

# Anxiety Associated with Parenteral On-Demand Treatment for Hereditary Angioedema Attacks

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## Background

- WAO/EAACI 2021 updated guidelines recommend that all hereditary angioedema (HAE) patients consider treating all attacks regardless of severity or location as early as possible<sup>1</sup>
- All currently approved on-demand treatments for HAE attacks require parenteral administration which can be challenging to administer and result in increased anxiety and treatment burden<sup>2</sup>

## Objective

- To characterize anxiety specifically related to using parenteral on-demand treatment for HAE attacks in patients with HAE type 1 or 2

## Methods

- People with Type 1 or Type 2 HAE were recruited through the Italian Network for Hereditary and Acquired Angioedema (ITACA) registry between September 2023 and March 2024
- The survey was self-reported, and took respondents approximately 20 minutes to complete
- Study population (≥12 years of age) included respondents that had treated at least one HAE attack within the prior three months with an approved on-demand therapy
- Anxiety was rated on a scale of 0 (not at all anxious), 1-3 (mildly anxious), 4-6 (moderately anxious) and 7-10 (extremely anxious)<sup>3</sup>
- Results from an interim analysis are presented (N=56) for respondents recruited between September 2023 and January 2024

## Results

Table 1. Patient Demographics and Clinical Characteristics

Characteristic	Total (N=56)	On-Demand Only (n=25)	Long-Term Prophylaxis (n=31)	Adult (n=48)	Adolescent (n=8)
Current Age (Years; Mean)	41	41	40	45	15
Age of Diagnosis (Years; Mean)	17	21	14	19	8
Gender					
Male	41%	40%	42%	38%	63%
Female	59%	60%	58%	63%	38%
HAE Type					
Type I	91%	96%	87%	92%	88%
Type II	9%	4%	13%	8%	13%
Time Since Last Attack (Weeks; Mean)	2.9	2.9	3	2.9	3.1

- There were 56 respondents, including 48 adults and 8 adolescents (<18 years)
- 55% were receiving long-term prophylaxis at the time of their most recent treated HAE attack
- Anxiety was the second most common comorbid condition, with 13% (7/56) of respondents diagnosed by a physician (females 9%; males 17%; adults 15%; adolescents 0%)

Figure 1. On-Demand Therapy Used for Last Treated Attack

On Demand Therapy	% of Patients			
	On-Demand Only Treatment (n=25)	On-Demand Treatment + LTP (n=31)	Adults (n=48)	Adolescents (n=8)
Icatibant	55%	44%	63%	13%
Plasma derived C1 esterase inhibitor (BERINERT)	43%	56%	35%	88%
Plasma derived C1 esterase inhibitor (CINRYZE)	2%	3%	2%	0%

Figure 2. Long-Term Prophylaxis at the Time of Last Treated Attack (n=31)

Long-Term Prophylaxis	% of Patients	
	Adults (n=26)	Adolescents (n=5)
Lanadelumab	45%	0%
Plasma derived C1 esterase inhibitor (CINRYZE)	29%	100%
Berotralstat	10%	0%
Danazol	10%	0%
Plasma derived C1 esterase inhibitor (Berinert)	3%	0%
Tranexamic acid	3%	0%

Table 2. Reported Level of Anxiety Associated with Treating Most Recent Attack

Level of Anxiety (On Scale of 0-10)	Total (N=56)	Anxiety Diagnosis (n=7)	On-Demand Only (n=25)	LTP + On-Demand (n=31)	Adults (n=48)	Adolescents (n=8)
Extremely Anxious (7-10)	15 (27%)	3 (43%)	6 (24%)	9 (29%)	11 (23%)	4 (50%)
Moderately Anxious (4-6)	10 (18%)	3 (43%)	7 (28%)	3 (10%)	8 (17%)	2 (25%)
Mildly Anxious (1-3)	18 (32%)	0	8 (32%)	10 (32%)	16 (33%)	2 (25%)
Not Anxious (0)	13 (23%)	1 (14%)	4 (16%)	9 (29%)	13 (27%)	0

- 43 out of 56 respondents (77%) were mildly, moderately, or extremely anxious about using parenteral on-demand treatment
- 65% of those taking subcutaneous treatment and 83% taking intravenous treatment reported feeling anxious
- Respondents previously diagnosed with an anxiety disorder and adolescents had the highest levels of anxiety

Figure 3. Reported Reasons for Feeling Anxious about Treating Most Recent Attack with Parenteral On-Demand Treatment Among Those Patients who Felt Anxious (n=43)

Reasons for Anxiety	Ranked 1 <sup>st</sup>			
	On-Demand Only Treatment (n=21)	On-Demand Treatment + LTP (n=22)	Adults (n=35)	Adolescents (n=8*)
Uncertainty about how long the treatment would take to begin working	16%	10%	23%	25%
Desire not to 'waste' an on-demand treatment if the attack was less severe than I thought	14%	14%	14%	17%
Worry about a rebound attack after the first treatment	14%	14%	14%	13%
Anticipating burning or pain with the injection	9%	14%	5%	9%
Anticipating side effects from the injection	7%	5%	9%	6%
Finding the vein to start the intravenous infusion	5%	5%	5%	6%
Running out of on-demand treatment if I needed it later	5%	0%	9%	6%
Uncertainty about whether the treatment would work	5%	5%	5%	3%
Finding someone to help me administer the treatment	5%	10%	0%	6%
Finding a private area to administer the treatment	5%	10%	0%	3%
Uncertainty if the attack would become severe enough to treat	5%	0%	9%	3%
The need to use a second dose for the same attack	5%	10%	0%	6%
The cost of the on-demand treatment	2%	0%	5%	3%
The process of preparing my treatment	2%	5%	0%	3%
I am afraid of needles	2%	0%	5%	3%

## Conclusions

- A substantial proportion of survey respondents experienced moderate to extreme anxiety due to anticipated use of on-demand treatment, particularly adolescents and those previously diagnosed with anxiety
- Reasons for anxiety were most commonly related to uncertainty how long treatment would take, desire not to waste treatment, worry about a rebound attack, and burning, pain, and side effects from injection
- Education on rationale for compliance with guideline and effective alternatives to current injectable on-demand treatments are needed to address treatment-related anxiety associated with HAE attacks
- Results from the full cohort (N=101) will be presented at a future meeting

## Presented

Global Angioedema Forum (GAF) 2024, October 4 & 5, Copenhagen, Denmark.

To view this poster after the presentation, visit KalVista Virtual Medical Booth.



## References

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## Disclosures

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