Sacubitril/valsartan in heart failure with reduced ejection fraction patients: real world experience on advanced chronic kidney disease, hypotension and dose titration

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Introduction:
The angiotensin-receptor and neprilysin inhibition (ARNI) with a combination of sacubitril and valsartan had been shown to reduce cardiovascular mortality by 20% and all-cause mortality by 16% as compared with enalapril in the randomized controlled PARADIGM-HF trial. However, there is a paucity of real-world data on the effects of ARNI in heart failure patients with reduced ejection fraction (HFrEF), especially with concurrent renal impairment or hypotension.

Methods:
Between January and December 2017, 466 HFrEF patients treated with sacubitril/valsartan (Group A) in a heart failure referral center were recruited consecutively. Between 2015 and 2016, another 466 HFrEF patients acting as control, who were managed with standard HF treatment without ARNI (Group B) were recruited. Baseline characteristics and clinical outcomes were collected and compared between both groups.

Results:
Baseline characteristics were comparable between the two groups. During a mean follow-up period of 567 days, death from cardiovascular causes or first unplanned hospitalization for HF occurred in 106 patients in Group A (22.7%) and 175 patients in Group B (37.6%, hazard ratio 0.65; 95% CI 0.51 to 0.83; p=0.001). The incidences of deaths from any causes, cardiovascular death, sudden death, and HF re-hospitalization were all significantly lower in Group A than Group B patients. Among patients with different chronic kidney disease stages and normotensive patients, treatment with sacubitril/valsartan showed favorable outcomes than treatment with standard HF care without ARNI. However, in patients with baseline systolic blood pressure lower than 100mmHg, there were no significant differences of outcomes in both groups. Among Group A patients, de-escalation of sacubitril/valsartan was associated with poorer outcomes.

Conclusion:
Our study demonstrated the effectiveness of sacubitril/valsartan on HFrEF patients in the real world practice, including those with advanced renal impairment.