

Respiratory Infections & Bronchopneumonia

Dr Piyush Tailor

Dr Piyush Tailor
Associate Professor
Government Medical College
Surat



Respiratory tract defences

- Ventilatory flow
- Cough
- Mucociliary clearance mechanisms
- Mucosal immune system

Dr Piyush Tailor

Upper respiratory tract infections

- Rhinitis
 - Rhinovirus
 - Influenza
 - Parainfluenza
 - Non-infective (allergic) rhinitis
- Sinusitis
- Pharyngitis
- Epiglottitis
- Otitis media

Dorothysh Tailor



Laryngitis

- Most commonly upper respiratory viruses
- Diphtheria
 - *C. Diphtheriae*
 - Produces a cytotoxic exotoxin
 - Causing tissue necrosis
 - Membrane cause narrow airway

Dr. Vijaysh Tailor

BRONCHOPNEUMONIA

1. Community- Acquired pneumonia
2. Hospital – Acquired pneumonia (Nosocomial)
3. Aspiration pneumonia
4. Pneumonia in immuno-compromised patient.

Dr Piyush Tailor

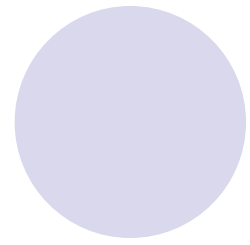
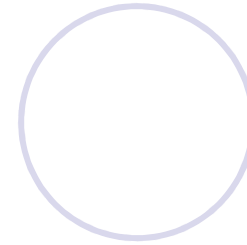
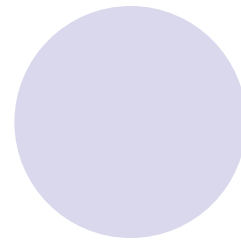
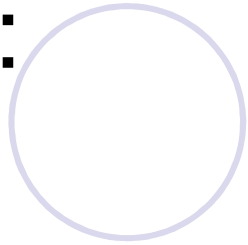
Pneumonia

- Infection of pulmonary parenchyma
- Patchy or Lobular
- Exudative consolidation
- Terminal bronchiolitis
- Consolidation of Peribronchial Alveoli.
- **Severity of illness = Depend on bacteria**


Dr Piyush Tailor

Etiology:

- Bacterial
- Viral
- Fungal
- Protozoal
- Parasitic



Dr Piyush Tailor



Mycobacterial infection	<i>M. tuberculosis</i>
<i>Bacterial infection</i>	<i>Streptococcus pneumoniae,</i> <i>Staphylococcus aureus,</i> <i>Klebsiella pneumoniae,</i> <i>Pseudomonas aeruginosa</i>
Viral Infection	<i>Haemphilus influenzae</i>
<i>Fungal Infection</i>	<i>Pneumocystis carinii</i> <i>Candida albican</i> <i>Histoplasmosis</i>
Parasite infection	<i>Strongyloides stercoralis</i>
Protozoal infection	<i>Toxoplasmosis</i>

- 
- Bronchopneumonia may occur as a complication of some disease.

- Diphtheria
- Measles
- Whooping Cough
- Influenza
- Typhoid & Paratyphoid fever

Dr Piyush Tailor

Predisposing factors:

- **Unable to clear their lungs**
 - Old age
 - Physical weakness
 - Pulmonary fibrosis.
- **Retention of secretions**
 - Most commonly involves the lower lobes.
- **Cilia not functioning**
 - Hereditary dyskinesia – Kartagener Syndrome
 - Cigarette smoking
 - Gas exposure.
- **Alveolar macrophages inability**
 - Alcohol ,Tobacco
- **Bacteria grow within secretions collected in chest.**
 - Chronic bronchitis
 - Cystic fibrosis
 - Malignant tumour.

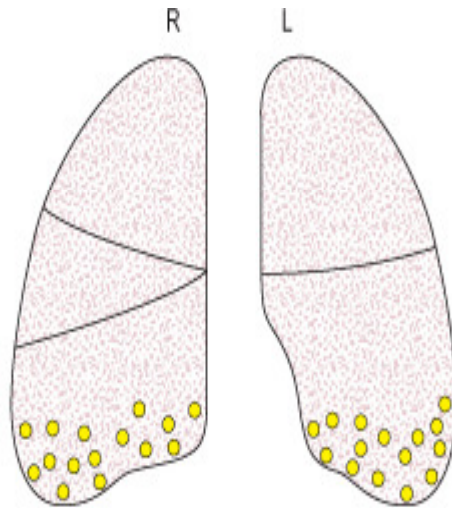


Clinical manifestation:

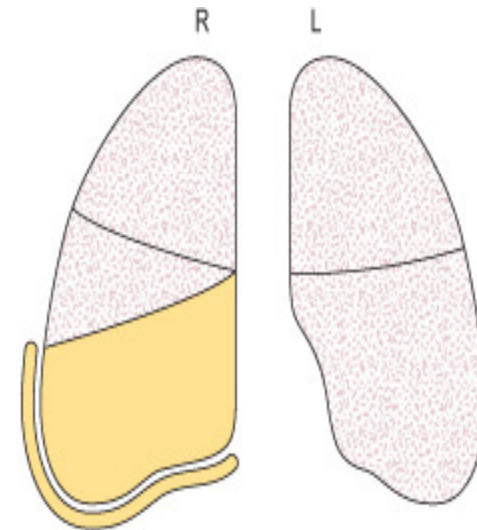
- High Grade Fever with chills
- Cough with Purulent sputum.
- Blood-streaked mucus
- Chest pain
- Chest congestion
- Breathlessness

Dr Piyush Tailor

Pathological description of pneumonia



A Bronchopneumonia



B Lobar pneumonia

Pathogenesis:

- Initial terminal **bronchiolitis**
- Patchy consolidation of **Peribronchial tissue.**
- Bronchioles are plugged by the **swollen mucosa** and their secretion.
- **Air cannot enter** the alveoli.
- **Imprisoned air** in the alveoli is absorbed
- Causing **collapse** of the alveoli.
- Surrounded areas of **compensatory emphysema.**
- **Congestion, Collapse and Emphysema**
- Resolution of the exudate usually restores normal lung structure.
- May result in fibrous scarring in some cases.
- Aggressive disease may produce abscesses.

Complications:

1. Pulmonary fibrosis
2. Bronchiectasis
3. Lung abscess
4. Empyema
5. Bacteraemia with abscess in other organs

Dr Piyush Tailor

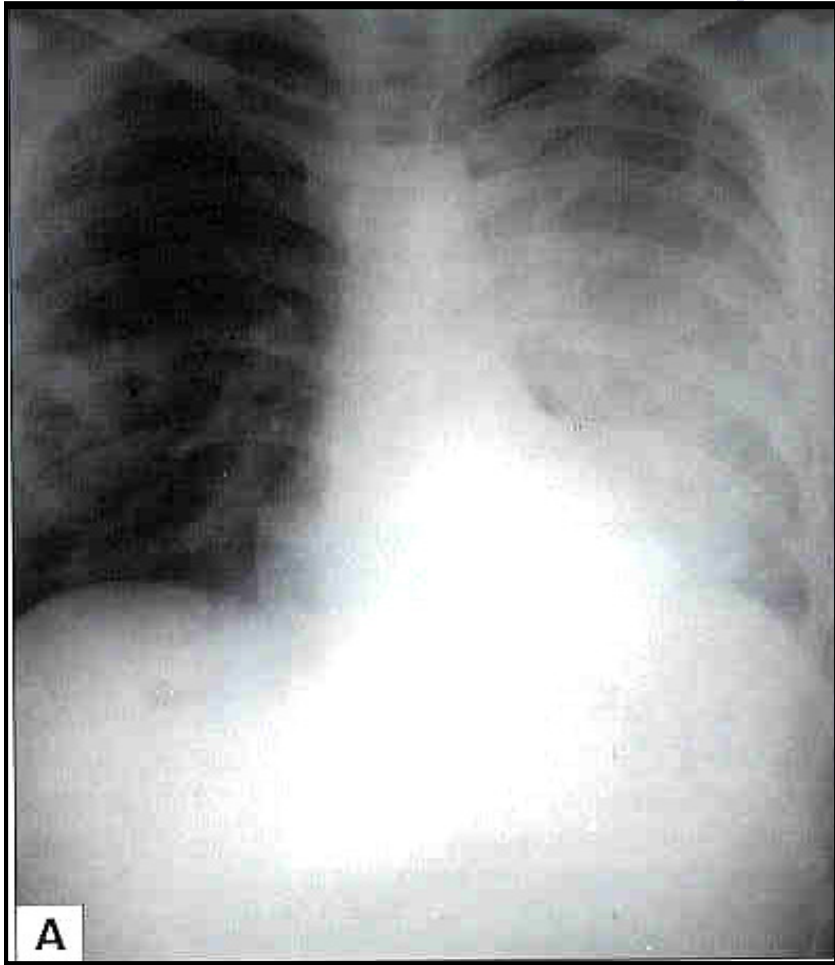


Diagnosis

- Medical history and physical examination
- Complete Blood Count
- Chest X-ray
- Sputum for culture & sensitivity
- CT scan
- Pleural fluid culture

Dr. Piyush Tailor

Pneumonic Patch In X-Ray



Treatment

- Antibiotics.
 - Tetracyclines
 - Fluoroquinolones = Levofloxacin, Gatifloxacin, Ciprofloxacin, Ofloxacin
 - Cephalosporins = Ceftriaxone, Cefixime, Cefoperazone
 - Vancomycin
 - Macrolides = Azithromycin, Erythromycin, Clarithromycin
 - Penicillins
- Additional pharmaceutical intervention
 - Antitussive
 - Expectorant
 - Cough suppressants
 - Pain relievers
 - Fever reducers, such as Acetaminophen or Paracetamol
 - In severe cases, oxygen therapy and artificial ventilation may be required.

ANTITUSSIVE = CODEINE

- = Decreases sensitivity of center for cough
- = Suppressing of irritating non-productive cough
- = Potentiation of suppressive effect of other CNS drugs
- = With opioid analgetics – deepening depression of CNS and breathing center

Other Anti-tissive

Etylmorphine = derivate of morphine similar to codeine,
Dextromethorphan

Dr Piyush Tailor

EXPECTORANTS



Mucolytics and secretolytics – lower viscosity of mucus

BROMHEXINE

- Reduces its viscosity
- Promotes secretion of mucus
- Improves cilliar function

AMBROXOL

N-ACETYLCYSTEINE

Dr Piyush Tailor



Thank You!