

**Factors at Hospital Admission
Related to a Poor Prognosis in
Patients With COPD**

To the Editor: In an interesting article by Llor et al¹ on the cost of exacerbations of chronic bronchitis and chronic obstructive pulmonary disease (COPD), the authors emphasized, "It is essential to identify the clinical situations or risk factors associated with greater cost of treatment of chronic bronchitis or COPD exacerbations. This would allow strategies to be drawn up to optimize the limited resources available." After an excellent pharmacoeconomics analysis of the problem, the authors concluded, "Treatment of exacerbations of chronic bronchitis and COPD was associated with high costs, especially in patients with severe disease who used continuous home oxygen therapy and who had been admitted to hospital previously. Treatment with moxifloxacin or amoxicillin-clavulanic acid was associated with a lower cost than treatment with clarithromycin."

TABLE
Multivariate Analysis of Factors Possibly Associated With Mortality in Patients With Moderate to Severe Exacerbations of COPD

Analyzed Variables		β Coefficient (OR)	95% Confidence Limits		P
			Lower Limit	Upper Limit	
Age, y	<65	1	1.2845	3.8441	.0227
	≥ 65	2.5814			
Heart rate, beats/min	<100	1	3.6291	8.2342	.0321
	≥ 100	5.7243			
Altered mental state	No	1	1.1729	2.984	.0201
	Yes	1.5793			
Respiratory rate, breaths/min	< 30	1	1.3723	5.8432	.0231
	≥ 30	3.2137			
pH	≥ 7.35	1	1.3654	7.2518	.0115
	< 7.35	4.985			
Radiography	Other patterns	1	2.6016	8.9342	.0301
	Bilateral inflammatory lesions	5.6607			
Electrocardiogram	Other patterns	1	2.2338	7.4839	.0189
	P-pulmonale and/or right axis deviation	4.5832			
Mechanical ventilation required	No	1	2.340	4.8031	.0370
	Yes	4.311			

Abbreviation: OR, odds ratio.

However, we think that besides the situations identified in the study as risk factors for increased cost of health care for such patients, other factors that also have an effect on health care should be analyzed to provide a more complete appreciation of the problem. More specifically, we mean prognostic factors associated with mortality in patients who require hospitalization for exacerbated COPD. Such factors, for example, might be longer hospital stays, lower response rates to treatment, and admission to intensive care units, to mention only a few examples.

We studied some of these factors by univariate and multivariate analysis of data for 174 patients,² evaluating 73 clinical and paraclinical variables chosen based on expert

opinion and a MEDLINE search of the literature. The Table shows the 8 variables that emerged as independent risk factors for mortality.

A single study is of course insufficient to settle such a complex, multi-faceted, highly variable problem as the cost of COPD exacerbations. In fact, from the perspective of both these studies we think we have not even managed to see the entire problem. However, we recognize the usefulness of mentioning them here, as representative of numerous other studies. We think it would be opportune to systematize and summarize the body of information on this issue so that we would have more complete evidence on which to base improved strategies to use in the arduous day-to-day effort to make the most of health care resources.

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1. Llor C, Naberan K, Cots JM, Molina J, Ros F, Miravittles M, et al. Factores de riesgo de elevado coste de las agudizaciones de la bronquitis crónica y la EPOC. Arch Bronconeumol. 2006;42:175-82.
2. Rivero G. Estratificación pronóstica en los pacientes con EPOC agudizada que requieren hospitalización. Más humo que señales. Arch Bronconeumol. 2007;43:640.