

Legionnaires' disease

Legionellosis or **Legionnaires' disease** is an acute febrile disease caused by G- bacteria of the family *Legionellaceae*, most commonly *Legionella pneumophila*, which mainly affects the respiratory tract. The most serious and at the same time the most common manifestation is pneumonia („**Legionnaires' disease**“). Other manifestations of infection can be a mild flu-like illness with headaches and muscles without lung involvement („**pontiac fever**“).

Legionellae are commonly found in water and soil. It is transmitted by air conditioning, ventilation, nebulizers, water supply networks, but also fountains, etc. Infection occurs mainly by inhalation of contaminated aerosol. Human-to-human transmission has not been demonstrated.

The disease was first described in members of the American Legion (hence the name) in Philadelphia in 1976. Retrospective research later found cases of Legionnaires' disease as early as 1943.

Etiology

The G- rod, most often *Legionella pneumophila*, has multiple serotypes, the natural habitat for it is water and humid environments (marshes and musty), requires moisture.

Epidemiology

Found in lakes, rivers, in air conditioning, in showers. Infection through inhalation of aerosol with legionella. Human-to-human transmission not proven. More often affected are the elderly, patients with immunodeficiency or chronic lung disease. Mortality – 25%.

Clinical picture

It may resemble pneumococcal pneumonia with myalgia, headaches, fever and dry cough. Other symptoms from other systems such as diarrhea, abdominal pain, confusion, ataxia, often renal insufficiency – proteinuria and hematuria occurs with the progression of the illness. Rarely, it can proceed even without inflammation of the lungs, more often in smokers, alcoholics.

Diagnosis

The evidence of antigen is not from the lungs, but from the urine.

In history – stay in air-conditioned facilities (hotels, restaurants) abroad.

The X-ray finding is initially a one-sided spotted segmental or lobar infiltrate. Subsequently, it progresses bilaterally, often with pleural effusion or abscess, mild leukocytosis, elevated liver enzymes.

Demonstration of *Legionella pneumophila* antigen in urine. Cultivation of material from bronchoalveolar lavate or tracheal aspirate on BCYE agar or PCR.

Therapy

- **Pontiac fever** – only symptomatic treatment.
- **Legionnaires' disease** – ATB therapy; most often parenterally macrolides (clarithromycin, azithromycin^[1]) or fluoroquinolones (ofloxacin, ciprofloxacin).

The bacterium often produces β -lactamase, it is not advisable to use penicillin derivatives^[1]

Prevention

Technical inspections of distribution systems, membrane filters, water overchlorination, overheating to 70 °C

Links

External links



Legionella pneumophila in electron microscope



Legionella sp.

- Legionella.cz (<https://legionella.cz/>) – czech informative project
- Legionela – dezinfekce teplé vody a vzduchotechniky (<http://www.e-dezinfekce.cz/legionela-chlordioxid/>) (commercial sites)

Source

- BENEŠ, Jiří. *Study materials* [online]. [cit. 2010]. <<http://jirben.wz.cz>>.

Literature used

- HAVLÍK, Jiří. *Infektologie*. 2. edition. Praha : Avicenum, 1990. 393 pp. ISBN 80-201-0062-8.
- LOBOVSKÁ, Alena. *Infekční nemoci*. 1. edition. Praha : Karolinum, 2001. 263 pp. ISBN 80-246-0116-8.
- BENEŠ, Jiří. *Infekční lékařství*. 1. edition. Galén, 2009. 651 pp. ISBN 978-80-7262-644-1.

References

1. JULÁK, Jaroslav. *Úvod do lékařské bakteriologie*. 1. edition. Praha : Karolinum, 2006. 404 pp. pp. 274. ISBN 8024612704.