Mortality and Hospitalization Following Initiation of Sacubitril/Valsartan in the Medicare Population

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Disclosures

- All authors report no conflicts of interest.

Background

- Sacubitril/valsartan was approved in 2015 for treatment of chronic heart failure with reduced ejection fraction (HFrEF).
- Few population-based studies have characterized early users of this medication.

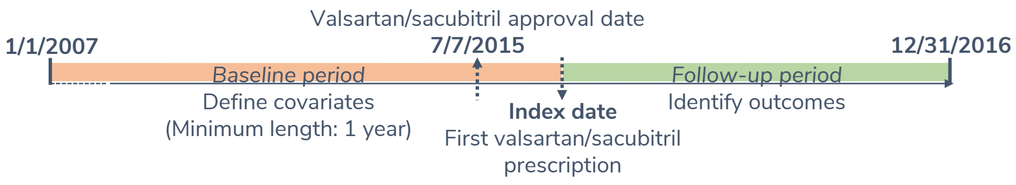
Objectives

- To describe a population-based cohort of patients initiating sacubitril/valsartan in terms of their baseline characteristics and subsequent clinical outcomes.

Methods

- **Study design:** Retrospective cohort of new users of sacubitril/valsartan in 2015-2016
- **Data source:** 20% sample of Medicare administrative claims records from 2007-2016
- **Index date:** First date of sacubitril/valsartan prescription.
- **Inclusion criteria:**
  - At least 1 prescription for sacubitril/valsartan.
  - Continuous Medicare Part A/B coverage for at least 1 year prior to index date.
  - Medicare Part D coverage on index date.
- **Exclusion criteria:**
  - Death or HF hospitalization on index date.
- **Baseline period:** From 1/1/2007 or start date of Part A/B coverage, whichever occurred later, through the index date.
- **Follow-up period:** From index date to the earliest of: endpoint of interest, loss of Part A/B/D coverage, death, or 12/31/2016 (separately for each endpoint).

Figure 1. Study design for example patient.



Baseline characteristics:

- **Demographics:** Identified from enrollment records
- **HF/HFrEF:** Defined by having a diagnosis on ≥1 claim from any source.
- **Comorbid conditions:** Defined by having a diagnosis on ≥1 inpatient or ≥2 outpatient claims on different days.
- **Recent medications:** Defined by having medication supply available on or within 30 days prior to the index date.

Outcomes:

- **Discontinuation:** A 45-day refill gap after the end of supply of the most recent fill.
- **All-cause mortality:** Death via linkage to the National Death Index.
- **Cardiovascular (CV) death:** Disease of the circulatory system (ICD-10: I00-I99) as the underlying cause of death.
- **HF hospitalization:** Hospitalization with HF as the primary discharge diagnosis.

Statistical Analysis:

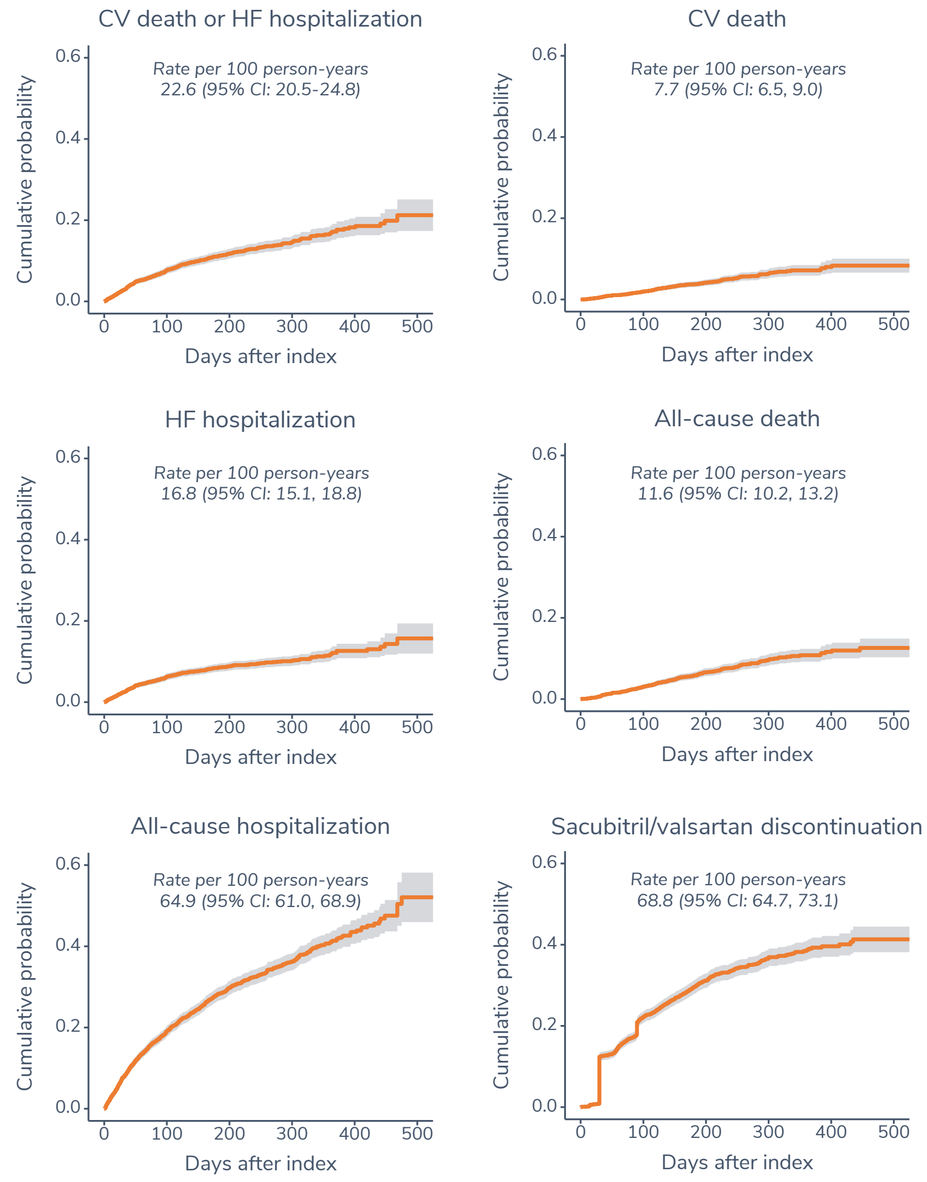
- Cumulative probabilities of clinical outcomes estimated using the cumulative incidence competing risk method.
- Event rates and 95% confidence intervals estimated using Poisson regression.

Results

Table 1. Baseline characteristics of Medicare beneficiaries (2007-2016) initiating treatment with sacubitril/valsartan.

	N=4,111
Age, mean (SD)	72.6 (10.9)
Female sex, N (%)	1,358 (33.0%)
Race, N (%)	
White	3,283 (79.8%)
Black	570 (13.9%)
Other	258 (6.3%)
Any HF diagnosis, N (%)	4,091 (99.5%)
Years since first HF diagnosis, mean (SD)	5.0 (3.2)
Any HFrEF diagnosis, N (%)	3,783 (92.0%)
Comorbid condition history, N (%)	
Hypertension	3,997 (97.2%)
Diabetes	2,520 (61.3%)
Atrial fibrillation	2,389 (58.1%)
Hospitalization for HF	1,078 (26.2%)
Myocardial infarction	2,201 (53.5%)
Cerebrovascular disease	1,751 (42.6%)
Peripheral vascular disease	2,860 (69.6%)
Chronic pulmonary disease	2,606 (63.4%)
Renal disease	1,945 (47.3%)
Recent prescriptions, N (%)	
Angiotensin-converting-enzyme inhibitor	1,214 (29.5%)
Angiotensin II-receptor blocker	795 (19.3%)
Diuretic	2,877 (70.0%)
Beta-blocker	3,583 (87.2%)
Mineralocorticoid-receptor antagonist	1,512 (36.8%)
Sacubitril/valsartan dose at index	
24/26 mg	2,602 (63.3%)
49/51 mg	1,185 (28.8%)
97/103 mg	324 (7.9%)

Figure 2. Cumulative incidence and 95% confidence interval (CI) of clinical events after initiation of sacubitril/valsartan.



Conclusions

- For the sacubitril/valsartan users in this cohort:
  - There was a high baseline comorbidity burden.
  - Rates of hospitalization and mortality were high, and 2/3 of deaths were attributable to CV causes.
  - Discontinuation of sacubitril/valsartan therapy was common.
- The Medicare 20% sample with linkage to the National Death Index represents a valuable tool for examining the effectiveness and safety of sacubitril/valsartan therapy

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