

Early identification of severe community-onset pneumonia in “frail elderly patient”

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The article from Pieralli et al. [1], published in this issue of *Internal and Emergency Medicine*, underscores the importance of delirium, for the high prevalence and association with mortality, in elderly patients with community-acquired pneumonia (CAP).

Despite advances in diagnosis, antimicrobial therapy and medical technologies, CAP remains an important cause of morbidity and mortality, especially in patients who require hospitalization. Approximately 1 in 20 persons over 85 years of age will present a new episode of pneumonia every year, and the incidence is likely to increase in relation to the progressive aging of the general population. In the past decade, the number of hospitalizations due to pneumonia has increased by 34 %, and this increase is primarily seen in people over the age of 75 years, who represent the population of patients with the highest risk of death. Particular attention has recently been directed at the concept of the “frail elderly patient” [2]. Although frailty has been considered synonymous with disability, comorbidity or advanced old age, it has only recently been recognized as a biological syndrome of decreased reserve and resistance to stressors resulting from a cumulative decline across multiple physiologic systems, and causing increased vulnerability to an adverse outcome. Fried et al. [3] developed and validated a phenotype of frailty analyzing a population of 5,317 patients aged 65 years and older. They define frailty as a clinical condition characterized by three

or more of the following criteria: unintentional weight loss (10 lbs in the past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity.

Elderly patients with poor functional status are characterized by a higher risk of developing severe CAP, due to the frequent presence of underlying respiratory and cardiac diseases, alteration of mental status, and immunosuppression; the contemporary presence of renal impairment or hepatic failure. They usually require specific dose adjustment of antibiotic therapy, which may be toxic in this specific patient population. Moreover, older frail patients have a high frequency of aspiration pneumonia and pneumonia due to gram-negative bacilli and other multi-drug resistant (MDR) pathogens. Data are lacking on the prognostic significance of conditions unique to older patients, such as delirium and the coexistence of multiple comorbidities. Hence, the article of Pieralli and coworkers represents an important step forward in the assessment of the importance of delirium as a predictor of in-hospital mortality in elderly patients with CAP. In this study, delirium was highly prevalent (25 % of patients with CAP) during hospitalization and occurred more frequently in patients with an adverse outcome: the occurrence of at least one episode of delirium during the stay increased by 5.7 times the risk of in-hospital death. As reported in Table 1, pneumonia in the elderly patients tends to occur more often with extrapulmonary manifestations than with pulmonary findings: nausea, vomiting, altered sensorium or diarrhea are often present. As reported by Pieralli et al., clinical manifestations of pneumonia, such as fever, cough and self-reporting dyspnea, may frequently be absent. These diagnostic difficulties are further burdened by the fact that the white blood cell count may be within normal limits, and often fever may be absent in this group of patients due to a

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Table 1 Clues for severe community-onset pneumonia in the frail elderly patient

Clues	Comments
Extra-pulmonary signs and symptoms	Chills, nausea, vomiting, altered sensorium, diarrhea, delirium, and cardiac arrhythmia
Absent perception of fever and other symptoms	Patients have difficulty to identify and communicate the symptoms, or to provide useful medical history data
Anergy	White blood cell count may be within normal limits. Fever may be absent
Clinical features suggestive of aspiration pneumonia	Reduced level of consciousness. Dysphagia. Mechanical or neurological dysfunction of the high gastrointestinal tract
Renal and/or hepatic failure	Require specific dose adjustment of antibiotic therapy, which may be toxic in this specific patient population
Healthcare contacts	Hospitalization during the last year and/or other healthcare contacts is an important risk factor for colonization by MDR pathogens

MDR multidrug-resistant

state of anergy. Hence, diagnosing pneumonia in the elderly remains a challenge for clinicians.

Finally, no less important, in recent years changes in the healthcare system have shifted a considerable part of older patient care from hospitals to the community, and the traditional distinction between community- and hospital-acquired infections has become less clear [4]. For this more frequent healthcare contact, frail elderly patients have a higher risk of MDR colonization and to develop a more severe pneumonia, with a real risk of receiving an inadequate empiric antibiotic therapy, and, therefore, to have a fatal outcome [5]. Hence, recent studies have been published in order to provide scores based on epidemiological criteria and clinical clues for an early identification of patients with pneumonia due to MDR pathogens [6–8].

In summary, as reported by Pieralli and co-workers, occurrence of delirium in elderly patients with community-onset pneumonia is highly prevalent, and represents a

distinctive predictor of death; moreover, it often may be the only sign or symptom present at admission. The assessment of functional status before and during the course of hospitalization should be an integral component of the evaluation of elderly patients. An early identification of severe community-onset pneumonia in these patients seems to be crucial.

Conflict of interest None.

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