

Legionnaires' Disease (LD)

GP Fact sheet

Introduction

Legionellosis may have two distinct clinical presentations: Legionnaires' disease (L.D.) and Pontiac fever. L.D. is characterised by severe (atypical) pneumonia, commonly caused by the species *Legionella pneumophila*. Pontiac fever is a less severe, acute-onset, 'flu-like, non-pneumonic and self-limiting illness.

Risk Groups

Anyone can develop L.D. but, the elderly, cigarette smokers, heavy drinkers, persons with chronic lung conditions, persons with immunocompromising conditions and persons receiving immunosuppressive drugs are all at increased risk. Pontiac fever most commonly occurs in people who are otherwise healthy.

Clinical Features

Symptoms can include; fever, headache, abdominal pain, diarrhoea, non-productive cough or pneumonia. Incubation periods: L.D.: 2 to 10 days; Pontiac fever : a few hours to 2 days.

Incidence

Legionella can cause severe community acquired pneumonia with a significantly high mortality rate. Most Legionnaires' disease cases are sporadic, while 10-20% can be linked to outbreaks.

Diagnosis

A rapid urine antigen test or an antibody blood test are available. Please consult your local laboratory for information on sending specimens for legionella investigations.

Treatment

Erythromycin is the antibiotic currently recommended for treating persons with L.D. In severe cases, a second additional drug rifampicin may be used. Other antibiotics are available for patients who are unable to tolerate erythromycin. Pontiac fever requires no specific treatment.

Notification

Legionnaires' disease is a statutorily notifiable disease. Ireland is conspicuous by its low rate of notification. This suggests that a major degree of under-diagnosis and thus, under-reporting of L.D. currently exists in Ireland. Delay of appropriate therapy can result in poor outcome and notification of a case can lead to detection of environmental sources and prevention of further cases.

Natural History of Legionella

Legionella is a group of bacteria commonly found in low, harmless numbers in water, including tap water, but they can multiply to high levels in stagnant water, especially in water temperatures in the range 20°C to 45°C. These organisms do not appear to multiply below 20°C and do not survive above 60°C. They may however, remain dormant in cool water and multiply when temperatures reach a suitable level. Chlorination of water supplies does not guarantee elimination of *Legionella* bacteria.

Recognised and potential sources of *Legionella*:

- Hot and cold water systems
- Cooling towers and evaporative condensers (in air-conditioning systems)
- Respiratory and other therapy equipment
- Spa pools / natural pools / thermal springs
- Fountains / sprinklers
- Humidifiers for food display cabinets
- Water cooling machine tools
- Vehicle washer/carpet cleaner/ultrasonic misting machine/sump pump.

What they have in common is a combination of high temperature and potential for aerosol formation.

Methods of Transmission

Legionnaires' disease is normally acquired through the respiratory tract by inhalation of a contaminated aerosol. Aspiration of water contaminated with *Legionella* has also been described as a route of transmission. This may occur predominantly in persons with swallowing disorders, or in conjunction with naso-gastric feeding. Person to person transmission has never been documented.

Prevention of Legionellosis

Improved design and maintenance of cooling towers and plumbing systems to limit the growth and spread of *Legionella* organisms are the foundations of legionellosis prevention.

During outbreaks, Public Health Department investigators seek to identify the source of disease transmission and recommend appropriate prevention and control measures such as decontamination of the water source.

Greater attention should be given to notification of L.D.

Rapid detection and notification of travel related legionellosis is needed to identify potentially preventable disease transmission.

