

Mycoplasma Pneumonia

Lack a rigid cell wall , **resistant** to penicillins & cephalosporins , Plasma membrane (outermost layer) contains **Sterol** , Facultative anaerobes , Require **cholesterol** for growth (**Eaton's agar**) , colonies characteristic is "**Fried egg**" appearance , transmitted by **droplets** , **Mycoplasma pneumonia** is the most common cause of atypical pneumonia & the most common cause of pneumonia in people between the ages of 5 to 15 years , no need for bed rest "walking pneumonia" , autoantibodies are produced against red cells (**cold agglutinins**) : **IgM** cross react with antigen (binding triggered by low temp & causes hemolysis) . **Serologic** testing: is the mainstay of diagnosis. **a)** Fourfold or greater rise in **specific IgM** antibody titer. **b)** A cold-agglutinin test (**non specific**) , here direct smear is not useful , & to treat use macrolide (erythromycin) or tetracycline

Chlamydia

obligate **intracellular** bacteria , cell walls **resemble** gram-ve bacteria but **lack** muramic acid , not stained with gram stained but with **Giemsa** , it's **special** replicative cycle has 2 forms : reticulate (infective) and elementary (replicative) bodies, which appear as **intracytoplasmic** inclusion body within the host cell.

Psittacosis is a disease of **birds** , infected (**Zoonosis**) by inhaling contaminated dry bird feces , so in human psittacosis there is **NO** person to person transmission.

Chlamydomydia pneumonia infects only **human** and transmitted from **person** to person by inhalation , leading cause of **community** acquired pneumonia especially in **elderly**. **Diagnosis** : Direct fluorescent antibody test, PCR , cell cultures, cytoplasmic inclusions can be seen with **Giemsa** stain

Legionellae Pneumonia

Aerobic G-ve bacilli, best stained with **silver stains** , Grow on complex media as buffered charcoal - yeast extract agar (**BCYE**) , special medium with iron and cysteine , Oxidase & Catalase +ve , L. pneumophila causes both community & hospital acquired pneumonia, Legionellae are with environmental water sources , outbreaks due to **inhalation of aerosols** , **NO person to person spread** , in old smokers & immune comprised , **Legionnaire's disease** : Fever, chills, malaise , GIT & Neurological symptoms . **Pontiac fever** : **doesn't** result in pneumonia . **Diagnosis** : Direct fluorescent antibody test (**FAT**) of sputum specimen & a Urinary antigen test , & PCR & **BYCE** culture

Coxiella Burnetii

One of **Rickettsial** groups, obligate **intracellular** organisms, cell wall resembles gram -ve rods, best stained with **Giemsa** Highly resistant (**biological weapon**) , 2 antigenic forms, **phase I (virulent) & phase II (avirulent)**. **Q fever** is a **zoonosis**. The reservoirs and sources of human infections are cattle , **C. burnetii** infections transmitted by **inhalation of animal aerosols** , & is **Not** transmitted by arthropod bite as other Rickettsial , Q fever is usually an **occupational** hazard. **Acute Q fever is (phase II antigen)** . **Note** : combination of **pneumonia** and **hepatitis** should suggest **Q fever** , **NO** rash (unlike most other rickettsial diseases). **Chronic Q fever: (phase I antigen)** can be complicated with **endocarditis**. **Serology** is mainstay of **diagnosis** by detection of specific **antibodies** against phase I & II **antigens** & can use **PCR** Prevention through **killed vaccine**