





Heart failure and chronic obstructive pulmonary disease in patients with newly initiated sodium-glucose transport protein 2 inhibitors

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Introduction: To investigate the impact of chronic obstructive pulmonary disease (COPD) diagnosis on one-year outcome in heart failure (HF) patients in whom sodium-glucose transport protein 2 inhibitors (SGLT2i) were initiated de novo.

Patients and Methods: Patients were recruited from a local HF registry. All patients with established HF diagnosis according to contemporary guidelines¹ in whom SGLT2i were initiated were eligible for the study. Only patients with at least 6-month follow-up were analyzed. Follow-up included either day-hospital visit or telephone interview with electronic transfer of laboratory data. Primary endpoint was composite of death and hospitalization due to acute decompensated heart failure.

Results: Out of 1191 patients included in the registry, 996 completed at least 6-month follow-up. Population was predominantly male (67.3%), aged 70 (62-76) years. In 122 (12.2%) patients a diagnosis of COPD was previously established. COPD patients had more often history of peripheral artery disease (PAD) ($p=0.001$), diabetes ($p=0.042$), New York Heart Association class III or IV ($p=0.002$), presented with higher red cell distribution width (RDW) ($p<0.001$), and lower estimated glomerular filtration rate ($p=0.024$) and albumin levels ($p=0.005$). Death ($p=0.002$), HF hospitalization ($p<0.001$), and primary outcome ($p<0.001$) occurred more often in COPD patients. In Cox regression (forward conditional approach with 16 variables), COPD ($\text{Exp}(B)=2.03$, 95% confidence intervals 1.33-3.12, $p=0.001$), along with age, log (NT-proBNP), RDW, history of stroke, and PAD predicted the occurrence of primary endpoint. At 6-month follow-up, COPD patients had higher NT-proBNP ($p<0.001$) and C-reactive protein ($p<0.001$).

Conclusion: HF diagnosis represents a high-risk feature for HF patients, not merely as a marker of more severe risk profile, but also independently being associated with worse outcome.

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LITERATURE

1. McDonagh TA, Metra M, Adamo M, Gardner RS, Baumbach A, Böhm M, et al. 2023 Focused Update of the 2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *Eur Heart J.* 2023 Oct 44(37):3627-39. <https://doi.org/10.1093/eurheartj/ehad195>