Impact of Delayed Treatment of Hereditary Angioedema Attacks: Insights from Patient Surveys from Europe

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Rationale

- WAO/EAACI guidelines recommend the early use of on-demand treatment following recognition of a hereditary angioedema (HAE) attack to reduce morbidity and prevent mortality[1-3]
- Administration of parenteral on-demand therapies has been associated with delayed treatment of attacks[4]
- We present data from a survey of patients from Europe describing time to treatment with parenteral HAE therapies, barriers to timely treatment, and the impact of delayed treatment on attack severity and patients' quality of life (QoL) during an attack

Methods

- Patients with Type 1 and 2 HAE due to C1 inhibitor deficiency (HAE-C1INH) were recruited by ITACA (Italy), AMSAO (France), HAEUK (UK), and HZRM and Charité – Universitätsmedizin (Germany) to complete an online survey between April 2023 and April 2025
- Eligible respondents were ≥12 years old and treated ≥1 HAE attack within the 3 months prior to the survey using an approved on-demand therapy
- QoL during the last treated attack was assessed using the EuroQol Five-Dimensions Five-Level (EQ-5D-5L), with the recall period adapted to "during last treated attack"

Results

Table 1. Patient Demographics and Clinical Characteristics

Characteristic	Total (N=239)	Adults (n=220)	Adolescents (n=19)
Current Age in Years, mean (SD)	41.5 (16.0)	43.8 (14.5)	14.2 (1.7)
Age of Diagnosis in Years, mean (SD)	17.5 (14.0)	18.5 (14.1)	5.6 (3.5)
Gender[a], n (%)			
Female	157 (65.6%)	148 (67.3%)	9 (47.4%)
Country, n (%)			
Italy	101 (42.3%)	87 (39.5%)	14 (73.7%)
Germany	49 (20.5%)	47 (21.4%)	2 (10.5%)
United Kingdon	48 (20.1%)	46 (20.9%)	2 (10.5%)
France	41 (17.2%)	40 (18.2%)	1 (5.3%)
HAE Type, n (%)			
Type I	222 (92.9%)	205 (93.2%)	17 (85.5%)
Type II	11 (4.6%)	10 (4.5%)	1 (5.3%)
Unknown (Either Type I or II)	6 (2.5%)	5 (2.3%)	1 (5.3%)
Time Since Last Treated Attack in Days, mean (SD)	22.9 (22.1)	23.3 (21.9)	18.8 (25)
Use of Long-term Prophylaxis, n (%)	142 (59.4%)	128 (58.2%)	14 (73.7%)

[a]One respondent indicated they preferred not to respond

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

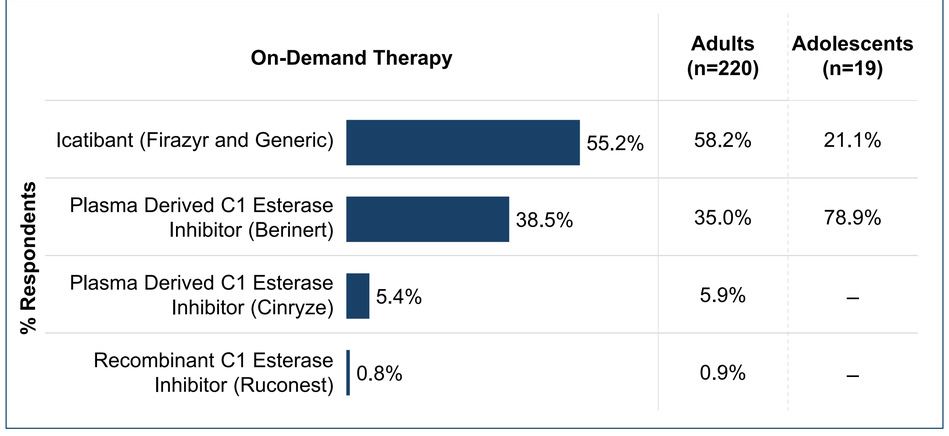
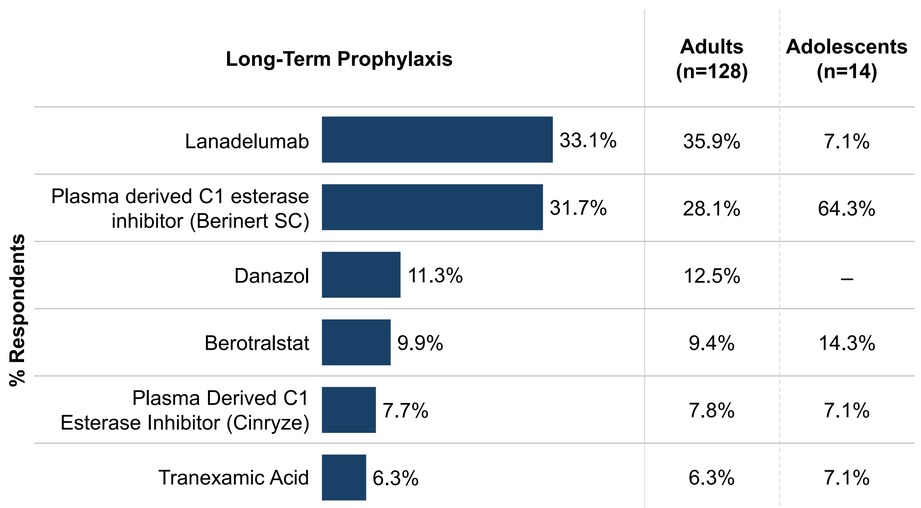
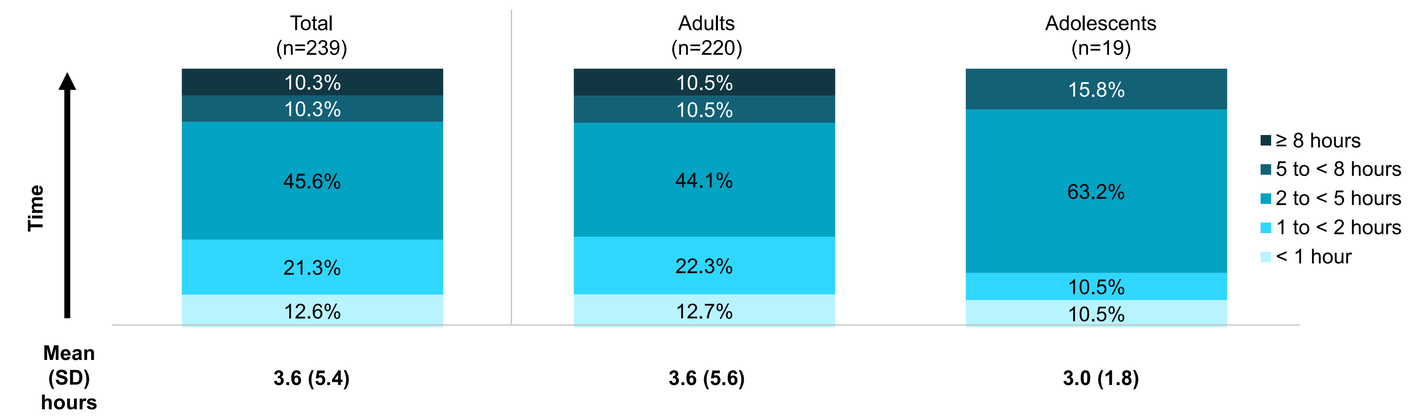


Figure 2. Long-term Prophylaxis at Time of Last Treated Attack



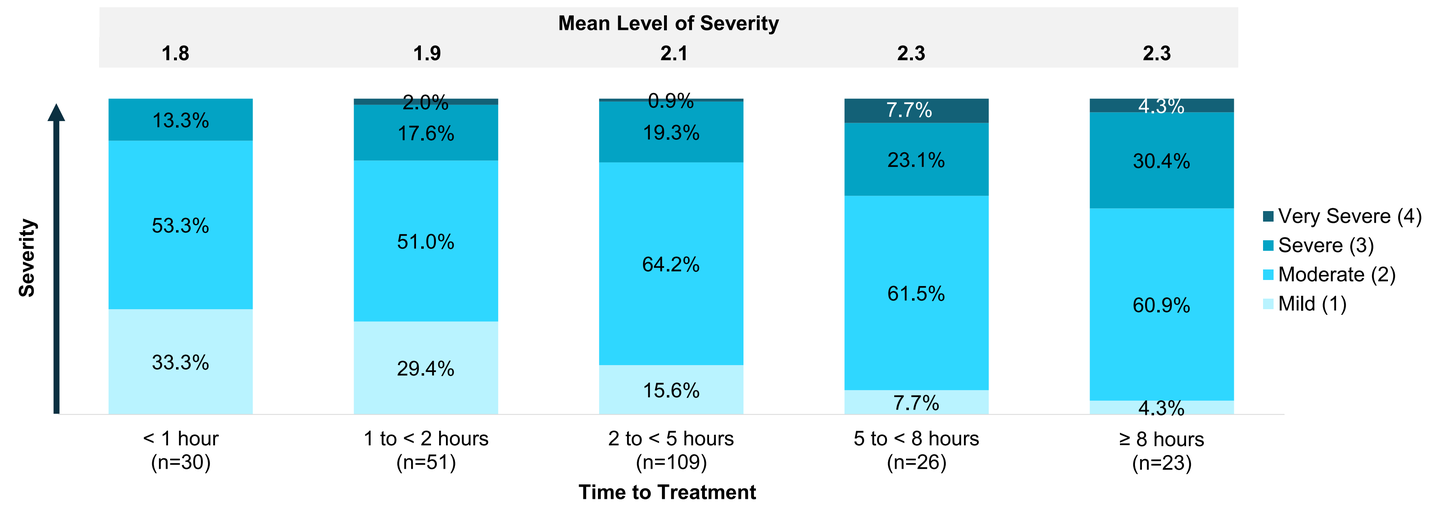
Results

Figure 3. Time to Treatment with On-demand Therapy



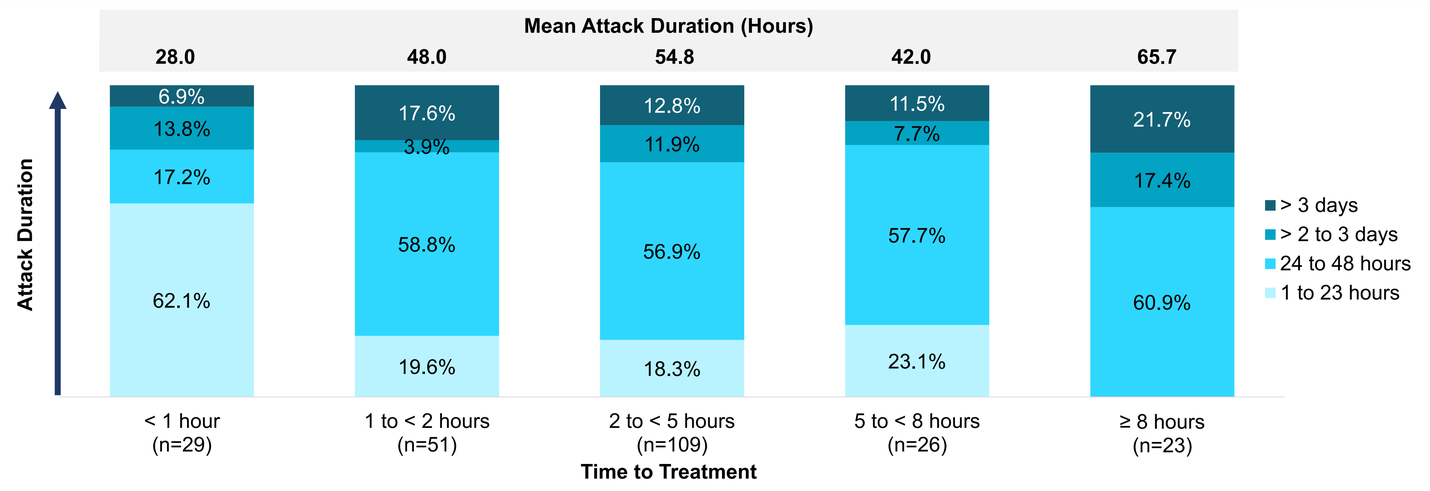
- The mean (SD) time from symptom onset to on-demand treatment was 3.6 hours (5.4) (adults: 3.6 hours [5.6]; adolescents: 3.0 hours [1.8]) with 12.6% of respondents treating in <1 hour (adults: 12.7%; adolescents: 10.5%)

Figure 4. Time to Treatment with On-demand Therapy by Attack Severity



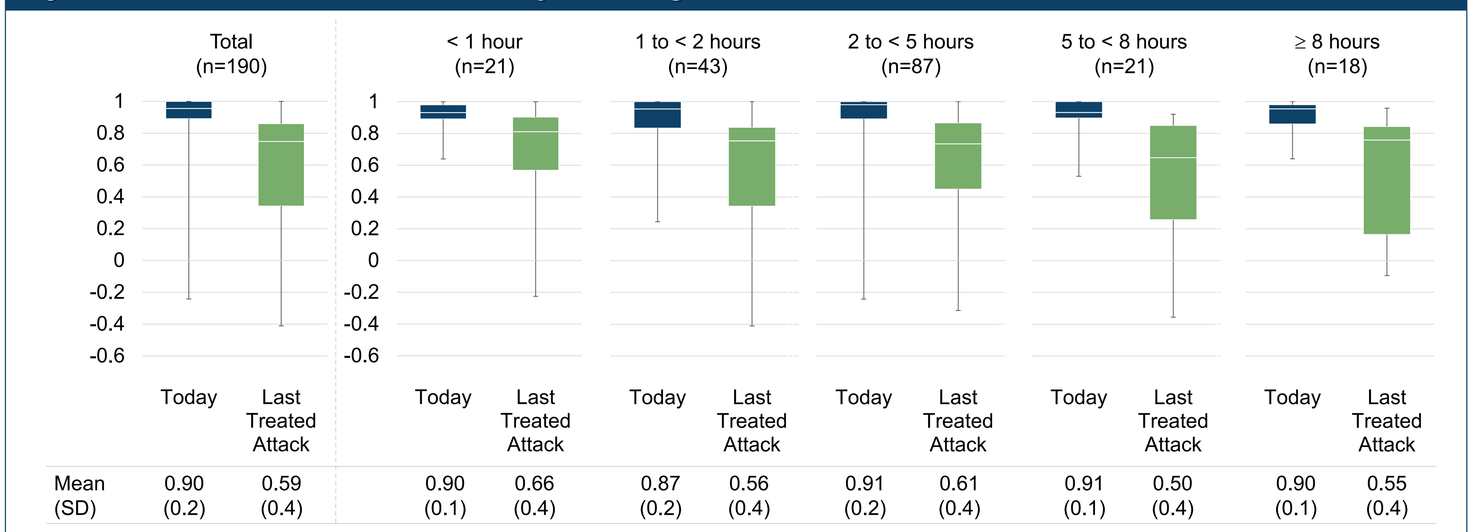
- Most attacks had progressed to moderate (59.4%), severe (19.7%) or very severe (2.1%) by the time of treatment administration
- At treatment, attacks were mild for 33.3% of those who treated <1 hour from attack onset, 20.0% of those who treated in 1 to <5 hours, and 6.1% of those who treated in 5 or more hours

Figure 5. Time to Treatment with On-demand Therapy by Attack Duration



- The mean duration of attack (SD) was shorter for those who treated <1 hour (28.0 hours [41]) than those who treated ≥1 hour (53 hours [60])
- Attacks lasted less than 24 hours for 62% of respondents who treated their attack <1 hour compared to 17% who treated ≥1 hour

Figure 6. Median EQ-5D-5L Index Values Today and During Last Treated Attack



	Total		< 1 hour		1 to < 2 hours		2 to < 5 hours		5 to < 8 hours		≥ 8 hours	
	Today	Last Treated Attack	Today	Last Treated Attack	Today	Last Treated Attack	Today	Last Treated Attack	Today	Last Treated Attack	Today	Last Treated Attack
Mean (SD)	0.90 (0.2)	0.59 (0.4)	0.90 (0.1)	0.66 (0.4)	0.87 (0.2)	0.56 (0.4)	0.91 (0.2)	0.61 (0.4)	0.91 (0.1)	0.50 (0.4)	0.90 (0.1)	0.55 (0.4)

- The mean EQ-5D-5L score (SD) was substantially lower during the last treated attack (0.59 [0.4]) than between attacks [0.90 (0.2)]
- Mean EQ-5D-5L scores were greater among respondents who treated <1 hour (0.66 [0.4] than those who treated ≥1 hour (0.58 [0.4])

Conclusions

- **In this pooled patient survey data from four European countries, delayed on-demand treatment of HAE attacks was associated with increased severity, duration, and reduced QoL**
- **These results further support the need for less invasive treatments that allow for earlier administration after attack onset**

Disclosures

Triggianese reports no disclosures. Bocquet: reports no conflicts. Buttgereit: is or recently was a speaker and/or advisor for and/or has received research funding from Aquestive, BioCryst, CSL Behring, GSK, Hexal, KalVista, Medac, Novartis, Pharming, Pharvaris, Roche, Sanofi-Aventis, Swixx BioPharma, and Takeda. El-Shanawany - Educational support, research support, speaker fees and/or consultant fees from ALK-Abello, Allergy Therapeutics, CSL, KalVista Pharmaceuticals, Inc., Octapharma, Novartis, Takeda and Viatris. Tomaz Garcez: Consulting, advisory work and educational support from: BioCryst, CSL Behring, KalVista, Novartis, Octapharma, Pharming, Pharvaris and Takeda. Gurugama: Advisory board for KalVista Pharmaceuticals, Inc. Jain: Advisory board for KalVista Pharmaceuticals, Inc. Kiani-Alikhan: has received consulting fees, honoraria, medical writing support, meeting/travel support, and/or served on advisory boards and/or data safety monitoring for KalVista Pharmaceuticals, BioCryst, Takeda, CSL Behring, and Astria. Magerl: received personal fees/nonfinancial support from Astria, Shire/Takeda, CSL Behring, Pharming, BioCryst, KalVista Pharmaceuticals, Pharvaris, Ionis, Intellia, and Octapharma. Martinez-Saguer: has received grants, royalties or licenses, consulting fees, honoraria, clinical trial support, medical writing support, article processing charges, meeting/travel support, course sponsorship, and/or served on advisory boards and/or data safety monitoring for KalVista Pharmaceuticals, Takeda, CSL Behring, Pharming, BioCryst, Octapharma, and Pharvaris. Savic: Consulting fees and/or honoraria from CSL Behring, Biocryst, KalVista Pharmaceuticals, Inc, Pharvaris, Novartis, and Astra Zeneca. Yong: consulting fees, honoraria and/or support for attending meetings from Biocryst, CSL Behring, KalVista Pharmaceuticals, Inc., Pharming, Pharvaris and Takeda. Zanichelli: received honoraria, meeting/travel support, and/or served on advisory boards for KalVista Pharmaceuticals, Astria, BioCryst, CSL Behring, Pharming, Pharvaris, and Takeda. Danese: Consulting fees from Kalvista. Ulloa: Consulting fees from Kalvista. Bajcic: is an employee of and owns stock in Kalvista. Audhya: is an employee of and owns stock in Kalvista. Cancian: received honoraria and/or meeting/travel support paid to the institution from KalVista Pharmaceuticals, BioCryst, CSL Behring, Pharvaris, and Takeda. Danese: Consulting fees from Kalvista.

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