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Use of Angiotensin Receptor Neprilysin Inhibitor in ESRD Patients with Reduced Cardiac Ejection Fraction: Real-World Experience From a Single Center

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Objectives: Angiotensin receptor neprilysin inhibitor (ARNI) has been recommended by major guidelines as the leading therapy for heart failure with reduced ejection fraction (HFrEF). But little is known about its safety and effectiveness among ESRD patients with HFrEF in real-world practice.

Methods: A retrospective study was conducted among ESRD patients who had either received ARNI or not at our dialysis center. Enrollment commenced on Feb 1, 2018; and follow-up was completed on Sep 31, 2021.

Results: A total of 91 patients included in the study (age: 64.5 ± 10.9 y; 42 males). 34 patients had been prescribed with ARNI (case group) at least once and the median follow up duration were 23 months. Although there were no significant differences in age, sex, comorbidities between control and case, the NYHA symptom severity score was significantly high in control group compared to case group (1.53 ± 0.86 for control group; 1.15 ± 0.51 for case group, $p < 0.05$). In case group, ventricular ejection fraction was unchanged during the follow up period, while left ventricular end-diastolic diameter, left ventricular end-systolic diameter, and left ventricular mass index changed significantly. Kaplan-Meier analysis showed non-significant survival benefit in case group. However, incidence of hospitalization due to heart failure aggravation and emergent dialysis were more frequent in case group compared to control group.

Conclusions: In our study, ARNI was not effective in improving ventricular ejection fraction in ESRD patients with HFrEF. Larger prospective, long-term follow-up study should be warranted.