

Epidemiology of Community Acquired Pneumonia



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Pneumon is a Greek word for lungs. Pneumonia is a disease of the lungs. Pneumonia is a common cause of infection related mortality and is one of the most important challenges in clinical medicine. In US alone, 4 million adults are affected each year of which 20% need hospitalization for the management. It is common at both extremes of age and during winter months. In India, rise in pneumonia cases is also noted during monsoon.

Independent risk factors for CAP are alcoholism, tobacco smoking COPD. The rate of pneumococcal pneumonia is upto 40 times higher among HIV infected patients than among age matched patients not infected with HIV. Dementia, cerebrovascular accident, seizures are other risk factor so also diabetes mellitus.

Pneumon is defined as an inflammation of the alveoli, distal airways and interstitium of the lungs. The alveoli are filled with inflammatory exudates with white blood cells, red blood cells and fibrin. Pathologically it is characterized by consolidation. Clinically it is a constellation of symptoms and signs.

Pneumonia which develops outside the hospital is considered as community acquired pneumonia. Pneumonia developing 72 hrs or more after hospitalization is Nosocomial or Hospital Acquired.

Epidemiologically it can be classified as

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| 1. Community acquired pneumonia | CAP |
| 2. Nosocomial or Hospital Acquired Pneumonia | HAP |
| 3. Ventilator Associated Pneumonia | VAP |
| 4. Aspiration Pneumonia. | |
| 5. Pneumonia in immune compromised hosts. | |

The pneumonia can be caused by

Bacterial	} infections
Viral	
Fungal	
and	
Parasitic	

The mortality for non-hospitalized patients is <1% while it rises to more than 30% in hospitalized cases particularly in patients admitted to intensive care unit.

With the globalization, there is increased international travel. Due to worldwide unrest, there is lot of migration. Therefore while managing a case of pneumonia these factors have to be taken in to consideration.

Table 1 : Shows the risk factors for exposure and causative organisms.

Risk factors for exposure	Disease causing organisms (related disease)
Host factors	
<25 years of age	Mycoplasma, Chlam. pneumoniae, Hantavirus
>60 years of age	S. pneumoniae, H. influenzae
Poor dental hygiene	Anaerobes
Smokers	H. influenza, M. catarrhalis
Alcoholism	S. pneumoniae, Kleb. Pneumo. Anaerobes, M TB
Diabetes Mellitus	S. pneumoniae, S. aureus. M TB
COPD	S. pneumoniae, H. influenzae, Pseudo. Aeruginosa, M. catarrhalis
Sickle cell disease	S. pneumoniae
Influenza Epidemic	S pneumoniae, S. aureus, H influenza, influenza viruses
Environmental Factors	
Exposure to contaminated air-conditioning cooling towers, mist machine.	Legionella pneumophila
Expo. to bat caves, excavation	Histoplasma capsulatum
Animal contact	
Expo. to infected cats, dogs, cattles, sheep.	Coxiella burnetii, Q. fever, Brucella sp.
Animal bites	Anthrax, tularemia
Expo. to turkeys, chickens, ducks, or psittacine birds	C, psittaci
Expo. to rodents, water contaminated by animal urine	Leptospirosis.
Travel History	
Travel to southeast Asia	Melioidosis, paragonimiasis.
Travel to southwest America	Coccidiomycosis
Immigrants from Asia, India, Africa.	M. TB
Severe acute respiratory syndrome SARS	Endemic region

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