BACK TO

BASICS

PNEUMONIA

BASICS: Usual Suspects

S.pneumoniae

H.influenzae

Legionella sp.

Viruses *(At least 20% of cases)*

BASICS: Signs & Symptoms

- Fever
- Chills
- Productive cough
- Shortness of breath
- Chest pain

AND

Positive radiographic findings (chest x-ray/CT scan)

BASICS: Diagnostic Imaging

- Chest x-ray
- CT Chest (± contrast)
  - Gold standard for diagnostic imaging

Significant findings

- **Consolidations**, **infiltrates**, **airspace disease** – Signify presence of possible pneumonia

BASICS: Clinical Conundrums

	Commonalities	Differences
Asthma exacerbation	Cough Wheeze	No radiographic changes
Bronchitis	Cough Wheeze Fever	No radiographic changes
Heart Failure	Shortness of breath Cough	CXR – Pulmonary venous congestion, interstitial edema, perihilar infiltrates, enlarged cardiac silhouette, effusions *(Clinically: Orthopnea, PND)*
Pulmonary Embolism	Fever Leukocytosis Shortness of breath Hemoptysis	CT – Clot(s) evident on CT (usually presents with parenchymal changes, e.g. airspace opacities/ground glass)
Lung disease (ILD,IPF)	Shortness of breath Cough Wheeze	CXR/CT – Various interstitial findings/chronic changes (e.g. Septal thickening, honeycombing, bronchiectasis) *(Clinically: Unlike CAP, onset is gradual but can exacerbate)*

BASICS: In-Patient Treatment Options

Non-ICU patients

First line

- Amoxicillin-clavulanate

  OR Cefuroxime
- Ceftriaxone

Anaphylaxis to beta-lactams

- Levofloxacin **750mg**

ICU patients

First line

- Ceftriaxone + Azithromycin IV/PO **500mg**

Anaphylaxis to beta-lactams

- Levofloxacin **750mg**

PO Step down

- ✓Able to take PO meds
- ✓Afebrile for 24-48 hours

BASICS: In-Patient Treatment Options

What's with ASP's obsession with amoxicillin-clavulanate?

Spectrum

Covers all typical CAP pathogens (*except atypicals*!)

Safety profile

Favourable compared to fluoroquinolones

Frequency

875 mg/125 mg PO BID (reduced clavulanate component)

What about Cefuroxime?

Reasonable alternative

Growing concern with resistance?

H. influenzae - 18-22%

S. pneumoniae – 12%

BASICS: Common Problems

- Empiric *Pseudomonas* coverage is **inappropriate**
  - Healthcare-associated (HCAP) & Nursing-home associated (NAP) pneumonia are **dead**
  - Not relevant in **overwhelming majority** of community cases
  - 👉 **Therapy should be switched to guideline driven agents (Clavulin, or ceftriaxone)**
- Beta-lactam + Fluoroquinolone combination is **inappropriate**
  - **Significant** overlap in spectrum
  - Poor evidence/justification for inclusion in old (2007) CAP guidelines for ICU patients
  - 👉 **Discontinue fluoroquinolone, continue beta-lactam monotherapy**
- Zpak dosing is problematic
  - Doses of 250 mg too low for *Legionella* (which is it's **ONLY** role in CAP)
  - 👉 **Discontinue, or if *Legionella* is a serious consideration, increase to 500 mg daily**

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BASICS: Treatment Duration

Guidelines: **5-7 days**

Treatment Discontinuation(non-ICU)

Minimum of 5 days, afebrile (<37.8) x 48 hours

PLUS

No more than **one** sign of instability

- SBP < 90 mmHg
- HR > 100/min
- RR > 24 /min
- O2 sat < 90% / PaO2 < 60mmHg on room air

JAMA Intern Med. 2016;176(9):1257-1265

NOT BASIC: Legionella Pneumonia

- Uncommon *(but becoming more common)*
- “Severe pneumonia”
  - ICU admission (75% of cases)
- Increased incidence in summer months
  - Hot & humid weather (i.e. May-October)
- Presentation
  - ?GI symptoms
  - ?Hepatic insult (increased LFTs)
  - ?Elevated CK
  - ?Hyponatremia
  - ?Altered LOC
  - ?Elevated SCr
- Urine Legionella – Detects urinary antigen of *L. pneumophila* serotype 1
  - Responsible for majority (80%) of cases

NOT BASIC: Legionella Pneumonia

Treatment

Consider adding azithromycin IV/PO 500 mg daily if:

- Critically ill (i.e. ICU admission)
- Continued deterioration despite 48h-72h of standard therapy (i.e. beta-lactam)

In **confirmed** *Legionella* pneumonia

- Monotherapy with fluoroquinolone (i.e. Levofloxacin) or macrolides (i.e. azithromycin)

Duration

- 7-10 days
- Longer (i.e. 14-21 days) in severe disease or immunocompromised patients