# Legionella Disease

Legionella is a gram-negative bacilli named after an outbreak among people attending a convention of the American Legion. Legionella causes two distinct forms of disease including Legionnaires disease and Pontiac fever. Patients with Legionnaires' disease typically present with high fever and chills with occasional diarrhea and vomiting. Laboratory tests can show elevated liver enzymes with hyponatremia. Kidney derangements are also common including type IV renal tubular acidosis. Chest X-rays often show a severe atypical pneumonia with bi-basal consolidation. Pontiac fever is also caused by this organism but produces a milder respiratory illness without pneumonia. Clinical presentation of Pontiac fever typically resembles an acute influenza. Fluoroquinolones and macrolides can be used as treatment.




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## Signs and Symptoms

**High Fever**
Fever-beaver
High fever is a common symptom of Legionnaires' disease.

**Diarrhea**
Toilet
Diarrhea is commonly seen in Legionnaires' disease.

**Increased Liver Enzymes**
Up-arrow Liver Enzymes
Laboratory tests often demonstrate increased liver enzymes in Legionnaire's disease.

**Hyponatremia**
Hippo-salt-shaker
Hyponatremia is a common finding on laboratory tests, often as a result of kidney derangements.

**Type IV Renal Tubular Acidosis**
Kidney playing Tuba with Acidic-lemon and (4) Fork
Type IV renal tubular acidosis is often caused by an aldosterone deficiency or resistance. Legionella can produce interstitial kidney disease that destroys the juxtaglomerular apparatus, decreasing the ability to secrete renin. Due to a decrease in renin, there is an aldosterone deficiency, leading to Type IV renal tubular acidosis.

**Severe Atypical Pneumonia**
A-tipi X-ray Screen on Nude-Mona
Legionnaires' disease causes severe atypical pneumonia with bi-basal consolidation.

**Pontiac Fever**
Pontiac-car
Pontiac fever is also caused by this organism but produces a milder respiratory illness without pneumonia. Clinical presentation of Pontiac fever typically resembles acute influenza.

## Treatment

**Fluoroquinolones**
Flower-queen
Fluoroquinolones are a family of broad-spectrum antibiotic drugs that commonly end with the suffix "floxacin," like ciprofloxacin and moxifloxacin. These drugs are bactericidal and eradicate bacteria by interfering with DNA replication. Fluoroquinolones can be used in the treatment of Legionella.

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**Macrolides**

Macaroni-lights

Macrolides are a group of antibiotics whose activity stems from the presence of a macrolide lactone ring. Commonly used macrolides include erythromycin, azithromycin, and clarithromycin. As a class, these drugs bind to the 23S rRNA of the 50S prokaryotic ribosomal subunit and inhibit protein synthesis via the blocking of translocation. They can be used in the treatment of Legionella.

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