Community acquired pneumonia: Rampant empiricism or cautious overkill?

In this issue of the Canadian Journal of Infectious Diseases, the summary guidelines of a Canadian conference on antimicrobial treatment of community acquired pneumonia in adults is published (page 25). Community acquired pneumonia is an important infectious disease problem. The occurrence of community acquired pneumonia in Canada and current standard treatment approaches are not known. Appropriate management of patients with community acquired pneumonia is complicated by the multiple agents which may cause pneumonia, the limited utility of expectorated sputum or other diagnostic tests for early etiological diagnosis, and comorbidities in the ill population which not only predispose to pneumonia but also profoundly influence outcome. It is likely that most episodes of community acquired pneumonia are treated as outpatients without either chest x-rays or microbiological specimens obtained. Evidence is not available to judge whether current management is optimal or requires modification.

What contributions does the conference report provide? The preamble identifies clearly the important limitations of the report. The recommendations provided are for initial empiric treatment where the etiology is unknown. For episodes where available information permits a narrowing of the likely etiologies, more specific treatment should be given. When and if further clinical or microbiological information becomes available after initiation of therapy, antimicrobials specific for the etiological agents should replace initial empiric therapy. While these are appropriate cautions, it seems unlikely, especially for nonhospitalized patients, that changes in initial therapy would be made if the patient has responded. This is certainly the case where, in the majority of patients, the etiology is not determined.

The guidelines remind us that there are few clinical studies of antimicrobial therapy for community acquired pneumonia and, in fact, this absence of a definitive database is the prime mover for the development of these guidelines. The dearth of relevant clinical data means that antimicrobial recommendations are proposed on the basis of potential etiologies and in vitro susceptibilities with the object to cover most potential pathogens. Thus in vitro and microbiological observations, rather than clinical observations, drive antimicrobial selection. Yet the 'goal' of complete empiric coverage is elusive. All possible etiological agents can never be fully covered, and attempts to achieve complete empiric coverage lead down a road of spiralling extension of antimicrobial therapy. One important result of this approach, too often, is the replacement of less expensive antimicrobials with more recently marketed and more expensive antimicrobials where documentation that these are more effective is not available.

Consider, for example, the treatment of community acquired pneumonia in nonhospitalized patients with amoxicillin. This is not recommended in these guidelines. Currently, it is likely that noninstitutionalized community acquired pneumonia is frequently treated with amoxicillin. In addition, amoxicillin is not recommended as a therapy for pneumonia in nursing home patients and yet, in many nursing homes, the majority of pneumonias are currently treated with amoxicillin (1). Is this inappropriate practice in the absence of clinical outcome data documenting impaired efficacy? I would argue the answer is 'No!' In fact, an examination of the limited clinical data available suggests the opposite may be true. One comparative trial of amoxicillin with a second generation cephalosporin chosen to provide coverage for beta-lactamase producing organisms suggests that amoxicillin was as effective as cefamandole for initial management of community acquired pneumonia (2). In addition, while clinical trials of therapy for community acquired pneumonia are few, there are many published antimicrobial trials of therapy for otitis media and sinusitis. The bacterial etiological agents for these syndromes are similar in many respects to community acquired pneumonia and...
the issues with respect to cover of beta-lactamase producing organisms are similar. Yet studies with several different antimicrobials have consistently failed to show an advantage of initial empiric therapy for these infections when antimicrobials with a broader coverage than amoxicillin are initially used. A Canadian consensus document, in fact, concluded that first-line therapy for otitis media is amoxicillin (3). Thus, in these instances clinical trials do not support recommendations based on in vitro microbiological observations.

Despite the above considerations the proposed guidelines do make a contribution. They were developed after careful thought and discussion by a group of individuals with expertise in the area. Certainly recommendations for wide coverage for severely ill patients, those who require intensive care unit admission, are appropriate. In addition, recommendations for more widespread use of erythromycin, tetracycline and trimethoprim/sulphamethoxazole are not replacement of a less expensive by a more expensive antimicrobial. The guidelines should, perhaps, be viewed as a foundation for identification of important clinical questions relevant to the management of community acquired pneumonia.

What is our Canadian experience with community acquired pneumonia and how does this vary in different parts of Canada? What is the current practice of different physicians in the management of patients who present with community acquired pneumonia? How do management and outcomes differ for patients who are admitted to hospital or who are not admitted to hospital? What is the cost effectiveness of different antimicrobial regimens? What is the clinical relevance of current in vitro observations of antimicrobial susceptibilities in Canada? The document initiates a discussion of some important issues related to community acquired pneumonia which need to be addressed, rather than providing definitive guidelines for antimicrobial therapy of this important clinical problem.

REFERENCES


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