 1999 through late 2016), only 42 cases (mostly imported from Haiti) were reported in 2011, and fewer than 25 cases per year have been reported since 2012.

Transmission

Cholera is mainly acquired from drinking water in which the bacteria is naturally found or through the inadvertent consumption of fecally contaminated water or food (all types of food can be contaminated by infected food handlers). The bacteria that cause cholera are also found in fresh and brackish waters, where they attach to the shells of crustaceans (such as shrimp, crabs, and lobsters), aquatic plants, and to the skin of fish, which are potent sources of infection if inadequately cooked. Person-to-person transmission is rare.

Risk Factors

Risk is very low for travelers, but the following circumstances increase the likelihood of infection:

- Ingestion: eating or drinking fecally contaminated food or water or consuming high-risk foods such as raw fish dishes (e.g., ceviche) and inadequately cooked (e.g., steamed) shellfish
- Travel in areas of active transmission with limited access to safe food and water, even for short stays (i.e., less than 2 weeks)
- Occupation: aid and refugee workers (including HCWs) handling patients with cholera

- Seasonality/intensity: In endemic areas of India and Bangladesh, cholera is more common during the hot season (before the rainy season begins) and at the start and end of the rainy season in areas where cholera has recently been introduced.
- Travelers who are visiting friends and relatives in an outbreak area

Risk of acquiring cholera or having severe disease is increased in persons with blood type O, low gastric acidity (from antacids or partial stomach removal), chronic medical conditions (such as heart or kidney disease), or HIV coinfection; in travelers visiting friends and relatives in the family's country of origin; in travelers without access to appropriate medical care or who are unable to adhere to food and beverage precautions; in nonbreastfed infants and young toddlers; and in pregnant women (including increased risk of fetal loss due to severe dehydration).

Travelers on typical tourist itineraries with standard accommodations, who observe appropriate safe food, water, sanitation, and handwashing precautions, are at almost no risk of clinical cholera, even in highly endemic countries.

Symptoms

In otherwise healthy travelers, infection is usually mild and symptoms resemble those of watery TD.

Symptoms most commonly develop between a few hours and up to 5 days (typically 2-3 days) following exposure and include acute, watery diarrhea (rice-water stools flecked with mucus); nausea and vomiting can also occur. Severe cholera in travelers is very rare but can occur with diarrhea volumes up to 1 L (1 qt) per hour.

Consequences of Infection

Serious illness rarely occurs, but complications relating to dehydration can include rapid heartbeat, dry skin and mucous membranes, low blood pressure, extreme thirst, altered mental status, and muscle cramps. Rapid loss of bodily fluids leads to severe dehydration, shock, and death within hours, although with proper rehydration, the death rate is less than 1%.

Need for Medical Assistance

Travelers who develop symptoms of cholera should maintain hydration by drinking fluids (intake should match fluid losses) and seek urgent medical attention. If the diarrhea causes dehydration, any commercially available oral rehydration solution containing glucose, sodium chloride, potassium chloride, and sodium bicarbonate (to be dissolved in safe drinking water) should be taken. Persons who develop moderate-to-severe symptoms of cholera (i.e., watery diarrhea) during travel or upon return from risk areas may also self-treat with antibiotics that were prescribed for TD during the pretravel visit, or seek immediate medical attention. A single dose of an appropriate antibiotic may reduce fluid requirements and the duration and severity of illness. Zinc supplementation (in children aged 6 months through 5 years) reduces the severity and duration of cholera and other diarrheal diseases in children in resource-limited areas.

Prevention

Nonvaccine

Observe strict food and beverage precautions and hand hygiene (frequent, thorough handwashing), regardless of vaccination status. According to all authoritative guidelines, these measures are essentially 100% effective in typical travel situations. See ***Food and Beverage Precautions***.

Aid and refugee workers (including HCWs) handling patients with cholera should shower and change clothes at the end of their shifts.

Vaccine

Vaccination is not recommended for general travelers (for whom risk is very low, even in countries where cholera epidemics occur) and is only recommended for aid and refugee workers (including HCWs) and certain vulnerable populations (see Risk Factors) traveling to areas with very acute and as-yet-uncontrolled epidemics and who are at immediate direct risk of exposure to epidemic cholera.

An oral cholera vaccine (Vaxchora; contains live, weakened bacteria) for persons aged 2-64 years is approved in the US. Several cholera vaccines (including Dukoral) for persons 1 year and older are available outside the US.

Vaccination is not 100% effective, hence the need for food and beverage precautions. Duration of vaccine protection against cholera is 3 to 6 months for the US vaccine and 6 months to 2 years for non-US vaccines.

Side Effects

The most common side effects of the US cholera vaccine are usually mild and include fatigue, headache, abdominal pain, nausea, vomiting, lack of appetite, and mostly mild diarrhea; common side effects of the non-US vaccine include mild GI symptoms and fever.

Persons with underlying medical conditions or who have concerns about the vaccine should speak to their health care provider before vaccine administration.

Timing

Avoid all food and drink from 1 hour before until 1 hour after receiving a dose of cholera vaccine.

The US vaccine (Vaxchora) is given as follows:

- Travelers aged 2-64 years: 1 age-appropriate oral dose at least 10 days prior to possible exposure.

A booster may be given every 2 years if at continued risk.

The non-US vaccine available in more than 60 countries (Dukoral) is given as follows:

- Travelers aged 2-5 years: 3 oral doses given at an interval of 1 to 6 weeks between doses and completed at least 3 weeks prior to possible exposure
- Travelers 6 years and older: 2 oral doses given 1 to 6 weeks apart and completed at least 1 week prior to possible exposure
- A booster dose is given every 6 months (for children aged 2-5 years) or every 2 years (for persons 6 years and older) if at continued risk.

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