

# Pneumonia & Empyema

## Clinical Diagnosis (need all 3)

1. **Respiratory Sx:** cough, SOB, tachypnea, hypoxia
2. **Inflammation:** ↑↓WBC, fever
3. **Imaging:** Opacity



## Treatment

\*if suspecting viral cause or in a flu-season, consider procalcitonin for better antibiotic stewardship

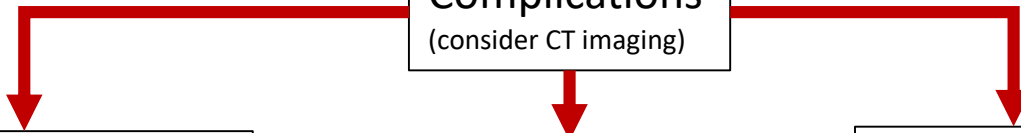
- CAP – Azithromycin/Ceftriaxone (or Levofloxacin)
- HCAP / HAP / Ventilator – Vanc/Cefepime/Zosyn

## Common Bacterial Causes

- Strep Pneumoniae
- Staph Aureus
- Haemophilus influenza
- Aspiration (GNR or anaerobes)
- Alcohol – Klebsiella
- HCAP – MRSA, pseudomonas
- Atypical
  - Mycoplasma
  - Legionella
  - Chlamydia

## Complications

(consider CT imaging)



### Pulmonary

- Organizing PNA (BOOP)
- Lung abscess
- ARDS



### Treatment

- BOOP – biopsy – stop antibiotics - give steroids.
- Abscess – drain
- ARDS – ventilator support



### Light's Criteria (exudate)

- Fluid:serum TP > 0.5
- Fluid:serum LDH > 0.6
- Fluid LDH > 2/3 upper limit normal

### Pleural

- Parapneumonic effusion
- Empyema



### Thoracentesis

- **Light's criteria** will show exudate
  - Total Protein, LDH
- Parapneumonic effusion = no bacteria
- Empyema (abscess in pleural space)



### Empyema

- CT finding - Loculated
- Gross pus during drainage
- +gram stain/culture
- pH < 7.2, glucose <60



### Treatment

- Parapneumonic effusion → Observe.
- Empyema
  - Drain with Chest tube
  - CT surgery (VATS, decortication)

*Garg's  
Simple Medicine*

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