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Survey Results from Italy, the US, UK, and France: Anxiety in Patients Using Injectable On-Demand Treatments for Hereditary Angioedema Attacks

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Background

- Studies report a high prevalence of anxiety among patients with hereditary angioedema (HAE). Currently, all approved on-demand treatments for managing these attacks require parenteral administration, which can be painful and challenging to administer and may contribute to treatment-related anxiety[1-3]

Objective

- This study aimed to quantify levels of anxiety associated with the use of injectable on-demand therapies

Methods

- Patients with Type 1 or Type 2 HAE from Italy, the US, UK, and France were recruited by a physician association (ITACA) and patient advocacy groups (HAEA, HAE UK, AMSAO), respectively, to complete an online survey
- Patients had to have treated an attack within the 3 months prior to the survey with an approved on-demand therapy
- The survey was self-reported, and took respondents approximately 20 minutes to complete
- Respondents rated their anxiety using an 11-point GA-NRS ranging from 0 "not anxious" to 10 "extremely anxious" to answer the question "How much anxiety did you feel about treating this HAE attack with on-demand treatment?"
- Attack severity was reported on a 4-point Patient Global Impression of Severity (PGI-S) scale ranging from 1 "Mild" to 4 "Very Severe"

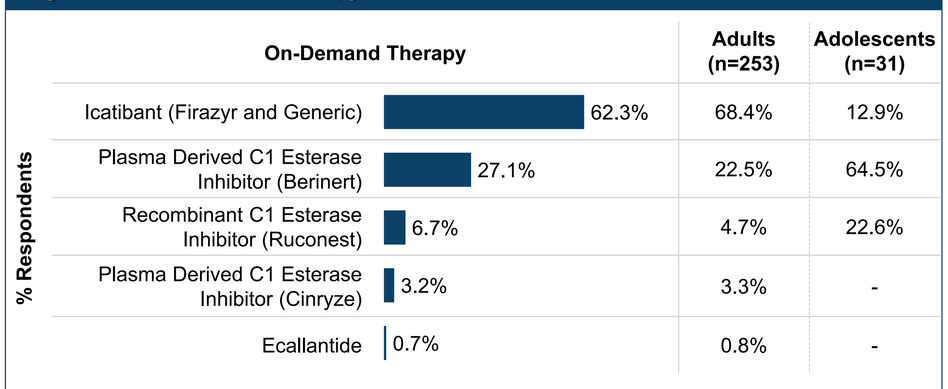
Results

Table 1. Patient Demographics and Clinical Characteristics

Characteristic	Total (N=284)	On-Demand IV (n=105)	On-Demand SC (n=179)	Adults (n=253)	Adolescents (n=31)
Current age; years mean (SD)	41.0 (16.4)	33.4 (15.6)	45.4 (15.3)	44.3 (14.3)	14.3 (1.6)
Age of diagnosis; years mean (SD)	17.6 (13.2)	13 (12.1)	20.3 (13.1)	19 (13.3)	6.3 (3.6)
Gender, n (%)					
Male	93 (32.7%)	34 (32.4%)	59 (33.0%)	74 (29.2%)	19 (61.3%)
Female	190 (66.9%)	70 (66.7%)	120 (67.0%)	178 (70.4%)	12 (38.7%)
Country, n (%)					
Italy	101 (33.1%)	46 (43.8%)	55 (30.7%)	87 (34.4%)	14 (45.2%)
United States	94 (35.6%)	31 (29.5%)	63 (35.2%)	80 (31.6%)	14 (45.2%)
United Kingdom	48 (16.9%)	25 (23.8%)	23 (12.8%)	46 (18.2%)	2 (6.5%)
France	41 (14.4%)	3 (2.9%)	38 (21.2%)	40 (15.8%)	1 (3.2%)
HAE Type, n (%)					
Type I	258 (90.8%)	97 (92.4%)	161 (89.9%)	231 (91.3%)	27 (87.1%)
Type II	26 (9.2%)	8 (7.6%)	18 (10.1%)	22 (8.7%)	4 (13.9%)
Days since last attack, mean (SD)	20.7 (19.5)	16.6 (15.8)	23.2 (21.1)	20.6 (19.1)	21.9 (23.4)

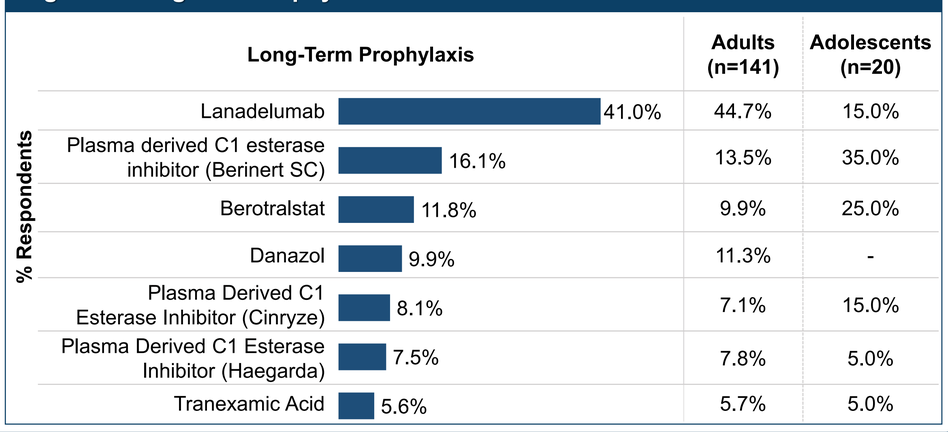
- This analysis included 284 respondents (253 adults [≥18yrs] and 31 adolescents [range 12-17yrs old]) from Italy (n=101), US (n=94), UK (n=48), and France (n=41)
  - 57% were receiving long-term prophylaxis

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



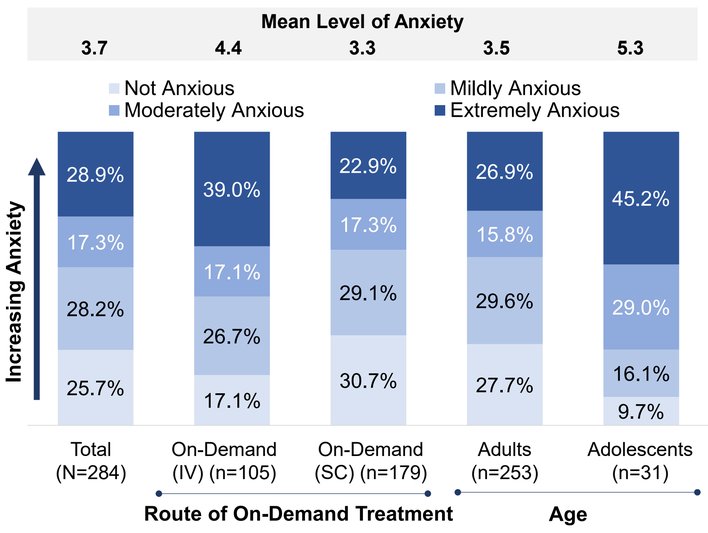
- 87% of adolescents and 31% of adults used an IV on-demand treatment to treat their last attack

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



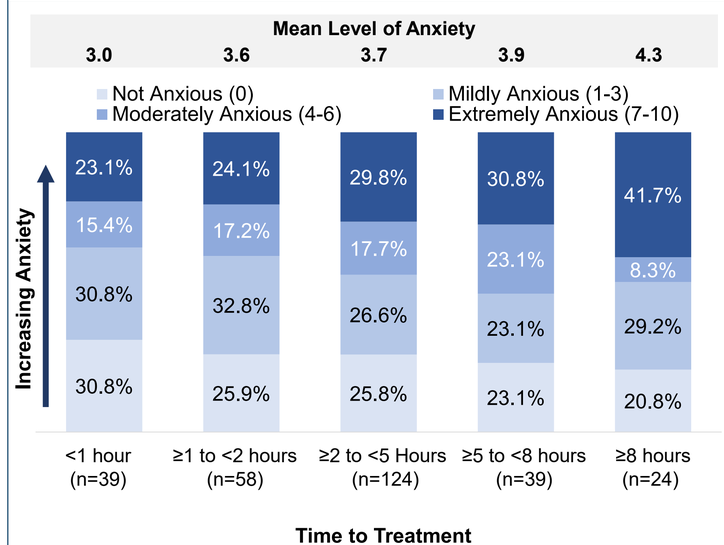
Results

Figure 3. Anxiety About Treating with On-demand Treatment



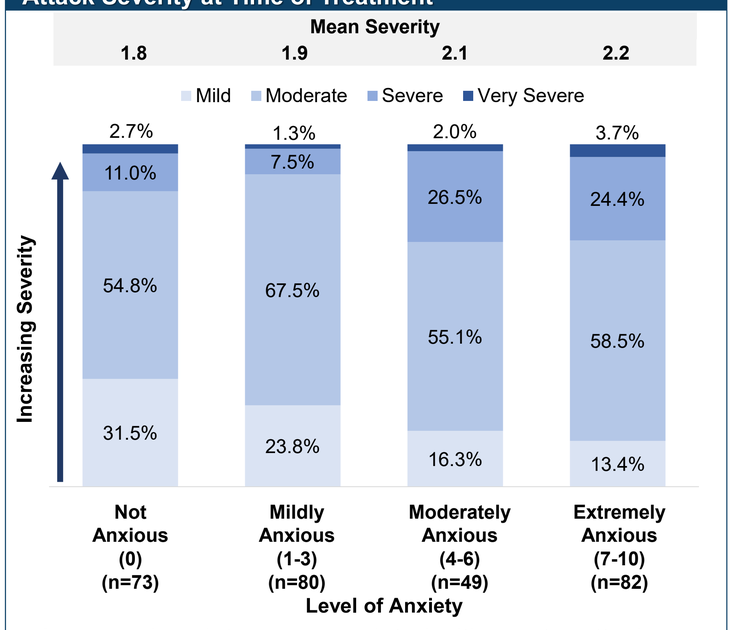
- During the last treated attack, 29% of respondents felt extremely anxious (anxiety 7-10), 17% moderately anxious (anxiety 4-6), and 28% mildly anxious (anxiety 1-3)
- The mean anxiety rating was 3.5 for adults vs 5.3 for adolescents
- For respondents receiving IV treatment, the mean anxiety rating was 4.4, with 39% reporting extreme anxiety

Figure 4. Time to On-demand Treatment and Anxiety



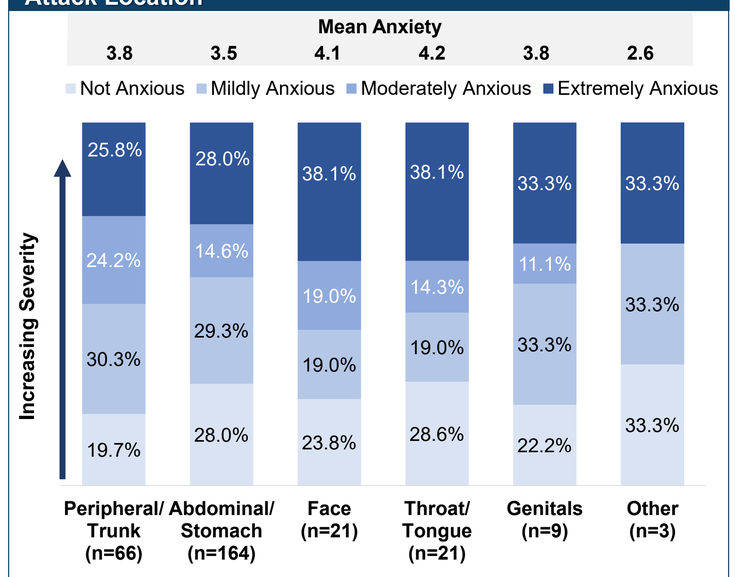
- 16% of respondents treated in <1 hour
- Increased anxiety was associated with increased time to treatment

Figure 5. Anxiety Associated with On-demand Treatment by Attack Severity at Time of Treatment



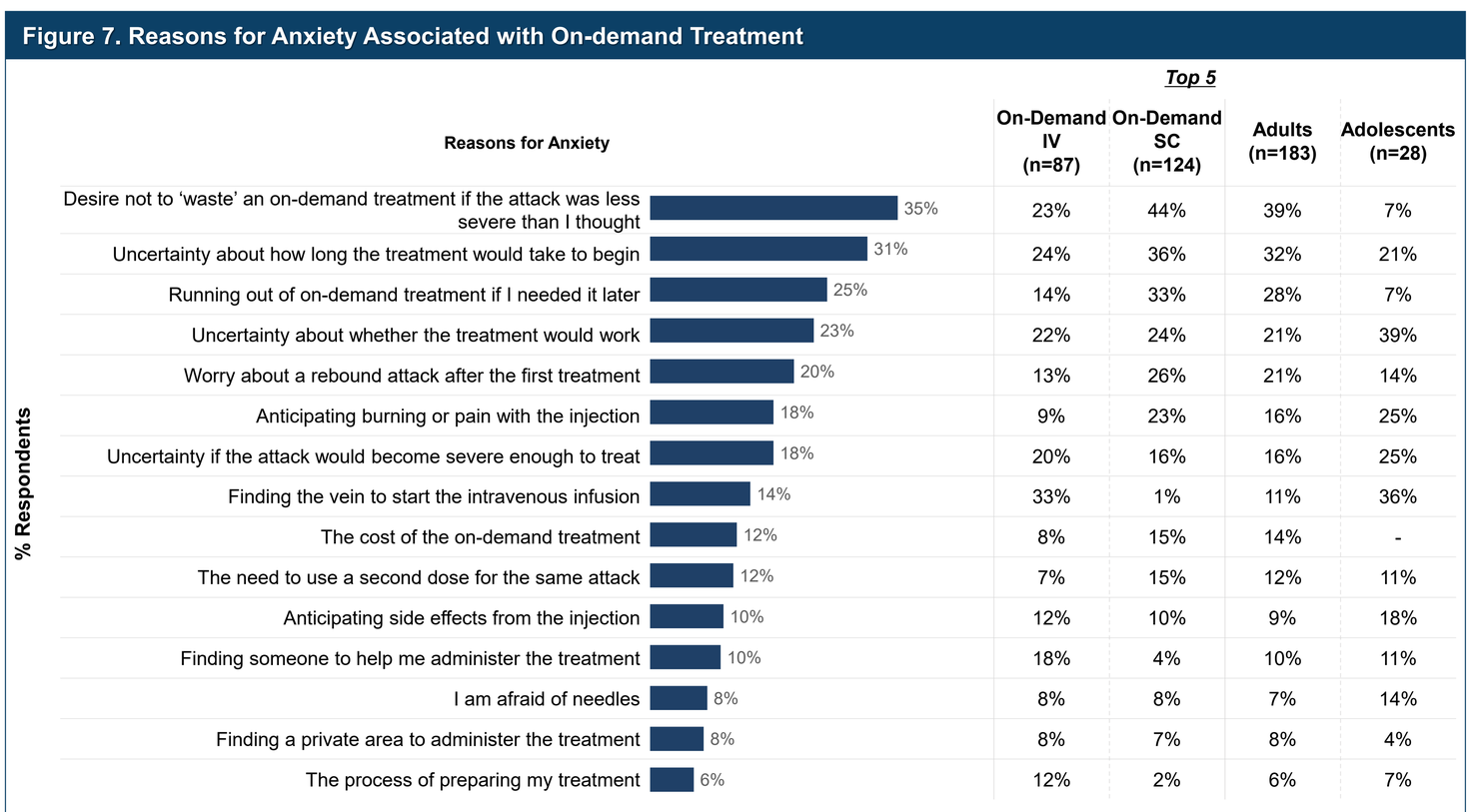
- Increased anxiety was associated with greater attack severity at the time of treatment

Figure 6. Anxiety Associated with On-demand Treatment by Attack Location



- Moderate to extreme anxiety occurred for all attack locations, but was highest in the face or throat/tongue

Figure 7. Reasons for Anxiety Associated with On-demand Treatment



- Finding a vein to start infusion was the most common administration-related reason for anxiety among those receiving IV on-demand treatment (33%) and anticipating burning or pain with injection was the most common administration-related reason for respondents using SC treatment (23%)

Conclusions

- **Nearly one third of survey respondents experienced moderate to extreme anxiety due to anticipated use of injectable on-demand treatment, particularly adolescents and those receiving IV therapy**
- **Greater levels of anxiety were associated with longer on-demand treatment delays and attack severity**
- **Among the reasons related to treatment administration, finding a vein to start infusion and burning or pain with injection were the most common causes of anxiety**
- **An oral on-demand therapy could reduce the treatment administration-related causes of anxiety associated with currently approved on-demand therapies**

Disclosures

Cancian: received honoraria and/or meeting/travel support paid to the institution from KalVista Pharmaceuticals, BioCryst, CSL Behring, Pharvaris, and Takeda. Busse: reports consulting fees: Takeda, KalVista, CVS Specialty, BioCryst, CSL, Behring, ADArx, Astria, Pharvaris. Bocquet: Receives honoraria and/or meeting/travel support from BioCryst, CSL Behring and Takeda. Craig reports research support and consultancy: CSL Behring, Ionis, Takeda, BioCryst, BioMarin, KalVista, Pharvaris, Intellia, Astria; speaker fees: CSL Behring and Takeda; travel support: CSL Behring, Takeda, BioCryst. Danese: Consulting fees from Kalvista. 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. 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: Honorarium for consulting work and advisory boards: Shire/Takeda, CSL Behring, BioCryst, Biotest, KalVista, Pharvaris, Astria, Ionis, X4 pharmaceuticals. O'Connor: speaker/consultant/advisor or research: KalVista, Pharming, CSL, GSK, Blueprint, TEVA, AZ, Sanofi, Grifols, Abbvie. She is the Chief Medical Officer of the CIIC. Radojicic reports honorarium from the following participation: Medical Advisory Board- KalVista, BioCryst, CSL Behring, Astria, Safety Monitoring Board- Astria, Speakers Bureau- CSL Behring Savic: Consulting fees and/or honoraria from CSL Behring, Biocryst, KalVista Pharmaceuticals, Inc, Pharvaris, Novartis, and Astra Zeneca. Savic: Consulting fees and/or honoraria from CSL Behring, BioCryst, KalVista Pharmaceuticals, Inc, Pharvaris, Novartis, and Astra Zeneca. Triggianese report no disclosures. Wedner: Receives research funds from Arista, BioCryst, BioMarin, GlaxoSmithKline, ImmunoTherapeutics, Ionis, KalVista Pharmaceuticals, Pharvaris, and Takeda; Receives consulting fees from Arista, BioMarin, BluePrint, CSL, Grifols, Ionis, KalVista Pharmaceuticals, Pharvaris, and Takeda; and is a speaker for BioCryst, BluePrint, CSL, GlaxoSmithKline, Grifols, and Takeda. 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. Desai: Former employee at KalVista; owns stock in KalVista. Ulloa: Consulting fees from KalVista. Danese: Consulting fees from KalVista. Audhya is an employee of and owns stock in KalVista. Christiansen reports advisory boards: KalVista, BioCryst, US HAEA Medical Advisory Board.

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