

Community Onset Pneumonia (CAP) NMH Treatment Guidelines for Non-ICU Patients

Standard CAP therapy is best for most patients who present with pneumonia from home or nursing home.

- Ceftriaxone and azithromycin
- OR
- levofloxacin

This guideline applies to those patients formerly labeled with HCAP (Health Care Associated Pneumonia). HCAP is no longer considered a helpful category to determine antibiotic treatment.

- Anti-pseudomonal rx with anti-MRSA rx is excessively broad therapy for most pneumonia patients who are presenting from home or nursing home.
 - Poorer outcomes if treated for drug resistant CAP
 - Broad antibiotic treatment contributes to drug resistance

Purpose of this guideline: Identify those few with increased risk of drug-resistant pneumonia by risk assessment.

- Gm-negative resistance risk & MRSA risk are not *all* the same so are treated separately (Step 1 and Step 2).

STEP 1:

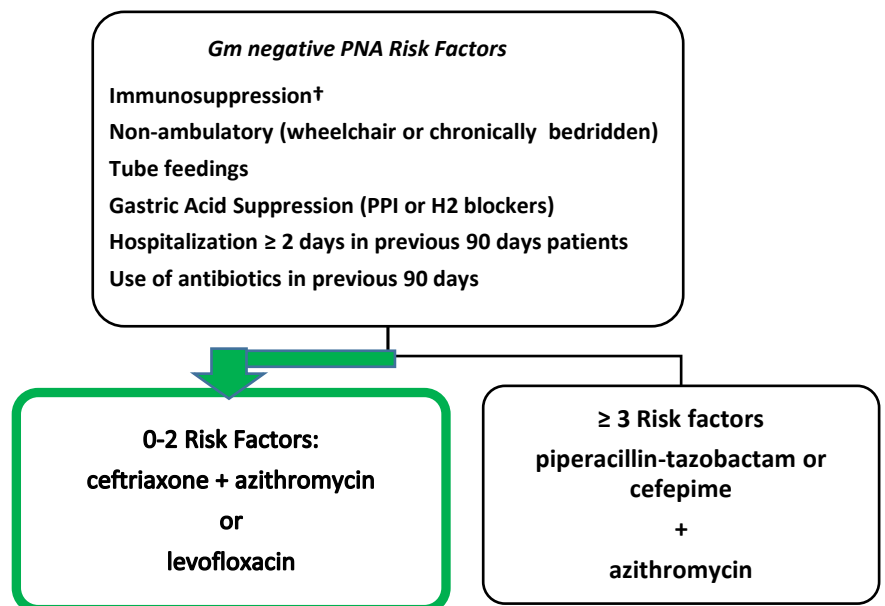
Choose *Standard Empiric CAP Therapy* Or Expanded Gram Negative Therapy¹

†Immunosuppression:

- congenital or acquired immunodeficiency
- hematologic diseases
- treatment with immunosuppressive drugs within past 30 days
- corticosteroids in daily doses of at least 10 mg/day of a prednisone equivalent for more than 2 weeks.
- neutropenia (<1,000 cells/mm³)
 - For chemotherapy-associated neutropenic fever do not use this guideline. Go to neutropenic fever in empiric guideline

Preferred *Standard Empiric CAP Therapy*

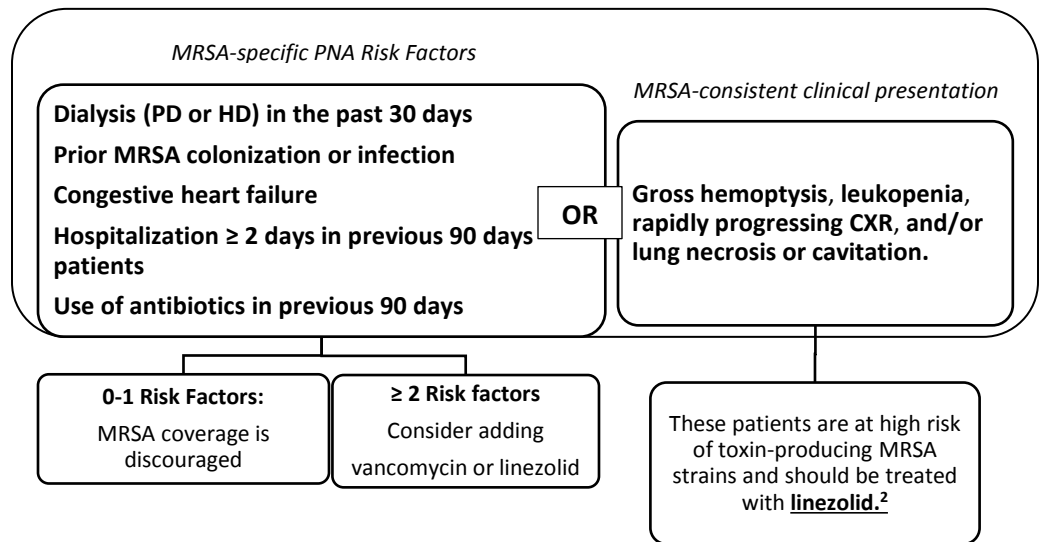
- Is ceftriaxone and azithromycin.
- Levofloxacin monotherapy is chosen if there is history of penicillin or cephalosporin allergy with anaphylaxis or with severe skin reaction OR if treating Legionella pneumonia.



STEP 2:

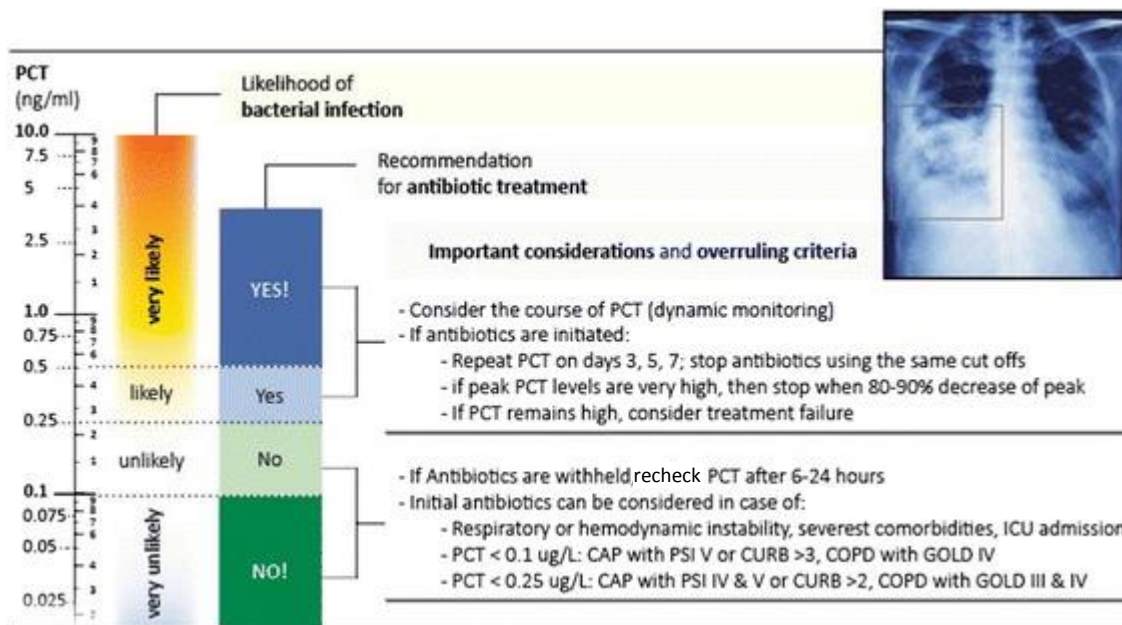
Add Vancomycin or Linezolid?

NOTE: Most patients receiving *Standard CAP Therapy* do not need vancomycin or linezolid.



STEP 3: Early Reassessment:

Is this bacterial pneumonia?



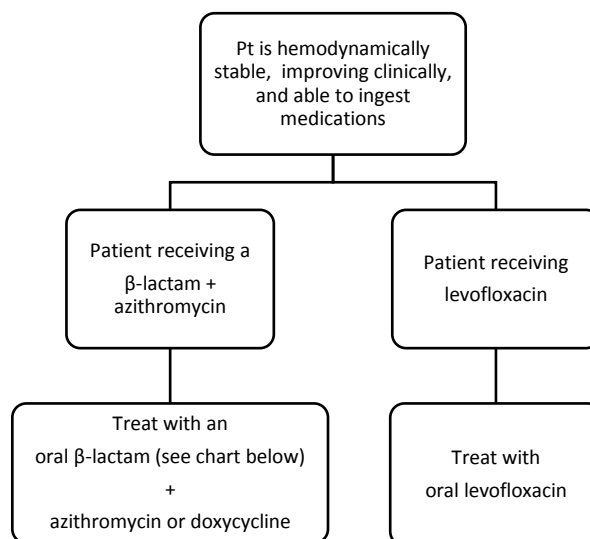
- At day 1-2 of antibiotics, reassess clinical presentation, laboratory data such as respiratory viral panel, pneumococcal urine antigen and Legionella urine ag, and differential diagnosis.
- In CAP, procalcitonin trend can be used as a helpful adjunct to stop unnecessary antibiotics.
- Two procalcitonin serum levels should be drawn.
 - The first should be measured at pneumonia diagnosis.
 - The second is drawn 8 to 12 hours later.
- Normal procalcitonin is <0.01 ng/mL.
- Procalcitonin is often elevated (>0.25) and/or trending up in the first hours of hospitalization in bacterial pneumonia.
- A repeatedly low procalcitonin <0.1 is suggestive of a viral pneumonia or alternative diagnosis^{3,4,5}. Consider discontinuing antibiotics.

Limitations of PCT ^{6,7,8}:

- False positive and false negatives can occur with any test and clinical context should guide interpretation if PCT results.
- There are some situations where PCT can be elevated due to non-bacterial causes:
 - Renal insufficiency: Baseline values, in the absence of infection, can rise to 1.5 ng/ml in ESRD (CrCl less than 30 ml/min) prior to initiation of dialysis; during regular hemodialysis, in the absence of infection, baseline values may be as high as 0.5 ng/ml⁶.
 - Massive stress, such as after severe trauma, surgery or in patients with cardiac shock.
 - Graft-versus-host disease.
 - Autoimmune diseases such as Kawasaki disease and Systemic lupus erythematosus (SLE).
 - Different types of immunotherapy such as; granulocyte transfusions and the administration of antilymphocyte globulin or anti-CD3 antibodies.

STEP 4: De-escalation to oral therapy

| Oral Antibiotic Selections | | |
|----------------------------|--------------|---|
| Drug | Dose | Duration |
| Amoxicillin/Clavulanate XR | 2000 mg Q12H | Total 5-7 days of antibiotics (IV and Oral) |
| Amoxicillin | 1000 mg Q8H | |
| Cefuroxime | 500 mg Q12H | |



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