## Community Acquired Pneumonia II

**David Glaser, MD**

- Infectious Diseases Society of America (IDSA) guidelines do not support withholding antibiotics for community acquired pneumonia (CAP) based on a low procalcitonin level.
- The IDSA has "major and minor" criteria for pneumonia. Pneumonia can be diagnosed with either one major criterion **or** three or more minor criteria.
    - **Minor criteria**
        - Respiratory rate > 30 breaths/min
        - $PaO_2/FiO_2$ ratio < 250

- Multilobar infiltrates
- Confusion/disorientation
- Uremia (blood urea nitrogen level > 20 mg/dl)
- Leukopenia (WBC < 4,000 cells/µL)
- Thrombocytopenia (platelet count 100,000 cells/µL)
- Hypothermia (core temperature<36.8C)
- Hypotension requiring aggressive fluid resuscitation

- **Major criteria**
  - Septic shock with need for vasopressors
  - Respiratory failure requiring mechanical ventilation
  - Leukopenia *due to infection alone* (ie, not due to chemotherapy)

- The IDSA suggests sending Legionella urinary antigen:
  - in adults with severe CAP, and
  - when indicated by epidemiological factors, such as association with a Legionella outbreak, or recent travel.
- Not all admitted patients with pneumonia need blood cultures
- During flu season the IDSA guidelines suggest testing for influenza in all community acquired pneumonia cases, even in those accompanying COPD exacerbations, and treatment of all patient testing positive, regardless of duration of illness.
- The PSI or Port Score is suggested to aid in decision making for disposition.
  - MDCalc: PSI/PORT Score: Pneumonia Severity Index for CAP
- Latest treatment recommendations

**PEARLS**

- Antimicrobial therapy is now recommended for just 5 days (longer 7-14 day courses are discouraged)
- No longer does the IDSA recommend additional coverage for suspected aspiration in patients with CAP.
- Steroids are not indicated for CAP alone, but are safe in patients with other indications for steroids (eg, COPD exacerbation).

- Azithromycin as a single agent is not recommended for the treatment of pneumonia
  - > 25% Streptococcus pneumoniae resistant rate
- For patients with CAP **without** comorbidities being discharged home
  - Amoxicillin 1 gram PO Q8H for 5 days
  - AND
  - Doxycycline 100mg PO Q12H for 5 days
- For patients with CAP **with** comorbidities being **discharged home** combination therapy:
  - Amoxicillin, Amoxicillin/clavulanate or cephalosporin AND macrolide or doxycycline or monotherapy with fluoroquinolone.
  - All regimens below are recommended for 5 days.
  - Dosing options:
    - Amoxicillin
      - Amoxicillin 1000 mg PO Q8H (IDSA rec)
      - Amoxicillin/clavulanate: 500 mg/125 mg PO Q8h , amoxicillin/clavulanate 875 mg/125 mg PO Q12H , or amoxicillin/clavulanate 2 g/125 mg PO Q12H
      - Amoxicillin/clavulanate preferred to amoxicillin in patients with high-risk features or comorbidities
    - Cephalosporins
      - Cefpodoxime 200 mg PO Q12H
      - Cefuroxime 500 mg PO Q12H
    - Macrolides
      - Azithromycin 500 mg on the first day then 250 mg PO daily
      - Clarithromycin: 500 mg PO Q12H,
      - Clarithromycin ER 1 g PO daily
    - Doxycycline 100 mg PO Q12H
    - Fluoroquinolones
      - Levofloxacin 750 mg PO daily
      - Moxifloxacin 400 mg PO daily
      - Gemifloxacin 320 mg PO daily

  - For patients with CAP requiring admission the combination of ceftriaxone azithromycin is still recommended.
  - The IDSA guidelines do not recommend inpatient oral therapy, in contrast to the findings of some recent studies.
  - The guidelines recommend covering MRSA and *Pseudomonas* if:
    - these organisms were cultured from respiratory tract in previous year, or
    - the patient was admitted in the last 90 days and has severe pneumonia.
- The World Health Organization (WHO) recommends antimicrobial therapy in patients with suspected viral pneumonia when it is severe.

## Ricks Rants: RAND Reimbursement Study

**Rick Bukata, MD**

- Nationwide Evaluation of Health Care Prices Paid by Private Health Plans
- This 2020 RAND study (data from 2016-2018) compares hospital reimbursement among third-party insurance companies.
- Data was obtained from all but one state in the US.
- The data reveal enormous variability in individual and system reimbursement from third-party insurers, expressed as a percentage of Medicare reimbursement.
- Variation occurred between states but also within states - from just over 100% of the Medicare rate to over 350%.

**PERSPECTIVES**

- Dr. Bukata notes that private insurers are subsidizing Medicare rates in a paradox that results in insured patients paying more for health care. He calls for more appropriate medicare reimbursement.

## CorePendium Spotlight: Appendicitis

**Jessica Mason, MD and Neeraja Murali, DO**

**PEARLS**

- The combination of anorexia, right lower quadrant pain, and nausea/vomiting (with or without fever) is considered “classic” for appendicitis, but is often not present (< 50% of the time)
- The strongest predictor of appendicitis is pain that migrates to the right lower quadrant.