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Prevalence of Chronic Kidney Disease in Patients with Heart Failure with Reduced Ejection Fraction and Its Impact on Guideline-Directed Medical Therapy

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Introduction: Chronic kidney disease (CKD) and heart failure with reduced ejection fraction (HFrEF) frequently coexist and adversely affect prognosis.[1-3] This study aimed to determine the prevalence of CKD and albuminuria in hospitalized patients with HFrEF, assess adherence to guideline-directed medical therapy (GDMT), and investigate whether CKD independently predicts ARNI non-prescription

Patients and Methods: This cross-sectional, single-centre study included 142 hospitalized patients with HFrEF (left ventricular ejection fraction [LVEF] ≤40%). CKD was defined as an estimated glomerular filtration rate (eGFR) <60 mL/min/1.73 m², calculated using the CKD-EPI 2021 equation. Treatment use was compared using Fisher's exact test. Multivariable logistic regression assessed predictors of ARNI prescription, including CKD, age, LVEF, and log-transformed NT-proBNP.

Results: CKD was present in 52.1% of patients (74/142; 95% CI, 43.9–60.2). Patients with CKD were older (78.8 vs. 68.9 years), more frequently female (60.8% vs. 30.9%), and had higher median NT-proBNP levels (8,356 vs. 5,754 ng/L). Albuminuria was present in 83.1% (69/83) of patients with available measurements, including 24.1% with severely increased albuminuria (A3). All four foundational GDMT drug classes were prescribed to 66.2% of patients, with numerically lower use in those with CKD (59.5% vs. 73.5%; p = 0.110). SGLT2 inhibitors were prescribed to 81.7%, with no significant difference by CKD status (p = 0.385). CKD was not an independent predictor of ARNI prescription (OR, 1.15; 95% CI, 0.49–2.72; p = 0.753). Lower likelihood of ARNI prescription was associated with older age and lower left ventricular ejection fraction (LVEF). Statins were prescribed to 75.2% of patients, with no significant difference according to CKD status (p = 0.416), while coronary artery disease was independently associated with statin prescription (OR, 4.12; p = 0.003).

Conclusion: CKD affected more than half of hospitalized patients with HFrEF, while albuminuria was frequent among those tested. Although ARNI prescription was less frequent in patients with CKD, this association was not independent after adjustment. Older age and lower LVEF were associated with lower ARNI use. These findings highlight potential treatment gaps and warrant confirmation in larger prospective studies.

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