Poster ID: R082

Treatment and Healthcare Resource Utilization in Adolescent Patients with Hereditary Angioedema: US Claims Database Analysis

Adil Adatia,[1] Timothy Craig,[2] Raffi Tachdjian,[3] H. Henry Li,[4] Daniel F. Soteres,[5] Maeve O'Connor,[6] Sandra Christiansen,[7] Aditya Sehgal,[8] Alice Wang[9]

[1]University of Alberta, Edmonton, AB, Canada; [2]The Pennsylvania State University, Hershey, PA, USA; Vinmec International Hospital, Times City, Hanoi, Vietnam; and VinUniversity, Hanoi, Vietnam; [3]University of California, Los Angeles, School of Medicine, Los Angeles, CA, USA; [4]Institute for Asthma and Allergy, Wheaton, MD, USA; [5]Asthma & Allergy Associates, PC and Research Center, Colorado Springs, CO, USA; [6]Integrative Allergy & Immunology Care, LLC, Charlotte, NC, USA; [7]University of California, San Diego, La Jolla, CA, USA; [8]PharmSight, Haryana, India; [9]KalVista Pharmaceuticals, a company of the Chiesi Group, Cambridge, MA, USA

Please visit the KalVista virtual medical booth after the presentation to view this poster

Key Takeaways

Healthcare resource utilization is substantial among adolescents with HAE despite the availability of multiple treatments

30% Adolescents with ≥1 HAE-related emergency room (ER) visit with a mean of 5 visits per patient per year

HAE-related ER utilization was higher among patients who received intravenous vs subcutaneous on-demand treatments

Background

- Hereditary angioedema (HAE) is characterized by unpredictable, painful, and debilitating attacks that negatively affect health-related quality of life (HRQoL)[1]
- Injectable on-demand treatments for HAE attacks may be particularly challenging for adolescent patients to administer due to needle phobia and anticipation of pain[1]
  - Adolescents often require assistance from a caregiver or healthcare provider administering injectable on-demand treatment and commonly receive it at a medical facility[1]
- Real-world evidence on treatment utilization and associated healthcare resource utilization (HRU) in adolescents with HAE is limited

Objective

- To characterize real-world use of on-demand treatments and HRU among adolescent patients with HAE in the US

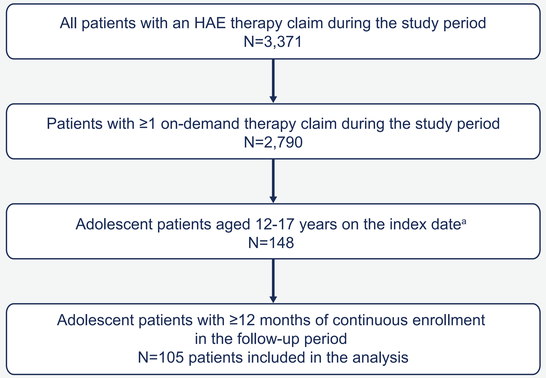
Methods

Study Design

- Using the IQVIA PharMetrics® Plus Closed Health Plan Claims Database, this analysis included US claims data from January 1, 2021, to December 31, 2024
  - Adolescent patients with hereditary angioedema with C1-inhibitor protein deficiency (HAE-C1INH) aged 12-17 years with ≥1 claim for an on-demand treatment and ≥12 months of continuous enrollment from the index date (the date of the first on-demand treatment claim) were included (**Figure 1**)
- The mean number of doses of on-demand treatment with US Food and Drug Administration–approved intravenous (IV) plasma-derived C1 inhibitor (pdC1INH; Berinert), IV recombinant human C1 inhibitor (rhC1INH; Ruconest), or ecallantide (Kalbitor), and off-label treatment with icatibant (Firazyr or generic), were estimated across the 12-month follow-up period
  - A standard on-demand treatment dose was defined as 4 pdC1INH vials, 1 icatibant syringe, 2 rhC1INH vials, or 3 ecallantide vials
- Outcomes assessed included on-demand treatment doses, long-term prophylaxis usage patterns, and HRU
- Statistical analyses included descriptive measures

Results

Figure 1. Adolescent Patient Attrition



[a]The index date was the date of the first on-demand treatment claim during the study period for the on-demand treatment with the highest number of claims for a particular patient.
HAE, hereditary angioedema.

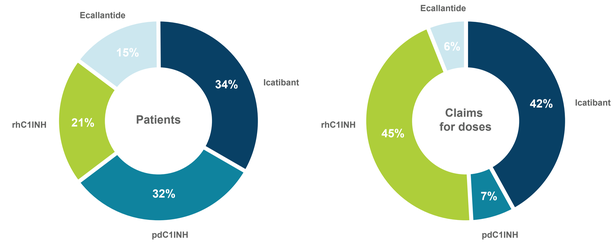
- A total of 105 adolescent patients with HAE aged 12-17 years were included in this analysis (**Table 1**)

Table 1. Study Sample Demographics

	Study sample N=105
Age, mean (range), years	14.6 (12-17)
Sex, female, n (%)	61 (58)
Region, n (%)	
Northeast	13 (12)
Midwest	31 (30)
West	32 (30)
South	29 (28)

- When analyzed per patient, icatibant had the greatest number of claims, followed by IV pdC1INH (**Figure 2**)
  - When analyzed by on-demand treatment dose claims, IV rhC1INH and icatibant represented 45% and 42% of the total, respectively

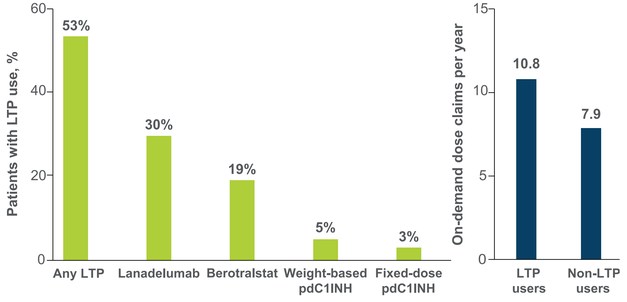
Figure 2. Adolescent Patients with Claims and Treatment Doses per Individual On-demand Therapy



pdC1INH, plasma-derived C1 inhibitor; rhC1INH, recombinant human C1 inhibitor.

- The mean number of on-demand doses per patient per year was 9.2
  - IV rhC1INH had the highest number of mean treatment doses per year (19.9), followed by icatibant (11.3), ecallantide (3.5), and IV pdC1INH (1.9)
- Over half of patients (53%; n=56) had ≥1 non-androgen LTP claim (**Figure 3**)
  - The mean number of on-demand doses per patient per year was 10.8 among LTP users and 7.9 among non-LTP users

Figure 3. LTP Claims and Mean On-demand Claims by LTP Use[a]



[a]LTP users (n=47) defined as patients with at least 4 LTP claims during follow-up, which did not have to be the same LTP.
LTP, long-term prophylaxis; pdC1INH, plasma-derived C1 inhibitor.

- Almost one-third of patients (30%) utilized the emergency department, with the highest rate of emergency room visits in patients with claims for IV pdC1INH (**Table 2**)

Table 2. HAE-related Healthcare Visits

	Overall N=105	IV pdC1INH n=34	Icatibant n=36	IV rhC1INH n=22	Ecallantide n=16
Patients with ≥1 healthcare visit, n (%)					
Emergency room	31 (30)	15 (44)	6 (17)	6 (27)	5 (31)
Inpatient	5 (5)	3 (9)	2 (6)	0	1 (6)
Home health	19 (18)	9 (26)	5 (14)	5 (23)	2 (13)
Outpatient	79 (75)	28 (82)	26 (72)	15 (68)	13 (81)
Mean number of healthcare visits per year, n					
ER	4.9	3.9	2.3	4.0	11.4
Inpatient	1.4	1.3	1.5	0	2.0
Home health	2.2	2.4	1.0	3.0	1.0
Outpatient	4.1	3.3	4.2	4.1	5.4

ER, emergency room; HAE, hereditary angioedema; IV, intravenous; pdC1INH, plasma-derived C1 inhibitor; rhC1INH, recombinant human C1 inhibitor.

Limitations

- Claims data for on-demand treatment doses are a proxy measure and may not equal the number of attacks for which the on-demand treatment was administered
- It is also possible that some claims for treatment doses were utilized for reasons other than on-demand treatment of acute attacks (eg, for short-term prophylaxis)

References

1. Yong PFK, et al. *Allergy Asthma Clin Immunol.* 2025;21(1):52.

Acknowledgments

Medical writing assistance was provided under the guidance of the authors by Josh Rodman, PhD, of ApotheCom, San Francisco, CA, USA, and was funded by KalVista Pharmaceuticals, a company of the Chiesi Group.

Disclosures

Adil Adatia reports receiving grants from ADARx, Astria, BioCryst, CSL Behring, Ionis, KalVista Pharmaceuticals, Octapharma, Pharvaris, and Takeda; receiving consulting fees, payments, or honoraria for lectures, presentations, speaker bureaus, manuscript writing, or educational events, and support for attending meetings and/or travel from BioCryst, CSL Behring, KalVista Pharmaceuticals, Pharvaris, and Takeda.

This study was funded by KalVista Pharmaceuticals, a company of the Chiesi Group.

Presented at the ACAAI 2026 Annual Scientific Meeting; November 12-16, 2026; Phoenix, AZ, USA

Copyright © 2026 KalVista Pharmaceuticals, a company of the Chiesi Group. All rights reserved.