

Short- and Long-Term Risks of Incident Heart Failure and Mortality in Hospitalized Patients With COPD-Related Pulmonary Hypertension

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Abstract:

Introduction: The impact of COPD-related pulmonary hypertension on the subsequent development of heart failure (HF) in patients without pre-existing HF remains unclear.

Methods: We conducted a nationwide retrospective cohort study using Taiwan's National Health Insurance Research Database, including hospitalized COPD patients from 2009 to 2018. Patients with newly diagnosed COPD-related pulmonary hypertension were propensity score-matched (1:4) with COPD patients without pulmonary hypertension. Individuals with prior HF were excluded. The risks of incident HF and all-cause mortality were assessed at 1-, 3-, and 5-year follow-up using Cox proportional hazards and competing risk models.

Results: After matching, 2,661 patients with COPD-related pulmonary hypertension and 10,644 controls were analyzed. Patients with pulmonary hypertension had significantly higher risks of incident HF at 1 year (11.73% vs. 8.49%), 3 years (18.67% vs. 13.56%), and 5 years (21.83% vs. 16.43%) (all $P < 0.0001$). Mortality was also consistently higher at 1, 3, and 5 years compared with controls (all $P < 0.0001$). These associations remained significant in competing risk analyses accounting for death.

Conclusions: COPD-related pulmonary hypertension was associated with increased short- and long-term risks of incident HF and mortality among hospitalized COPD patients without prior HF.

Keywords:

Chronic obstructive pulmonary disease; Pulmonary hypertension; Incident heart failure.