

Adherence to Long-Term Prophylaxis for Hereditary Angioedema and the Impact on On-demand Treatment Claims in the US

Daniel F. Soteres¹, Raffi Tachdjian², Maeve O'Connor³, Chirag Maheshwari⁴, Alice Wang⁵, Paul K. Audhya⁵, Timothy Craig⁶

¹Asthma & Allergy Associates, PC and Research Center, Colorado Springs, CO, USA; ²University of California, Los Angeles, School of Medicine, Los Angeles, CA, USA; ³Integrative Immunology Care, LLC, Charlotte, NC, USA; Allergy, Asthma, & Immunology Research Institute, Charlotte, NC, USA; ⁴Pharmsight, Haryana, India; ⁵KalVista Pharmaceuticals, Cambridge, MA, USA; ⁶The Pennsylvania State University School of Medicine, Hershey, PA, USA, and Vinmec International Hospital, Times City, Hanoi, Vietnam

Introduction

- Most patients with hereditary angioedema (HAE) in the United States (US) are treated with long-term prophylaxis (LTP), which requires parenteral regimens or daily oral dosing¹
- Despite receiving LTP, patients with HAE still need access to on-demand treatments per clinical treatment guideline recommendations²
- There have been no new commercialized on-demand treatments over the past decade, and real-world data for on-demand treatment use among LTP users and LTP refill patterns are limited^{2,3}

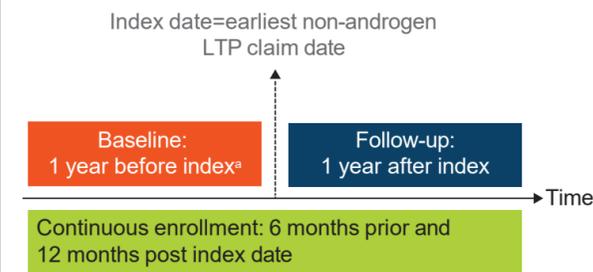
Objective

- To characterize LTP adherence and patterns of on-demand treatment refills using a large national administrative claims database

Methods

- Eligible commercially insured patients from the IQVIA PharMetrics® Plus Database (January 2016–September 2023) who had ≥1 claim for non-androgen LTP with ≥6 months of continuous enrollment before and ≥12 months after the index date (first non-androgen LTP claim) were included (Figure 1)
- Patients with multiple LTP claims on the index date or with an annualized claim amount more than mean ±3 times the standard deviation (SD; ie, outliers) were excluded
- Patients were classified into the following cohorts: no/minimal refill gaps, with refill gaps, or switchers (Figure 2)

Figure 1. Longitudinal retrospective study design

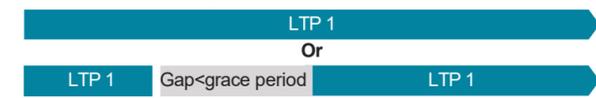


- Outcomes**
- Adherence to LTP based on proportion of days covered (PDC)
 - On-demand doses (assessed at baseline and follow-up)

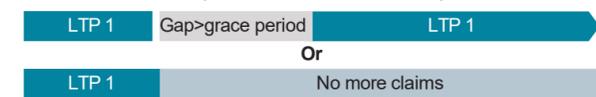
LTP, long-term prophylaxis.
^aFor patients with a baseline period shorter than 364 days, these data are annualized; for patients with a baseline period of 364 days or longer, the entire 12-month period is considered without annualization.

Figure 2. LTP patient cohort definitions

No/minimal refill gaps: Patients with no prescription gap >60 days for lanadelumab or >30 days for other LTPs



With refill gaps: Patients who discontinued their LTP or had ≥1 gap between refills >60 days for lanadelumab or >30 days for other LTPs



Switchers: Patients with ≥1 non-index LTP claim during the 12-month follow-up, regardless of gaps between treatments or whether patients return to index treatment



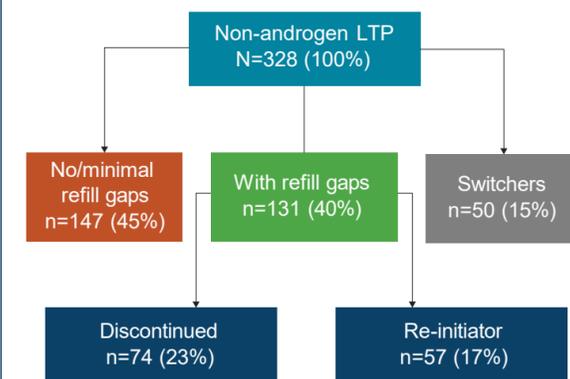
LTP 1 is the LTP at index date; LTP 2 is any non-index LTP.
 LTP, long-term prophylaxis.

- Proportion of days covered (PDC) was calculated as the percentage of days covered by index LTP prescription fills during follow-up for both the cohorts with refill gaps and without (ie, no/minimal refill gaps). A high PDC percentage signifies good adherence to chronic treatment regimens, commonly accepted with a threshold of 80%⁴
- Annualized mean on-demand claims were evaluated 12 months before and after index date

Results

- Most enrolled patients (N=328) were female (230/328; 70%) with a mean (SD) age at index date of 41.2 (15.6) years
- At enrollment the most common LTP used by patients was subcutaneous (SC) lanadelumab injection (42.1% [138/328]), followed by SC C1 esterase inhibitor (C1INH; 29.6% [97/328]), intravenous C1INH (16.5% [54/328]), and oral berotralstat (11.9% [39/328])
- LTP users were distributed almost equally across the 2 cohorts with no/minimal refill gaps and those with refill gaps, followed by about a sixth who were switchers (Figure 3)

Figure 3. Patient cohort populations



LTP, long-term prophylaxis.

- Mean PDC among those patients with minimal or no refill gaps was 93% compared with 42% among those with refill gaps (Table 1)

Table 1. Mean PDC by cohort

Cohort	n	Mean days covered	Mean PDC
No/minimal refill gaps	147	339	93%
With refill gaps	131	155	42%
Discontinued	74	105	29%
Re-initiator	57	220	60%

PDC, proportion of days covered.

- The proportion of patients requiring >27 on-demand doses annually was decreased in patients with no/minimal refill gaps (16% vs 9%) after initiation of LTP, but remained similar in the patients with refill gaps (13% vs 11%) (Figure 4)
- Overall (N=328), 67.1% (220/328) of LTP users had ≥1 post-index on-demand claim with a median (interquartile range) of 9.0 (3–20.3) doses at follow-up

– Mean (SD) annualized on-demand doses post-LTP (ie, follow-up) decreased significantly for the no/minimal refill gap cohort (P=0.001), remained the same for the cohort with refill gaps (P=0.769), and increased in the switchers cohort (P=0.12) (Table 2)

- A reduction in on-demand doses was more likely among patients with no/minimal refill gaps than patients with refill gaps (odds ratio [95% CI]: 1.43 [1.24–1.65]) or those who had switched LTP therapies (odds ratio [95% CI]: 2.04 [1.60–2.60])

Table 2. Summary of on-demand doses pre- and post-index LTP by LTP cohort

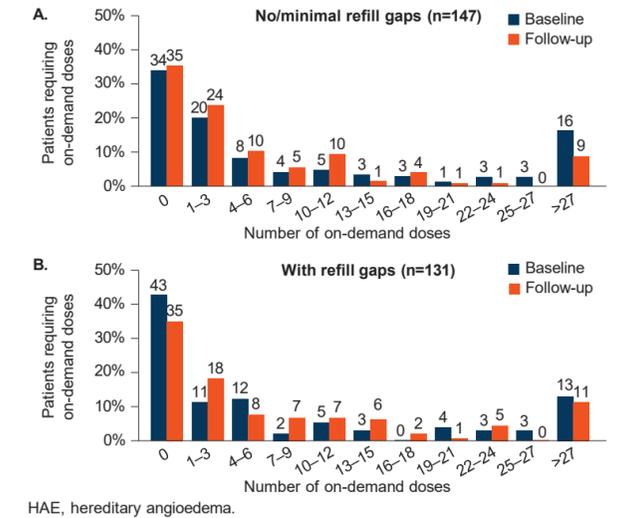
Parameter	Number of on-demand doses per patient per year							
	Overall LTP (N=328)		No/minimal refill gaps (n=147)		With refill gaps (n=131)		Switchers (n=50)	
	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
All patients								
Mean (SD)	13.1 (21.5)	11.8 (19.7)	13.6 (22.5)	8 (13.5)	10.5 (17.4)	11.5 (19.8)	18.5 (26.8)	23.9 (28.4)
Patients with ≥1 on-demand dose, n (%)	207 (63.1)	220 (67.1)	96 (65.3)	95 (64.6)	75 (57.3)	84 (64.1)	36 (72.0)	41 (82.0)
Mean (SD)	20.8 (24.0)	17.7 (21.8)	20.8 (25.1)	12.4 (15.2)	18.3 (19.7)	18.0 (22.3)	25.7 (28.7)	29.2 (28.8)

LTP, long-term prophylaxis; SD, standard deviation.

Conclusions

- This commercial claims analysis found 55% of patients treated with LTP had substantial refill gaps in their claims, discontinued, or switched within a year from initiation
- Within 1 year of LTP initiation, there was a significant decrease in on-demand doses in patients with no/minimal refill gaps. On-demand doses did not decrease in patients with refill gaps
- Greater focus may be necessary on monitoring LTP effectiveness and adherence as well as ensuring ready access to on-demand treatment for patients receiving LTP

Figure 4. Distribution of patients with HAE by number of on-demand doses



HAE, hereditary angioedema.

Acknowledgements
 Medical writing support was provided by Marisa DeGuzman, PhD, of Oxford PharmaGenesis Inc., Wilmington, DE and funded by KalVista Pharmaceuticals, Inc.

Disclosures
 Daniel Soteres has served on Advisory Boards for BioCryst, CSL Behring, KalVista, Pharming, and Takeda; received research support from Astra, BioCryst, Ionis, KalVista, Pharming, Pharvaris, and Takeda; and had received honoraria for lectures from BioCryst, CSL Behring, Pharming, and Takeda. Raffi Tachdjian has served on Advisory Boards for Astra, BioCryst, CSL Behring, Ionis, KalVista, Pharming, and Takeda; received research support from Astra, BioCryst, CSL Behring, Ionis, KalVista, Pharming, Pharvaris, and Takeda; and had received honoraria for lectures from BioCryst, CSL Behring, Pharming, and Takeda.

Maeve O'Connor is a speaker/consultant/advisor or researcher for KalVista, Pharming, CSL, GSK, Blueprint, TEVA, AZ, Sanofi, Grifols, and AbbVie; and Chief Medical Officer of the CIIC.

Chirag Maheshwari received consulting fees from KalVista.

Paul Audhya is an employee of KalVista.

Alice Wang is an employee of KalVista.

Timothy Craig received research support and was a consultant for CSL Behring, Ionis, Takeda, BioCryst, BioMarin, KalVista, Pharvaris, Intellia, and Astra; received speaker fees from CSL Behring and Takeda, and travel support from CSL Behring, Takeda, and BioCryst.

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