ABSTRACT

This clinical policy from the American College of Emergency Physicians is a revision of the 2009 "Clinical Policy: Critical Issues in the Management of Adult Patients Presenting to the Emergency Department With Community-Acquired Pneumonia." A writing subcommittee conducted a systematic review of the literature to derive evidence-based recommendations to answer the following clinical questions: (1) In the adult emergency department patient diagnosed with community-acquired pneumonia, what clinical decision aids can inform the determination of patient disposition? (2) In the adult emergency department patient with community-acquired pneumonia, what biomarkers can be used to direct initial antimicrobial therapy? (3) In the adult emergency department patient diagnosed with community-acquired pneumonia, does a single dose of parenteral antibiotics in the emergency department followed by oral treatment versus oral treatment alone improve outcomes? Evidence was graded and recommendations were made based on the strength of the available data.

INTRODUCTION

Community-acquired pneumonia remains a major health problem in the United States. As the eighth leading cause of death, it claims the lives of over 100,000 Americans per year.[1] Pneumonia is the most common reason for admission to the hospital, with 1.5 million hospital admissions per year, costing between $11,000 and $51,000 per admission.[2] Because of this profound significance, national quality measures have been developed and refined over the years in an attempt to improve quality of pneumonia care.[3]

Pneumonia is defined as an acute pulmonary parenchymal infection (new lung infiltrate with suspected infectious origin) and although the infectious agent may be nonbacterial, once receiving a diagnosis of pneumonia, the patient is usually treated empirically with antibiotics. Pneumonia can be divided into subcategories (community-acquired, hospital-acquired, and ventilator-associated), with each subcategory carrying different risk factors, morbidity and mortality, and likely pathogens, necessitating varying antimicrobial regimens. In the past, literature has referred to health care–associated pneumonia (HCAP) versus community-acquired pneumonia (CAP). The nomenclature has since been refined, with the HCAP term being retired in favor of 2 subgroups: hospital-acquired pneumonia (HAP), defined as pneumonia not incubating at the time of admission and occurring 48 hours or more after admission, and ventilator-associated pneumonia (VAP), defined as pneumonia occurring greater than 48 hours after intubation.[4] Both of these updated categorizations define pneumonia as being acquired from the hospital admission or from being intubated. This clinical policy focuses solely on CAP.

Clinicians must balance the need to accurately diagnose and treat pneumonia while ensuring that these efforts do not lead to the overuse of antimicrobial therapy. Furthermore, since the majority of admitted patients come through the emergency department (ED), determining patient disposition becomes a major question for emergency physicians. Clinical decision aids and biomarkers may play a role in this effort. Finally, some physicians administer a single dose of intravenous antibiotics before discharge on oral therapy. Whether this practice improves patient outcomes or merely adds to the financial cost, ED length of stay, and patient discomfort remains to be determined.

The 2009 ACEP "Clinical Policy: Critical Issues in the Management of Adult Patients Presenting to the Emergency Department With Community-Acquired Pneumonia"[5] addressed questions of whether routine blood cultures were indicated for patients admitted with CAP and whether there was a morbidity and mortality benefit to administering antibiotics in a specific time course. In this updated clinical policy, we address what clinical decision aids can help the emergency physician in the disposition of patients diagnosed with pneumonia, both alone and in conjunction with the use of serum biomarkers. Then we evaluate the use of laboratory testing to direct initial antimicrobial therapy in the ED. Finally, we look at the use of single-dose parenteral antimicrobials before discharging on oral therapy to determine whether there is an outcomes benefit such as decreased length of illness compared with the potential downsides of cost, patient discomfort, and ED length of stay.

METHODOLOGY

This clinical policy is based on a systematic review with critical analysis of the medical literature meeting the inclusion criteria. Searches of MEDLINE, MEDLINE InProcess, Scopus, EMBASE, Web of Science, and the Cochrane Database of Systematic Reviews were performed. All searches were limited to studies of adult humans published in English. Specific key words/phrases, years used in the searches, dates of searches, and study selection are identified under each critical question. In addition, relevant articles from the bibliographies of included studies and more recent articles identified by committee members and reviewers were included.