

Community-Acquired Pneumonia



Making Use of the Guidelines from Pediatrics to Adults

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KEYWORDS

- Community acquired pneumonia (CAP) • Infectious disease • Pediatric • Adult
- Health prevention

KEY POINTS

- Community-acquired pneumonia continues to be a common illness and cause of death in the world.
- Prevention of CAP is key to reduce the incidence of *Streptococcus pneumoniae* types that are increasingly becoming resistant to antibiotic therapy.
- In clinical practice, it is important to follow the established guidelines published by the British and American Thoracic Societies and the Infectious Diseases Societies of America.

INTRODUCTION

Community-acquired pneumonia (CAP) is a leading cause of illness and mortality in the world. It is a condition that is underdiagnosed and undertreated.¹⁻³ Providers should follow the recommended guidelines that have been established recently for the management and treatment of CAP in both children and adults. The guidelines for the management and treatment of CAP have been established by the American and British Thoracic Societies, as well as the Infectious Diseases Society of America.³⁻⁵ Unfortunately, antibiotic resistance is steadily increasing, which complicates proper treatment.⁶ This article summarizes the pediatric and adult guidelines and focuses on outpatient treatment and when it is most appropriate to admit a patient with CAP to the hospital.

CAP is defined as pneumonia that is contracted by an individual within a community and is not to be confused with hospital-acquired pneumonia, which is pneumonia contracted in the hospital. A newly designated health care-associated pneumonia (HCAP)

Disclosure Statement: The authors have nothing to disclose.

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Physician Assist Clin 2 (2017) 155–163
<http://dx.doi.org/10.1016/j.cpha.2016.12.001>

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is defined as pneumonia that is acquired in the community by people who have been exposed to pathogens from a hospital.⁷ For example, patients in a long-term care facility or a rehabilitation center. Unfortunately, HCAP guidelines recommend triple or quadruple antibiotic therapy and may lead to overusage of antibiotics in the outpatient setting.⁷ This article does not address HCAP; however, most of these patients without complications or further comorbidities can be managed in a manner similar to that discussed in this article by using the current CAP guidelines.^{3,7}

EPIDEMIOLOGY OF COMMUNITY-ACQUIRED PNEUMONIA

Many providers will encounter patients with CAP over the course of their career. CAP is the number 1 cause of infection and “sometimes the forgotten killer” throughout the world, at any age.^{1,2} In the United States, it is 1 of the 10 leading causes of death and is a costly burden on the health care system. Current estimates of death from CAP are approximately 137 deaths per day.¹ However, that number may be underestimated, as many patients die from other complications, such as sepsis, cancer, and Alzheimer disease, and CAP is not the primary diagnosis code on the death certificate.¹ It is better to have not had CAP in your lifetime, as a recent study showed that patients who have not had CAP have less long-term health sequelae compared with those patients who have had CAP, regardless of age.⁸

ETIOLOGY

It is important to understand the most likely causes of CAP so as to guide the management and treatment of the infection. The most likely etiologic pathogens that cause CAP differ between children and adults. Discovering the etiologic pathogen in children can be challenging.⁵ In 2011, guidelines by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America were published for the management of CAP in infants and children older than 3 months.⁵ These guidelines mention the difficulty in determining the exact pathogen causing CAP, which usually is a combination of both viral and bacterial pathogens⁵ (Table 1).

The guidelines state, however, that children younger than 2 years present more commonly with viral pneumonia associated with the respiratory syncytial virus (RSV).⁵ However, children older than 10 years present with bacterial forms of CAP.⁵ With regard to “atypical forms of CAP,” in older children, *Mycoplasma pneumoniae* is identified in approximately 25% of those children, whereas infants present with *Chlamydophila pneumoniae*.⁵ *Legionella* is rare in children.⁵ It is rare to find a fungal cause for pneumonia in both adults and children. Those patients at highest risk for tuberculosis (TB) should be screened based on risk factors and suspicion of TB.

Table 1 Pathogens in community-acquired pneumonia: pediatric outpatient setting	
1–3 Mo of Age	>3 Mo Old
Respiratory syncytial virus, influenza, rhinovirus, parainfluenza virus, adenovirus, human metapneumovirus	Same viruses as 1–3 mo
<i>Bordetella pertussis</i>	<i>Streptococcus pneumoniae</i>
<i>S pneumoniae</i>	<i>Haemophilus influenzae</i>
<i>Staphylococcus aureus</i> (rare)	<i>Mycoplasma pneumoniae</i>

Data from Refs. 5,11,14

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