Mortality in Elderly Patients With Community-Acquired Pneumonia☆

Mortalidad y neumonía adquirida en la comunidad en el paciente anciano

To the Editor:

We read with interest the study by Martín-Salvador et al.,[2] recently published in ARCHIVOS DE BRONCONEUMOLOGÍA, analyzing age-dependent psychological, physical and functional deterioration in patients hospitalized for pneumonia. The authors highlight the impact of the episode on their quality of life, functional capacity and reserve, and their psychological and physical status. Numerous studies have been published recently on pneumonia in the elderly patient, evaluating prognostic factors and mortality in the short and middle term (30 days–1 year).[2,3] These studies show that incidence is as high as 15–35 cases/1000 inhabitants/year, and that incidence, admission and mortality rates have increased in the last 10 years, and are much higher in the elderly than in patients under 75 years of age.[2,3] Compared to individuals admitted for other causes, patients who are hospitalized for pneumonia have higher

mortality during the subsequent year. This phenomenon is associated with the inflammatory response and impaired physical and functional capacity following pneumonia, which are more marked in elderly patients who have a lower functional reserve and capacity for recovering their baseline status.[2] Pneumonia in the elderly is a challenge for emergency departments (ED), since mortality in the ED itself is almost the same as among hospitalized patients,[4] and pneumonia, along with urinary tract infection, is the most common cause of admission, sepsis, severe sepsis, septic shock, and mortality among elderly patients seen in the ED.[2,3] Although studies have been published on the impact of an episode of pneumonia on quality of life and on the functional, psychological and physical status of elderly individuals, scant data are available on the progress and mortality of these patients in the long term. It is estimated that almost half of elderly patients will have died within 5 years of presenting an episode of pneumonia.[2] However, if this assertion is confirmed, it raises several questions: What are the causes of death? Do baseline comorbidity and age play a part? How does an episode of pneumonia impact on the life expectancy of the elderly individual? What are the long-term predictors of mortality?

To analyze the progress and mortality of elderly patients in the 5 years after presenting an episode of pneumonia, we used a database

Table 1
Characteristics and 5-Year Progress of Patients With Community-Acquired Pneumonia Seen in the Emergency Department.

Patient Characteristics n=400	Patients <75 Years n=286	Patients ≥75 Years n=114	*P*-value
Mean age in years±SD; (range)	46.69±15.63 (18–74)	84.33±6.65 (75–99)	<.001
Sex, men, *n* (%)	172 (60%)	68 (59.6%)	.928
Admitted from care home: *n* (%)	3 (1%)	36 (31.6%)	<.001
Charlson index±SD	0.93±1.14	3.23±1.43	<.001
COPD, *n* (%)	34 (11.9%)	34 (29.8%)	<.001
Asthma, *n* (%)	23 (8%)	4 (3.5%)	.078
DILD, *n* (%)	7 (2.4%)	7 (6.1%)	.074
Clinical features and severity			
Confusion-altered consciousness; *n* (%)	22 (7.7%)	28 (25.2%)	<.001
Criteria for sepsis; *n* (%)	204 (71.3%)	63 (55.3%)	.002
Criteria for severe sepsis; *n* (%)	57 (19.9%)	15 (13.2%)	.072
Criteria for septic shock; *n* (%)	18 (6.3%)	1 (0.9%)	.02
Discharge from the ED; *n* (%)	149 (52.09%)	13 (11.4%)	<.001
Admission to ward-SSU/ICU; *n* (%)	137 (47.9%)	98 (86.5%)	<.001
Number of days of stay±SD; *n* (%)	7.43±4.99	9.2±4.25	.004
Positive microbiological diagnosis; n (%)	93 (32.5%)	12 (11.5%)	.02
Streptococcus pneumoniae; *n* (%)	55 (59%)	4 (33%)	.08
PSI prognostic evaluation			
PSI score±SD	82.69±43.32	132.94±43.74	<.001
Distribution by PSI; n (%)			<.001
PSI I	74 (25.9%)	0 (0%)	NS
PSI II	65 (22.7%)	1 (0.9%)	NS
PSI III	50 (17.5%)	17 (14.9%)	NS
PSI IV	51 (17.8%)	44 (38.6%)	.003
PSI V	46 (16.1%)	52 (45.6%)	.001
Evaluation of mortality			
Death in ED; *n* (%)	0 (0%)	3 (2.6%)	NS
Death in hospital; *n* (%)	13 (11.6%)	14 (14.9%)	.312
Death in ICU; *n* (%)	10 (34.5%)	1 (14.3%)	.291
Death among patients discharged after first ED visit; *n* (%)	0 (0%)	1 (7.7%)	NS
Overall death at 30 days; *n* (%)	25 (8.7%)	22 (19.3%) OR: 2.49 (95% CI: 1.34–4.64)	.003
Overall death at 1 year; *n* (%)	31 (10.8%)	33 (28.9%) OR: 3.35 (95% CI: 1.93–5.81)	<.001
Overall death at 5 years; *n* (%)	41 (14.3%)	48 (42.1%) OR: 4.34 (95% CI: 2.64–7.14)	<.001

CI: confidence interval; COPD: chronic obstructive pulmonary disease; DILD: diffuse interstitial lung disease; Dis: disease; ED: emergency department; ICU: intensive care unit; NS: not significant or insufficient sample; OR: odds ratio; PSI: Pneumonia Severity Index; SD: standard deviation; SSU: short stay unit.

from a study of 400 patients seen in our ED between January 1, 2008 and August 1, 2009, in which 2 groups were compared: 286 patients <75 years of age *versus* 114 patients ≥75 years of age.[5] Some of the results are shown in Table 1. The data show that over 40% of elderly patients die within 5 years of presenting an episode of pneumonia, compared to 14.3% of individuals <75 years of age (OR: 4.34; (95% CI: 2.64–7.14); *P*<.001). Our results confirm that 5-year mortality in these patients is very significant, although we could not establish if this was an end result of the pneumonia episode. We believe that the psychological, physical and functional impairment caused by pneumonia in the elderly patient,[1] both in the short and long term, together with advanced age and the increased comorbidity burden reflected in the Charlson index, and in particular in the greater proportion of patients with COPD, are factors which contribute jointly to the fact that almost half of elderly patients will die within 5 years.

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The Role of Community Pharmacies in the Treatment of Tuberculosis☆

El papel de las farmacias comunitarias en el tratamiento de la tuberculosis

To the Editor:

We read with great interest the editorial on the role of community pharmacies in the control of respiratory diseases.[1] However, while we agree with the interventions outlined in the article, we also believe that the community pharmacy can play an important role in directly observed treatment of tuberculosis (DOT-TB).[2,3] DOT-TB is a measure that is widely recommended by the World Health Organization for the control of tuberculosis, particularly in populations with a risk of lack of therapeutic compliance. As part of the DOT strategy, TB patients are assigned a treatment observer who watches while they take their medication, thus ensuring adherence to their prescribed regimen. In a move to control tuberculosis, a DOT-TB program was launched by Health Department 9 of the Community of Valencia in 1999, and since then administration of tuberculosis treatment has been directly supervised in community pharmacies.[4] The geographical distribution of local pharmacies makes it easy for the patient to rapidly establish contact with a healthcare professional to help ensure that they take their treatment. Moreover, excellent communication and cooperation between community pharmacies, social workers and clinicians means that lack of treatment compliance and adverse effects can also be identified. The results of our program, published elsewhere, show greater adherence among patients at risk of poor treatment compliance and drop-out, and we achieved cure rates among our cohorts of over 75%.[5] DOT-TB teams should be structured on a multidisciplinary model, with the participation of social workers, clinicians and community pharmacists. Moreover, interventional healthcare programs must be continuously reviewed to detect changes in patient populations; efficacy indicators must be applied, and professionals should be fully informed to ensure their continuing support and engagement in these initiatives.

In our opinion, involving all the available healthcare agents in a particular population area, including pharmacy professionals, reflects a strong commitment to controlling tuberculosis.

Appendix A.

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