COMPARATIVE EFFECTIVENESS AND COSTS OF SACUBITRIL/VALSARTAN VERSUS ANGIOTENSIN RECEPTOR BLOCKERS IN HEART FAILURE WITH PRESERVED EJECTION FRACTION

Munaza Riaz[1], Steven M. Smith[1,2], David E. Winchester[2], Jingchuan Guo[1], Eric A. Dietrich[3], Haesuk Park[1]

[1]Department of Pharmaceutical Outcomes and Policy, College of Pharmacy, University of Florida
[2]College of Medicine, University of Florida
[3]Department of Pharmacotherapy and Translational Research, College of Pharmacy, University of Florida

Introduction

Sacubitril/valsartan (SAC/VAL) and angiotensin receptor blockers (ARB) are recommended therapy for heart failure with preserved ejection fraction (HFpEF), but little is known about their real-world comparative effectiveness for preventing HF-related and all-cause hospitalizations in patients with HFpEF, nor their related medical costs.

Methods

- **Study Design**: New-user, active comparator cohort study
- **Data Source:** MarketScan® claims databases
- **Study Period:** 01-01-2009 to 12-01-2020
- **Inclusion Criteria:** Patients with diagnosed HFpEF who initiated SAC/VAL (2015-2020) or ARB (2009-2014) were included if they were aged ≥18 years and had 6 months of continuous enrolment in the health plan prior to the prescription fill date.
- **Exclusion Criteria:** Patients who had any HF-related diagnosis before HFpEF diagnosis.
- **Index date: P**rescription fill date
- **Exposure:** SAC/VAL vs. ARB
- **Outcome:** HF-related and all-cause hospitalizations
- Post-treatment HF-related and all-cause medical costs
- **Statistical Analysis:**
- After 1 up to 3 propensity score matching,
- Cox proportional hazards regression models were used with robust variance estimators to compare HF-related and all-cause hospitalizations
- Two-part models were used to estimate and compare post-treatment HF-related and all-cause costs per patient per month between the SAC/VAL and ARB users.

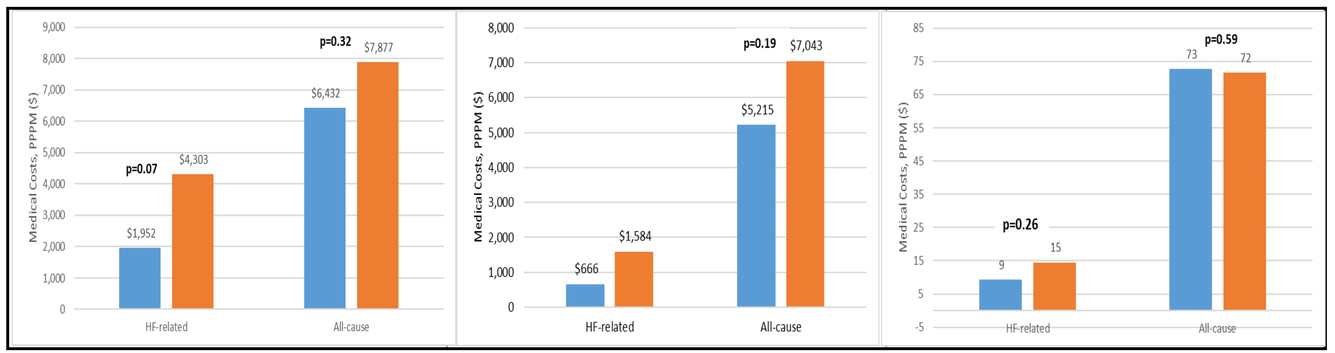
Results

- After propensity score matching, 2,520 patients (846 SAC/VAL users and 1,674 ARB users) were included in the clinical outcomes cohort **(Table 1)** and 1,705 (553 SAC/VAL users and 1,152 ARB users) in the economic outcomes cohort (**Figure 1**).
- Mean age was 67 years and more than 50% of the cohort comprised of male patients.
- Patient characteristics were well balanced between the two treatment groups (all absolute standardized mean differences <0.1)

Table 1: Risk of HF-related and all-cause hospitalizations associated with the use of sacubitril/valsartan vs. angiotensin receptor blocker in the propensity score–matched analyses (N=2,520)

	Patients, n	Person-months	Events, n	Crude incidence per 100 person-months	Adjusted hazard ratio (95% CI)	p-value
HF-related hospitalization						
Sacubitril/valsartan	846	6,766	128	1.89	0.95 (0.76 - 1.18)	0.63
Angiotensin receptor blocker	1,674	15,849	332	2.09	Reference	
All-cause hospitalization						
Sacubitril/valsartan	846	6,001	334	5.57	0.92 (0.80 - 1.04)	0.18
Angiotensin receptor blocker	1,674	15,143	939	6.20	Reference	

Figure 1: Adjusted per patient per month post-treatment costs associated with sacubitril/valsartan and angiotensin receptor blocker use (N=1,705)



Total medical costs | **Payer-related Costs** | **Patient-related Costs**

Abbreviations: ARB = angiotensin receptor blocker; CI = confidence interval; HF = heart failure; HFpEF = heart failure with preserved ejection fraction; PPPM = per patient per month; SAC/VAL = sacubitril/valsartan.

SAC/VAL and ARB users did not differ significantly in the risk of HF-related and all-cause hospitalizations and related medical costs.

Strengths

- New-user active comparator design with propensity score matching
- Historic control group
- Large commercial administrative claims databases

Limitations

- Data on lab values and race/ethnicity were not available to analyze.
- Prescription fill data was used. Hence, there was no way to ascertain that the patients took medication.
- The patients included in this study had private and Medicare Advantage plans; thus, our findings may not be generalizable to patients with other health insurance plans or patients without insurance.

Follow on Twitter: @RiazMunaza @UFCoDES

Contact Email: m.riaz@ufl.edu

Disclosure:
Authors have no conflict of interest to report..