Respiratory infections remain an important clinical problem for patients in and out of the hospital. Pneumonia and influenza are the sixth leading cause of death in the United States and the number one cause of death from infectious diseases. Respiratory infection arising in the hospital is the most important type of nosocomial infection and the leading cause of mortality from infection in patients treated in the intensive care unit. In the past, we were content to define the bacteriology of infection and to discuss the selection of appropriate antimicrobial therapy. Today, however, our focus has shifted and we must deal with several new challenges.

First, we must consider how to do treatment in a cost-conscious environment, emphasizing cost-effective management, starting with the decision about when to hospitalize patients and when we can safely manage them out of the hospital. Once we have patients in the hospital, we must decide on timely and appropriate therapy, but we must also recognize when the benefits of inpatient therapy have ceased and when to send patients home, again in a cost-effective but safe manner. In assessing the efficacy of our diagnostic and therapeutic interventions, we must focus not only on bacteriologic endpoints but also on outcomes such as mortality and length of stay, these latter endpoints being particularly important for patients with nosocomial pneumonia. Finally, we must make therapeutic choices in the setting of changing microbiology, characterized by a high frequency of antibiotic-resistant pathogens. This requires that we choose therapy not only to assure efficacy if a resistant organism is present but that we also choose therapy that will prevent resistance from occurring at even higher rates in the future.

In this issue of Medical Clinics of North America, the pathogenesis and management of respiratory infections is reviewed in a comprehensive and clinically focused manner by a group of experts involved in the forefront of clinical research in this area. The initial article presents an overview of the host defense system and is followed by a review of current bacteriologic issues in community-acquired pneumonia (CAP), particularly the increasing importance of atypical pathogens and drug-resistant pneumococci. Practical management issues are
then discussed, including which diagnostic tests to order for the patient with CAP and how to define who should be admitted to the hospital and who should be admitted to the ICU. Strategies for achieving an early discharge are then examined along with a review of the many new treatment guidelines for CAP and a focus on specific populations such as the elderly. The role of radiographic evaluation is then examined, along with a discussion of how to define the normal course of pneumonia resolution and which diagnostic tests are required in the clinical situation of nonresolving pneumonia. Although our methods are imperfect, prevention is a key goal for patients at risk for CAP, and our current strategies are reviewed.

Following this comprehensive discussion of the key management issues surrounding CAP, there is a detailed discussion of nosocomial pneumonia, including a focus on how this form of infection occurs and which patient populations are at risk. Once nosocomial pneumonia is suspected, diagnostic testing is needed, and the controversies surrounding when to do invasive versus clinical diagnosis are explored. Finally, there is a discussion of how to choose an effective antibiotic regimen for nosocomial pneumonia.

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