KY Antimicrobial Stewardship Innovation Consortium

Educational Pearl

Community-Acquired Pneumonia: 5 is a Magic Number

The 2019 American Thoracic Society and Infectious Diseases Society of America community-acquired pneumonia (CAP) guidelines recommend treating patients until they are clinically stable and for a minimum of 5 days.[1] Let's dive into the evidence to support this practice and learn why shorter is better.

CAP Guideline Definition of Clinically Stable

The CAP guideline defines a patient as clinically stable if they meet all of the following criteria:

1. Normal vital signs
    a. Heart rate < 100 beats/minute
    b. Respiratory rate < 24 breaths/minute
    c. Systolic blood pressure > 90 mmHg
    d. Oxygen saturation > 90%
    e. Temperature <100.4° F or <38° C
2. Able to eat
3. Normal mental status (returns to patient's baseline)

If a patient meets these criteria and does not have complicating factors (see below), it is optimal to treat with 5 days of antibiotics even if the patient initially presented with severe CAP.[1]

Benefits vs. Risks for a 5 Day Duration

Various studies have investigated 5 day antibiotic durations in CAP, typically compared to ≈10 days of therapy. These studies consistently demonstrated equivalent clinical cure rates without an increase in mortality or hospital readmissions.[2-4] Additionally, patients who receive longer courses of antibiotics for CAP are more likely to experience adverse drug events and at higher risk of *C. difficile* infection.[5]

Who Should Be Treated with Longer Courses?

If a patient is not improving after 3 days, alternative non-infectious diagnoses, other potential sources of infection, need for source control, and potential untreated resistant organisms should be considered.[6] Specific clinical scenarios that warrant longer courses include pneumonia complicated by meningitis, empyema/lung abscess or other deep-seeded infection, or less common pathogens addressed in other guidelines (ex. *Mycobacterium tuberculosis*, endemic fungi, etc).[1]

Key Takeaway: Stop antibiotics after 5 days in clinical stable patients with community-acquired pneumonia without complications.

References:

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6. Mandell LA, Wunderink RG, Anzueto A, et al. Infectious Diseases Society of America/American Thoracic Society consensus guidelines on the management of community-acquired pneumonia in adults. *Clin Infect Dis*. 2007;44 Suppl 2(Suppl 2):S27-S72. doi:10.1086/511159