

Legionellosis

[Introduction](#)

[Epidemiology](#)

[Risk for travellers](#)

[Transmission](#)

[Signs and symptoms](#)

[Treatment](#)

[Prevention](#)

[References](#)

[Reading list](#)

[Links](#)

Introduction

Legionellosis refers to clinical syndromes caused by the Gram-negative rod, *Legionella*. The most common syndrome is pneumonia. *Legionella* have been identified in industrialised countries worldwide and occur sporadically and as localised outbreaks. There are more than 40 species of the genus *Legionella*, but the main species that causes disease is *L. pneumophila* of which there are 18 serogroups. *Legionella* are widely distributed in the environment and can be found in still water, hot and cold water systems, and water in air conditioning units. Humans acquire disease by breathing in aerosols from a contaminated water source. The bacteria acquired the name *Legionella* based on the first recorded outbreak of the disease during an American Legion convention in Philadelphia, USA in 1976. Legionnaires' disease is the name given to syndrome of pneumonia.

Epidemiology

(Data from the [Travel Health Surveillance Section](#) of the Health Protection Agency Communicable Disease Surveillance Centre)

Global Epidemiology

Legionellosis Risk in UK Travellers

Risk for Travellers

More than 300 cases of Legionnaires' disease are reported to the National Surveillance Scheme for Legionnaires' disease in Residents of England and Wales each year. Just under half of these are associated with overseas travel. The major risks to travellers are through exposure to contaminated air conditioning systems and showers in hotels, camp sites, cruise ships, etc. Outbreaks have also been traced to inadequately treated whirlpools, hot tubs and spas. The risk in newer hotels may be less due to installation of plumbing designed to be appropriate to demand and use, although correct maintenance of the hot and cold water systems is critical to the control and prevention of Legionella infection.

Transmission

Legionellosis is spread through air from a water source that has become aerosolised. Person to person transmission has not been reported.

In order to be a hazard to human health, *L. pneumophila* needs to be present in the environmental source in significant numbers. This only occurs when water temperatures are greater than 20°C.

Signs and Symptoms

The average incubation period for Legionnaires' disease is between two and ten days. Illness begins acutely with fever, muscle aches, headache, and a dry cough and shortness of breath. Diarrhoea, vomiting, confusion and delirium can also be present. Most patients will improve with support and antibiotics; however, severe illness resulting in respiratory failure and shock can develop, especially in the elderly and those with pre-existing lung disease or with chronic illness. The mortality rate in otherwise healthy persons is 10% to 15%.

A non-pneumonic form of legionellosis also occurs and is known as Pontiac fever. This is a flu-like illness with a shorter incubation period of 12-48 hours. It is usually a self-limited illness.

Treatment

It is difficult to differentiate Legionnaires' disease from other types of pneumonia based on clinical grounds. Therefore there should be a high index of clinical suspicion so appropriate treatment can be initiated. The definitive diagnosis must be made by detection or culture of the organism in sputum, finding Legionella antigen in the urine, or detecting specific antibodies in the blood. The urinary antigen detection method will confirm the infection during the acute phase of the illness and is a rapid, easy to use test. A positive result should always be confirmed by the reference laboratory at the Colindale site of the HPA.

Treatment should be initiated with erythromycin, azithromycin or quinolones. Rifampicin can be added in severe illness.

Prevention

There is no vaccine against legionellosis.

There are guidelines in place for ensuring that water systems in hotels and on cruise ships, etc., are regularly checked, cleaned and conform to standards.¹

Travellers should be aware of the possible risk and mode of transmission and seek medical advice if they develop a pneumonia illness suggestive of Legionnaires' disease.

References

1. The European Guidelines for Control and Prevention of Travel Associated Legionnaires' disease. Available at www.ewgli.org/guidelinedownload/

Reading List

Ellis CJ, Chapman ALN. Bacterial infections in travellers. In Zuckerman JN, editor. Principles and practice of travel medicine. Chichester: John Wiley & Sons Ltd; 2001.

Links

Health Protection Agency-
http://www.hpa.org.uk/infections/topics_az/legionella/menu.htm