

Reductions in real-world healthcare resource utilization among United States hereditary angioedema (HAE) patients following berotralstat initiation

Poster
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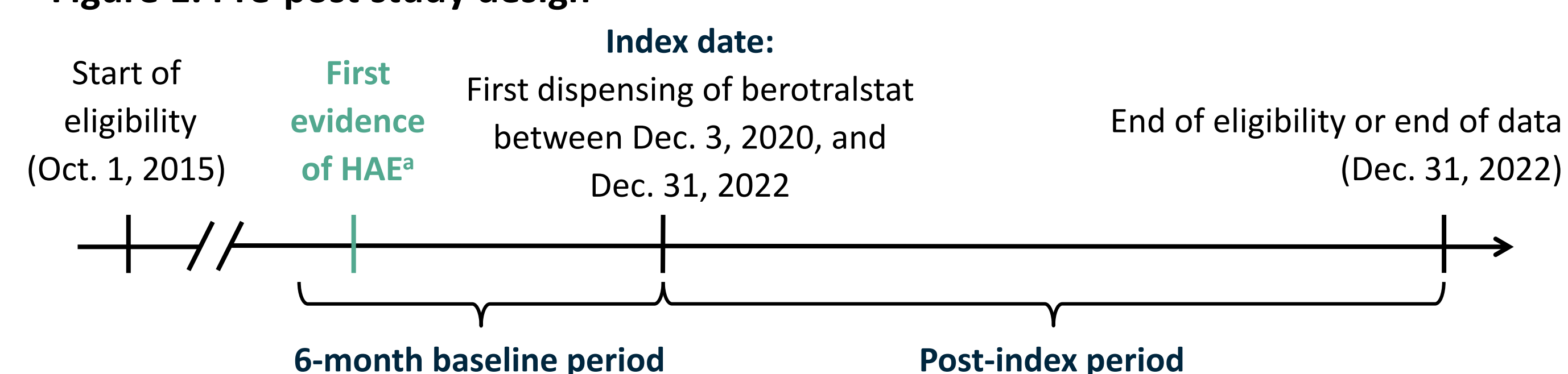
Introduction

- Hereditary angioedema (HAE) is a rare inherited disease characterized by unpredictable, potentially life-threatening recurrent swelling attacks most commonly affecting the extremities, face, abdomen, and larynx¹⁻³.
- The management of HAE includes treatment with on-demand (acute) medications to minimize the duration and severity of HAE attacks, as well as long-term prophylaxis (LTP) to prevent attacks and reduce attack severity^{3,4}.
- Treatment goals for HAE include minimizing morbidity, preventing mortality, and normalizing patients' lives^{3,5,6}.
- Berotralstat is a first-line, once-daily highly selective oral inhibitor of plasma kallikrein approved for prophylaxis of HAE attacks in patients ≥12 years old⁷.
- Here, we report healthcare resource utilization (HRU) before and after initiation of berotralstat in the US.

Methods

- This retrospective real-world study used 2015–2022 administrative claims data from Komodo's Healthcare Map (Figure 1).

Figure 1. Pre-post study design

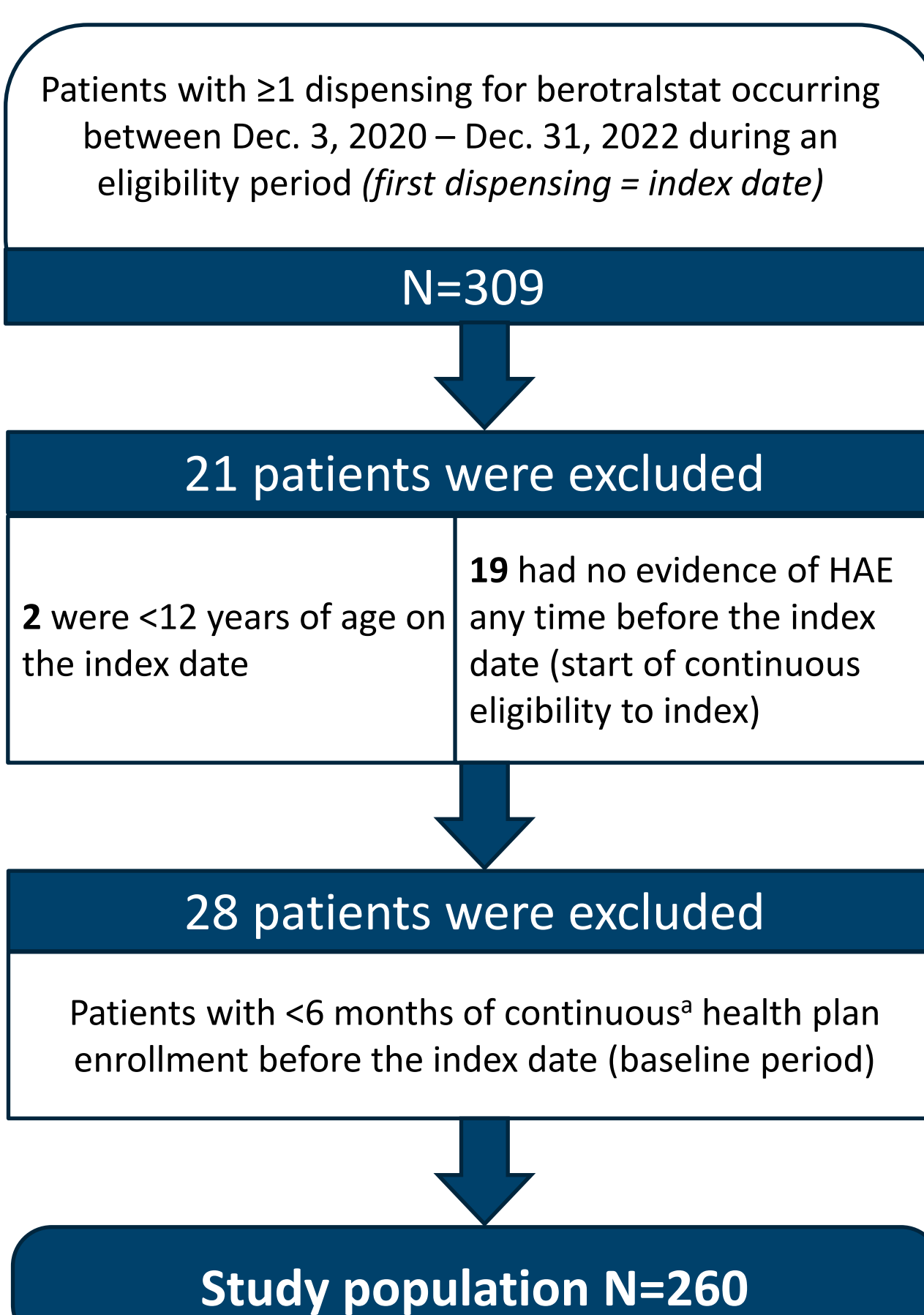


^aFirst evidence of HAE was assessed any time pre-index. Evidence of HAE was defined as a pharmacy or medical claim for an HAE on-demand or LTP medication; an angioedema or HAE diagnosis (in any position); or diagnostic tests for complement function. If the first evidence of HAE was ≥6 months pre-index, then the pre-index period was 6 months; if the first evidence of HAE was <6 months pre-index, then the pre-index period spanned from the first evidence of HAE to the index date.

- HRU captured inpatient hospitalizations and outpatient (OP) or emergency room (ER) visits for all-cause and angioedema-related care.
- Angioedema-related HRU was defined using claims with a primary diagnosis code for HAE or angioedema, on-demand or LTP medications, and diagnostic tests for complement components associated with HAE.
- Per person-year (PPY) rates of HRU were calculated to account for varying length of observation across patients and calculated as the total frequency of events divided by the observation period in years to obtain the annualized rates, which were then weighted by patients' observation period in years (pre- and post-index).
- Rates of visits were compared post- versus pre-index using rate ratios (RRs), 95% confidence intervals (CIs), and p-values from generalized estimating equations (GEE) Poisson regression models with robust standard errors.
- HRU results were evaluated for the full study population and by HAE treatment history subgroups (Table 1).

Results

Figure 2. Study population eligibility criteria



^aContinuous health plan enrollment was defined as continuous health plan enrollment with medical and pharmacy coverage.

Table 1. Demographics and clinical characteristics

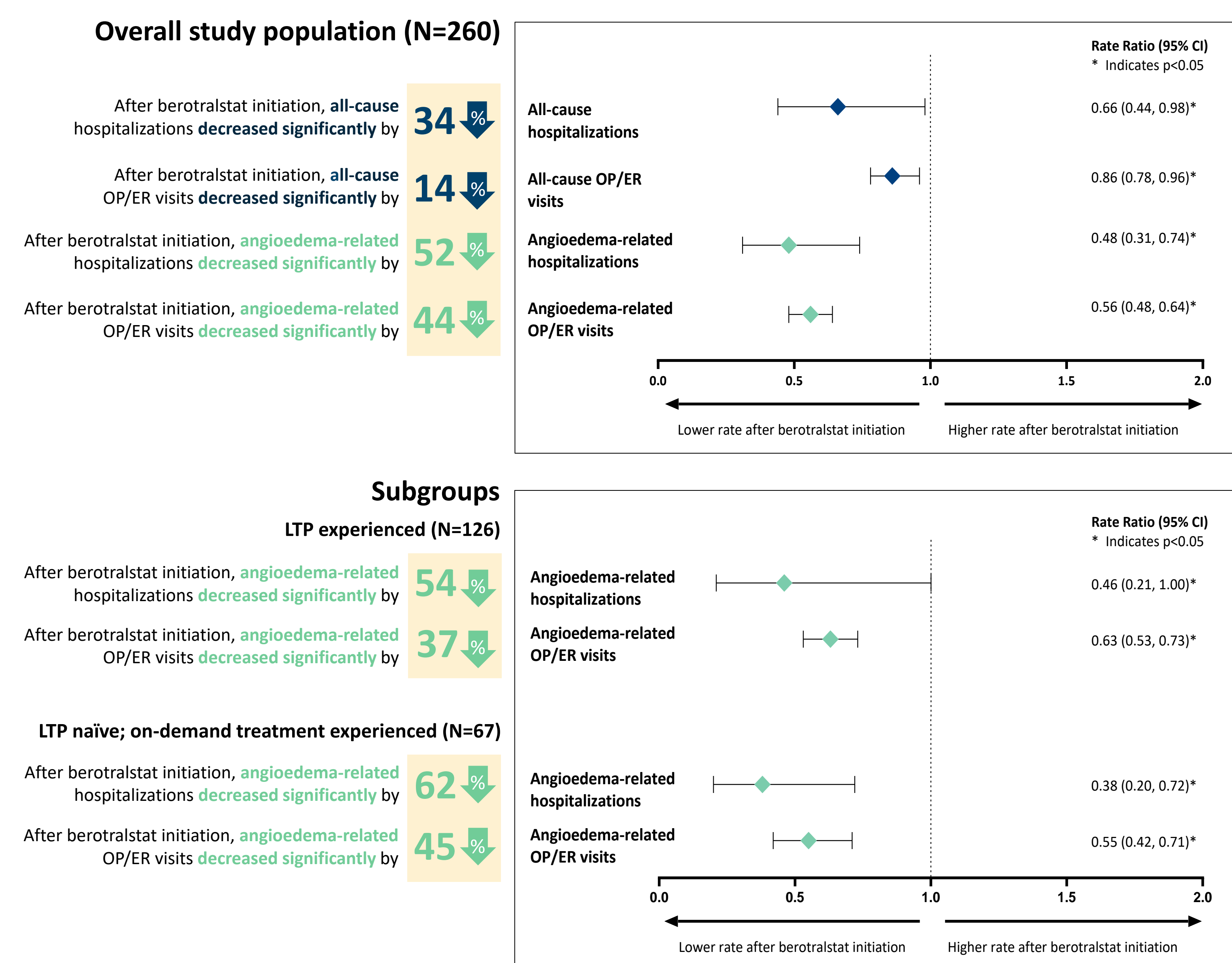
Characteristic	Berotralstat users (N=260)
Insurance plan type at index, n (%)	
Commercial	140 (53.8)
Medicaid	56 (21.5)
Medicare	15 (5.8)
Other/Unknown ^a	49 (18.8)
Physician specialty at index, n (%)	
Allergist/immunologist	177 (68.1)
Primary care provider	31 (11.9)
Other	2 (0.8)
Missing	50 (19.2)
HAE treatment history any time before berotralstat initiation, n (%)	
LTP experienced	126 (48.5)
LTP naïve	134 (51.5)
With on-demand treatment	67 (25.8)
Other ^b	67 (25.7)

^aOther or unknown insurance type includes CHIP, self-insured, and patients with multiple plans.
^bWithout evidence of a claim for on-demand treatment during period of insurance enrollment.

39.7 (16.2) Mean (SD) years of age	74.2% Female
36.2% South	25.0% Midwest
19.6% West	18.8% Northeast
0.4% Unknown	

- 309 patients with ≥1 dispensing for berotralstat were identified (Dec. 3, 2020 – Dec. 31, 2022) and 260 patients met the inclusion and exclusion criteria (Figure 2).
- A majority of berotralstat users were female, had commercial insurance during the first dispensing, and were prescribed by an allergist or immunologist (Table 1).
- Mean (median) follow-up duration was 12 (13) months for the overall study population, 13 (13) months among patients with LTP experience, and 13 (14) months among LTP naïve with on-demand treatment experience.
- The most common baseline HAE symptoms included swelling, edema, or breathing difficulties (50%) and pain (37%); most common baseline differential diagnoses included food/drug allergy or hypersensitivity reaction (18%) and urticaria (13%).
- The most common comorbidities at baseline included gastrointestinal (GI) diseases (28%), allergic rhinitis (27%), hypertension (22%), anxiety disorders (20%), hyperlipidemia (17%), asthma (15%), obesity (13%), depression (13%), autoimmune diseases (12%), migraine (11%), and sleep-wake disorders (10%).
- Prior to initiating berotralstat, 46% of patients had at least one dispensing/administration for at least one of the following medications at baseline: glucocorticoids, antihistamines, epinephrine, or omalizumab.

Figure 3. Healthcare resource utilization in the overall study population and subgroups



Conclusion

- After the initiation of berotralstat, **significant reductions** were observed in the overall rates of all-cause and angioedema-related hospitalizations and OP/ER visits in the real world (Figure 3).
- Rate reductions were observed in both treatment naïve and LTP experienced patients.

Limitations include:

- Retrospective administrative claims data are vulnerable to inaccuracies in diagnosis, procedure, or drug codes and missing data.
- As with all claims data, dispensed medication does not mean that the medication was necessarily consumed or taken as prescribed.
- Over-the-counter medications are not captured.

References

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