

Legionella  
[created by  
Paul Young  
02/10/07]

### definition

a disease caused by Legionella pneumophila which causes clinical illness ranging from mild cough and low-grade fever to stupor, respiratory failure and MOF  
extrapulmonary Legionella causing myocarditis, pericarditis, prosthetic endocarditis, sinusitis, cellulitis, pancreatitis, peritonitis & pyelonephritis have all been described

### aetiology

Legionella pneumophila is a common cause of community acquired pneumonia & accounts for 2-15% of all community acquired pneumonia; it is also a cause of nosocomial pneumonia  
risk factors are:  
1. smoking  
2. chronic lung disease  
3. immunosuppression (esp with corticosteroids)  
4. surgery is the major risk factor for nosocomial infection with transplant recipients at the highest risk  
transmitted for inhalation of aerosols containing Legionella or microaspiration of water contaminated with Legionella  
may be contracted from handling contaminated soil or from contaminated air conditioners

### symptoms

early symptoms include:  
- fever  
- malaise  
- myalgias  
- anorexia  
- headache  
cough is only slightly productive; may be haemoptysis  
chest pain may be predominant and can be pleuritic  
GI symptoms are prominent with watery diarrhoea occurring in 40%

### signs

temperature often exceeds 40  
clinical signs of pneumonia - often bilateral

### investigations

Bloods:  
- hyponatraemia is more common than other forms of pneumonia  
- CK is often elevated  
- LFTs may be mildly deranged

#### CXR

- symptoms may precede CXR infiltrate  
- 1/3rd of patients have pleural effusion  
- immunosuppressed patients (esp those on steroids) develop distinctive nodular opacities which expand & cavitate

#### Sputum specimen

- diagnosis is suggested by leucocytes with an absence of organisms seen on gram stain

#### Special tests:

1. urinary Legionella Ag  
- only detects serogroup 1  
- sensitivity is 70% & specificity approaches 100%
2. Legionella serology  
- requires acute and convalescent specimen
3. PCR on BAL
4. direct staining

### treatment

1. antibiotic therapy  
- erythromycin is historically drug of choice but newer macrolides (esp azithromycin) have superior in vitro activity and tissue penetration. Azithromycin, clarithromycin & roxithromycin have all been used  
- quinolones are effective and given interaction of macrolides with immunosuppressives, they are first choice in transplant patients  
- therapy can be changed to oral when patient is afebrile for 48hrs. Total therapy should be 10-14 days. 21 days is recommended for severe disease and in immunosuppressed patients