Clinical Features and Outcomes of Community-Acquired Pneumonia

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Introduction

This chapter gives an overview of the clinical features of community-acquired pneumonia (CAP) using data from two studies. Marrie and colleagues (1989) studied all patients with CAP admitted to an acute-care hospital in Halifax, Nova Scotia, from November 1, 1981, to March 15, 1987. Fine and coworkers (1998) studied 944 outpatients and 1343 inpatients with CAP at two hospitals in Pittsburgh, Pennsylvania; one hospital and one health maintenance organization in Boston, Massachusetts; and one hospital in Halifax, Nova Scotia. The study was conducted from October 1991 through March 1994. More than 12,502 patients with a diagnosis of pneumonia were screened to enroll these 2287 patients.

Symptoms at Presentation

Table 1 presents the symptoms for three groups of patients with pneumonia. Patients from the Halifax study (Marrie et al., 1989) are divided into those with CAP and those with nursing home-acquired pneumonia (nursing homes are part of the community). There is a wide spectrum of physical impairment among residents of nursing homes, from full function to an incapacitated state. The nursing home setting closely mimics the hospital setting and for this reason some authorities do not consider nursing home-acquired pneumonia as being community-acquired.

From a review of Table 1 it is evident that despite temporal, geographic, and some methodological differences in the studies, the symptoms recorded for patients with pneumonia are remarkably similar. The nursing home patients have much lower incidence of most symptoms except myalgia. Also noteworthy from the data in Table 1 is the number and frequency of extrarespiratory symptoms. About 25% of the patients complained of vomiting. This may preclude treatment with oral antibiotics and necessitate hospital admission or home intravenous therapy until vomiting subsides. Fatigue was a prominent symptom (90.1%) in the study by Fine and co-workers (1998). Age has a considerable influence on symptoms at presentation. Metlay et al. (1997c) divided 1812 patients with CAP into four age groups: 18 through 44 years (43%), 45 through 64 years (25%), 65 through 74 years (17%), and 75 years or older (15%). For 17 of the 18 recorded symptoms there were significant decreases in reported prevalence with increasing age ($p < .01$). For example, the prevalence of cough was 90% in the youngest age group and 84% in the oldest. Other symptoms that differ in prevalence in the youngest and oldest age groups, respectively, include dyspnea (75% and 64%); sputum production (64% and 64%); pleuritic chest pain (60% and 31%); hemoptysis (19% and 12%); fatigue (83% and 84%); fever (85% and 53%); chills (85% and 52%); anorexia (77% and 64%); sweats (83% and...
45%); headache (72% and 36%); myalgia (67% and 25%); nausea (48% and 31%); sore throat (45% and 27%); inability to eat (31% and 14%); vomiting (29% and 21%); diarrhea (29% and 21%); and abdominal pain (27% and 18%).

Table 2 presents the physical signs recorded for these three groups of patients. No comparisons can be made with Fine's 1998 data, since the same parameters were not reported for both studies. Hypothermia and hyperthermia were present in only 1% and 1.3% of the patients, respectively. About 80% of the patients had an oral temperature reading of >37°C at presentation. Crackles were present on auscultation in 80% of patients, and rhonchi in 34% to 47% (more common in the nursing home patients). About 25% had the physical findings of dullness to percussion, bronchial breathing, whispered pectoriloquy, and aegophony. Alteration in mental status was common. Marrie and coworkers (1989) reported confusion in 48% of the patients with nursing home-acquired pneumonia and in 30% of the other patients with CAP. Fine and colleagues (1998) define altered mental status as stupor, coma, or confusion representing an acute change from the usual state prior to presentation with pneumonia. This was present in 17.3% of the hospitalized patients. The marked difference in mental status change found in the two studies likely reflects differences in study design.

In contrast to a decrease in symptoms with increasing age, tachypnea increased with increasing age (Metlay et al., 1997c). Thirty-six percent of 780 patients with CAP in the 18–44 year age group had tachypnea on admission versus 65% of the 280 patients who were ≥75 years old. There were minimal differences in the proportion of patients with tachycardia and hyperthermia in the different age groups.

### Accuracy of Clinical Findings for Diagnosing CAP

Metlay et al. (1997b) searched the English-language medical literature from 1986 through October 1995 to try and answer the question posed above. From previous studies it is known that there is considerable variation in the recording of symptoms (Cochrane et al., 1951). This variation can be eliminated by use of standardized questionnaires for documenting symptoms. Studies of reliability among 24 physicians in the examination of 24 pa-