

Legionella Infection

Traveler Summary

Key Points

- Legionella infection is a bacterial infection of the lungs that occurs worldwide and is acquired through inhalation of aerosolized water droplets from infected artificial water sources, such as water heating and storage tanks, air conditioning and cooling systems, whirlpool baths, shower heads, and fountains.
- Risk is increased for travelers going to affected countries who stay in congregate settings, such as cruise ships, convention centers, or low-cost hotels with air conditioning during warm weather, or who sit in or around whirlpool baths and use other artificial water sources.
- Symptoms include high fever, chills, headache, muscle aches, cough, difficulty breathing, and chest pain.
- Consequences of infection include severe pneumonia with respiratory failure, multiorgan damage, and death.
- Prevention includes avoiding risk exposures.
- No vaccine or preventive drugs are available.

Introduction

Legionella infection, which causes Legionnaires' disease, is a bacterial infection of the lungs that occurs worldwide. The bacterial organism is commonly found in freshwater and moist soil but is also found in infected artificial water sources that travelers may encounter. One in 5 cases in North America and Europe are associated with recent travel, whether domestic or foreign.

Risk Areas

Legionnaires' disease is common in Australia, New Zealand, Scotland, North America, and Europe. Clusters of cases from hotels and cruise ships have been reported following holidays in all European Mediterranean countries, several Caribbean Islands, and many international tourist destinations. Outbreaks of *Legionella* have also occurred in other countries, including Japan (in 2016), where people were infected after visiting an onsen that had indoor and outdoor bathing facilities supplied by hot springs. In 2017, in the first outbreak reported from the Middle East, cases of Legionnaires' disease associated with commercial accommodation were reported in travelers returning to Europe from Dubai.

Transmission

Legionnaires' disease is transmitted via inhalation of aerosolized water droplets from infected artificial water sources such as water heating and storage tanks, tap water used for drinking, air conditioning and cooling systems, whirlpool baths, shower heads, fountains, water cooling towers (whose fine aerosol stream may spread over a large area), and nebulizers (including those in hospital ventilation machines).

Legionnaires' disease often occurs as an outbreak or a cluster of a few cases among people gathered for a common purpose in a hotel, convention center, or cruise ship. The water source can remain infectious for months or years, until it is sterilized.

Risk Factors

Risk is increased for persons

- who are male (2-3 times more susceptible to Legionella infection than women).
- who are aged 40-70 years.
- who smoke or who drink too much alcohol.
- who have a chronic disease, such as diabetes or a weakened immune system.
- who travel to conventions, stay in low-cost hotels with air conditioning during warm weather, or sit in or around whirlpool-type baths (e.g., spa pools, whirlpool baths, hot tubs, Jacuzzi, etc.).

Legionella infection does not seem to be associated with freshwater sports or canoeing.

Symptoms

Symptoms include high fever, chills, headache, muscle aches, respiratory symptoms (cough and difficulty breathing), and chest pain. Confusion and diarrhea occur in one-third of cases.

Consequences of Infection

Legionella infection can lead to severe pneumonia and death and can cause neurological, cardiac, and kidney damage. Death occurs in about 5% to 40% of cases, depending on how quickly the infection is diagnosed and appropriate treatment is given.

Need for Medical Assistance

Travelers who develop a high fever or signs of pneumonia during or after travel should seek immediate medical attention. Persons who become infected are likely to become very ill quite quickly, and antibiotic treatment and hospitalization are needed.

Prevention

Nonvaccine

Avoid whirlpool-type spas and other risk behaviors described above.

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