Abstract Group: 2.1. Acute Critical Care

Keyword 1: Acute respiratory failure Keyword 2: Comorbidities Keyword 3: COPD - exacerbations

Title: Predictors of 1-year mortality at hospital admission for acute exacerbations of COPD – A real-life study

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Body: Background: Acute exacerbations of COPD (AE-COPD) are related to high mortality, especially when hospitalization is needed. Predictors for severe outcomes are still not sufficiently defined which constrains optimal management. Study objectives: Assess the mortality rate and identify potential determinants of mortality in a real-life cohort of patients hospitalized for AE-COPD. Design: Retrospective, observational cohort study including all consecutive patients admitted to the pulmonary ward of the University Hospital Maastricht between January 1, 2009 and April 1, 2010 for AE-COPD. Potential predictors were assessed at initial presentation at the emergency room. Primary outcome was mortality at 1 year. Univariate and multivariate time-to-event analysis using Cox proportional hazard models were used for statistical analysis. Results: 260 patients were enrolled. The mean age was 70.5 ± 10.8 years, 50.0% were male and 63.4% had advanced COPD. In-hospital mortality rate was 5.8% and the 1-year mortality was 27.7%. Independent risk factors for mortality were age (Hazard Ratio [HR], 1.04; 95% confidence interval [CI], 1.01-1.07), male sex (HR, 2.00; 95% CI, 1.15-3.48), prior hospitalization for AE-COPD in the last 2 years (HR, 2.56; 95% CI, 1.52-4.30), prior recorded congestive heart failure (HR, 1.75; 95% CI, 1.03-2.97), \( \text{PaCO}_2 \geq 6.0 \text{ kPa} \) (HR, 2.90; 95% CI, 1.65-5.09) and urea \( \geq 8.0 \text{ mmol/l} \) (HR, 2.38; 95% CI, 1.42-3.99) at admission. Conclusions: Age, male sex, prior hospitalization for AE-COPD in the last 2 years, congestive heart failure, hypercapnia and elevated levels of urea at presentation are independent predictors of mortality within the first year after admission.