

Care Guidelines for Community Acquired Pneumonia (CAP)

FALGUNI S PARIKH

INTRODUCTION

Community acquired pneumonia (CAP), accounts for a major cause of infection related deaths and is responsible for more than 1 million hospital admissions per year¹. The mortality rate for hospitalized patients with pneumonia is high, especially in the elderly with associated co-morbidities and those requiring intensive care. Though community acquired pneumonia is a common illness, there are certain pitfalls as regards its diagnosis. Most of the times the treatment is empiric as clinical signs and symptoms are not specific for a particular agent and also definitive tests are not always available.

Streptococcus pneumoniae is the most likely pathogen, but penicillin resistance has posed an added problem. New agents that cause pneumonia continue to be found. SARS related corona virus being the latest. The steps in care of patients with pneumonia are:

1. Initial diagnosis
2. Plans for diagnostic and therapeutic intervention
3. Decision to admit the patient
4. Antibiotic treatment
5. Follow-up.

Over the years many guidelines have been generated²⁻⁴; however, these have failed to make a consensus view, and have not always been shown to improve outcomes. But all the same, they have answered key questions like when to hospitalize the patient, choice of empiric therapy and follow-up. The update of practice guidelines for CAP in immunocompetent adults laid down by the Infectious Diseases Society of America has been discussed here⁵.

Recommendations for management of community acquired pneumonia in immunocompetent adults.

SITE OF TREATMENT AND INITIAL INVESTIGATIONS

The decision regarding treatment site should be based on a three-step process⁶⁻⁸.

1. Assessment of pre-existing conditions.
2. Calculation of Pneumonia Outcome Research Team (PORT) severity index⁷ which aids in decision for hospitalization.
3. Clinical judgement.

All the patients should undergo chest radiograph, complete blood count, renal function tests, glucose, electrolytes, liver function tests, and saturation measurement. In persons aged 15-54 years – HIV testing (with informed consent) should be done.

TESTS FOR ETIOLOGIC AGENT

Tests for etiologic agents are not essential in ambulatory patients; however an air dried slide of pretreatment deep cough sputum sample may subsequently prove useful.

TESTS FOR ETIOLOGIC AGENT IN HOSPITALIZED PATIENTS

Patients hospitalized for pneumonia should have two pre-treatment blood cultures and expectorated sputum gram stain and culture. The following antigen specific tests may be done if clinical picture is suggestive:

1. *Legionella*

Should be done in patients with enigmatic pneumonia severe enough to require intensive care, in the presence of an epidemic, or failure to respond to a beta lactam.

2. *Chlamydia pneumoniae*
3. *Streptococcus pneumoniae*
4. Influenza virus
5. Respiratory syncytial virus
6. Newer agents — Inhalation anthrax, pneumonic plague and SARS.

INTERPRETATION OF LABORATORY TESTS

Recovery of a probable etiologic agent from an uncontaminated specimen (blood, pleural fluid, trans-tracheal or transthoracic aspirate) or recovery from respiratory secretions of a likely pathogen that does not colonize the upper airways, is necessary for diagnosis.

Etiologic diagnosis is probable with a compatible clinical syndrome combined with detection by stain or culture of a likely pulmonary pathogen in respiratory secretions.

Serologic tests not helpful in initial evaluation.

EMPERIC THERAPY

Antibiotic therapy should be initiated within 4 hours after registration for hospitalized patients with CAP⁹ (Table 1).

SPECIAL POPULATIONS AND CIRCUMSTANCES

Elderly

Antimicrobial selection for elderly patients with CAP is the same as for all adults with CAP¹⁰.

SARS

Healthcare workers need to be vigilant in recognizing SARS because of its potential for rapid spread to close contacts. Major therapeutic intervention is supportive care and precautions to prevent spread.

Bioterrorism

If clues found, public health authorities must be alerted.

DISCHARGE CRITERIA

During the 24 hours prior to discharge the patient should have no more than one of the following characteristics¹¹. Temperature > 37.8°C, pulse > 100 beats/min, respiratory rate > 24 breaths/min, systolic blood pressure < 90 mmHg, blood oxygen saturation < 90%, inability to maintain oral intake.

Smoking cessation should be a goal for persons hospitalized with CAP who smoke¹².

PREVENTION

All persons > 50 years, others at risk for influenza complications and household contacts of high risk persons should receive inactivated influenza vaccine. Health care workers in inpatient and out patient setting should receive annual influenza immunization. Pneumococcal polysaccharide vaccine is recommended for persons > 65 yrs and for those with selected high risk/concurrent diseases².

Table 1: Suggested empiric antibiotic therapy in CAP

Category	Recommended antibiotic
A Previously healthy No recent antibiotic therapy Recent antibiotic therapy	Macrolide or doxycycline. A respiratory fluoroquinolone alone or advanced macrolide and high dose amoxicillin or an advanced macrolide and high dose amoxicillin + clavulanate
B Co-morbidities(COPD, diabetes, renal or congestive heart failure or malignancies) No recent antibiotic therapy Antibiotic therapy	Advanced macrolide or respiratory fluoroquinolone RF or advanced macrolide + B lactam
C Influenza with bacterial super infection	B lactam or respiratory fluoroquinolone
D In-patient Medical ward No recent antibiotic therapy	A respiratory fluoroquinolone or advanced macrolide + B lactam Same as above
E ICU Pseudomonas infection possible Pseudomonas infection not likely	Antipseudomonal agent + Ciprofloxacin or antipseudomonal agent + aminoglycoside plus respiratory fluoroquinolone or macrolide A B lactam + either an advanced macrolide or a respiratory fluoroquinolone

CONCLUSION

Guidelines for the treatment of community acquired pneumonia serve to organize treatment and incorporate new concepts as they evolve. Though no guidelines can replace a physician's clinical judgment, they definitely provide important points for consideration whilst managing a patient^{1,10}.

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