Hospitalized Exacerbations of COPD
Risk Factors and Outcomes in the ECLIPSE Cohort

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OBJECTIVE: Exacerbations of COPD requiring hospital admission have important clinical and societal implications. We sought to investigate the incidence, recurrence, risk factors, and mortality of patients with COPD exacerbations requiring hospital admission compared with those without hospital admission during 3-year follow-up. Patients with COPD (N = 2,138) were identified from the Evaluation of COPD Longitudinally to Identify Predictive Surrogate Endpoints (ECLIPSE) observational cohort.

METHODS: An analysis of time to first event of hospital admission was performed using Kaplan-Meier curves and Cox proportional hazard regression adjusting for possible confounders.

RESULTS: Of the 2,138 patients, 670 (31%) reported a total of 1,452 COPD exacerbations requiring hospital admission during the study period; 313 patients (15%) reported multiple events. A prior history of exacerbation of COPD requiring hospital admission was the factor associated with the highest risk of a new hospitalization for exacerbation (hazard ratio, 2.71; 95% CI, 2.24-3.29; P<.001). Other risk factors included more severe airflow limitation, poorer health status, older age, radiologic evidence of emphysema, and higher WBC count. Having been hospitalized for exacerbation significantly increased the risk of mortality (P<.001).

CONCLUSIONS: Exacerbations of COPD requiring hospital admission occur across all stages of airflow limitation and are a significant prognostic factor of reduced survival across all COPD stages. Patients with COPD at a high risk for hospitalization can be identified by their past history for similar events, and other factors, including the severity of airflow limitation, poor health status, age, presence of emphysema, and leukocytosis.

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ABBREVIATIONS: BODE = BMI, degree of airflow obstruction and dyspnea, and exercise capacity; ECLIPSE = Evaluation of COPD Longitudinally to Identify Predictive Surrogate Endpoints; GOLD = Global Initiative for Chronic Lung Disease; HR = hazard ratio; PPPY = person per year

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