

# Delays in the On-Demand Treatment of Hereditary Angioedema Attacks and Associated Barriers Reported in Different Healthcare Systems

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## Introduction

- Hereditary angioedema (HAE) is characterized by unpredictable swelling attacks affecting mucosal and subcutaneous tissues, which are typically painful, debilitating, and potentially fatal
- WAO/EAAI guidelines recommend the early use of on-demand treatment following recognition of an HAE attack to reduce morbidity and prevent mortality<sup>1-3</sup>
  - Currently available on-demand treatments for HAE attacks are administered subcutaneously or intravenously<sup>3</sup>
- Despite the recommendation for early treatment, recent research suggests that patients delay on-demand treatment of their attacks<sup>4</sup>
- Differences in treatment behaviors across different healthcare systems have not been well-described

## Methods

- Adults with Type 1 or Type 2 HAE due to C1 inhibitor deficiency from the United States (US), United Kingdom (UK), and France were recruited by patient organizations (HAEA, HAEUK, AMSAO, respectively)
- Respondents 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

## Results

Table 1. Respondent Characteristics

	United States (n = 80)	United Kingdom (n = 46)	France (n = 40)
Current Mean Age, Years (SD)	44 (15.0)	44 (11.3)	49 (16.6)
Diagnosis Mean Age, Years (SD)	20 (12.5)	17 (10.4)	14 (11.7)
Gender			
Male	21%	29%	29%
Female	79%	70%	71%
Prefer not to respond	-	1%	-
HAE Type			
Type 1	81%	100%	98%
Type 2	19%	-	2%
Patients receiving long-term prophylaxis	54%	54%	73%
Time since last attack, days mean (SD)	20.7 (18.3)	15.7 (13.8)	30.5 (27.4)

Figure 1. On-Demand Treatment at Time of Last Treated Attack

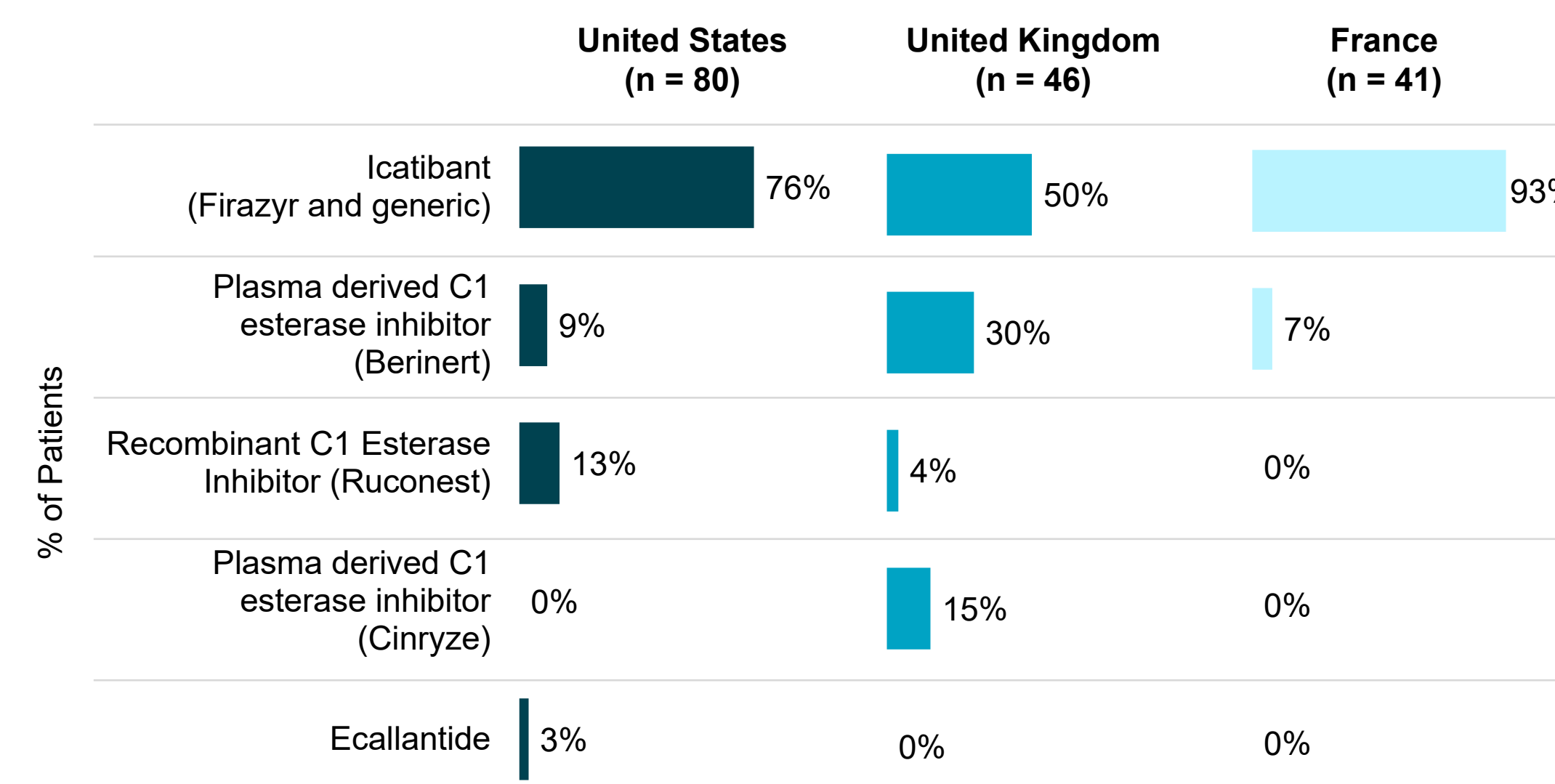
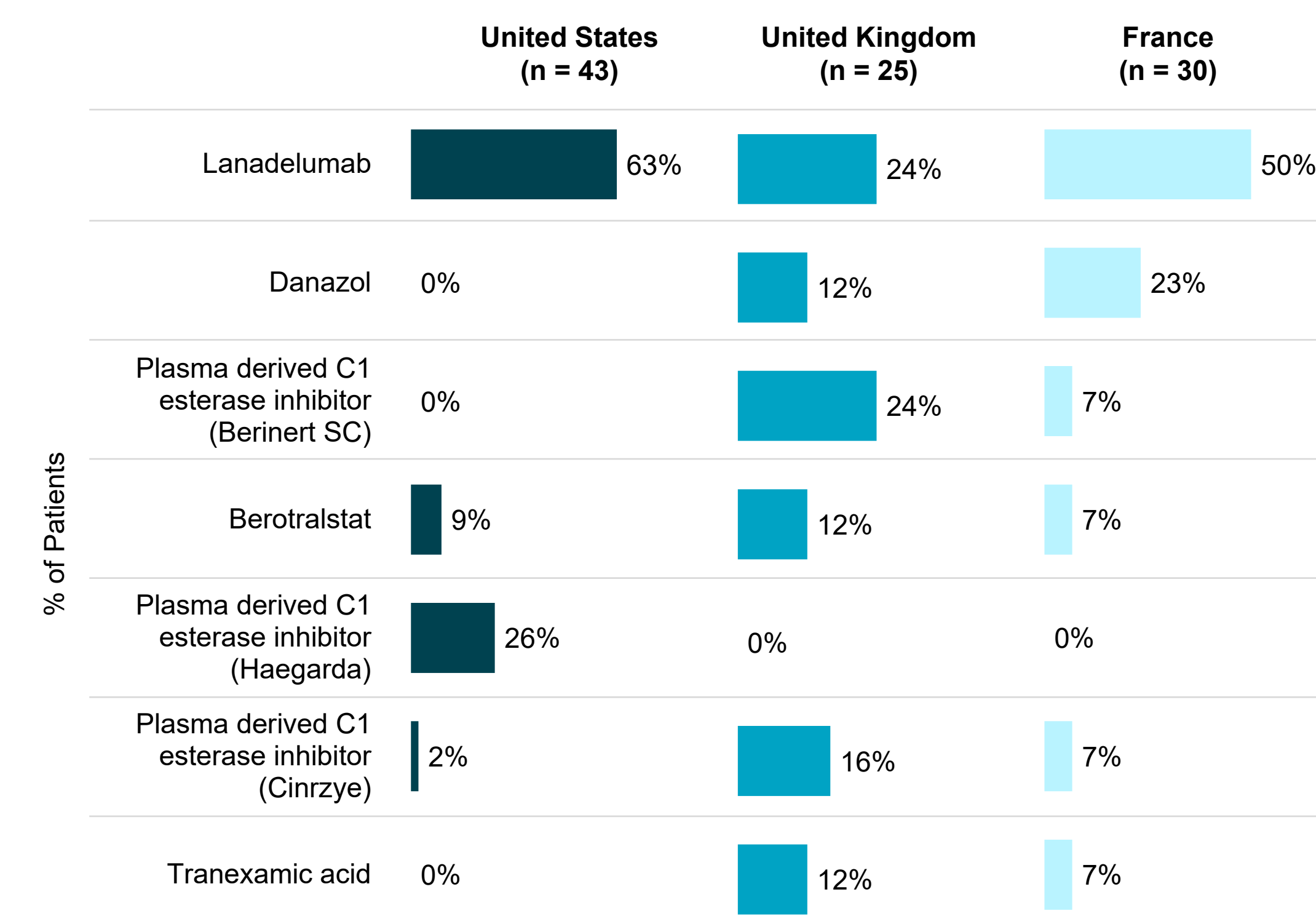


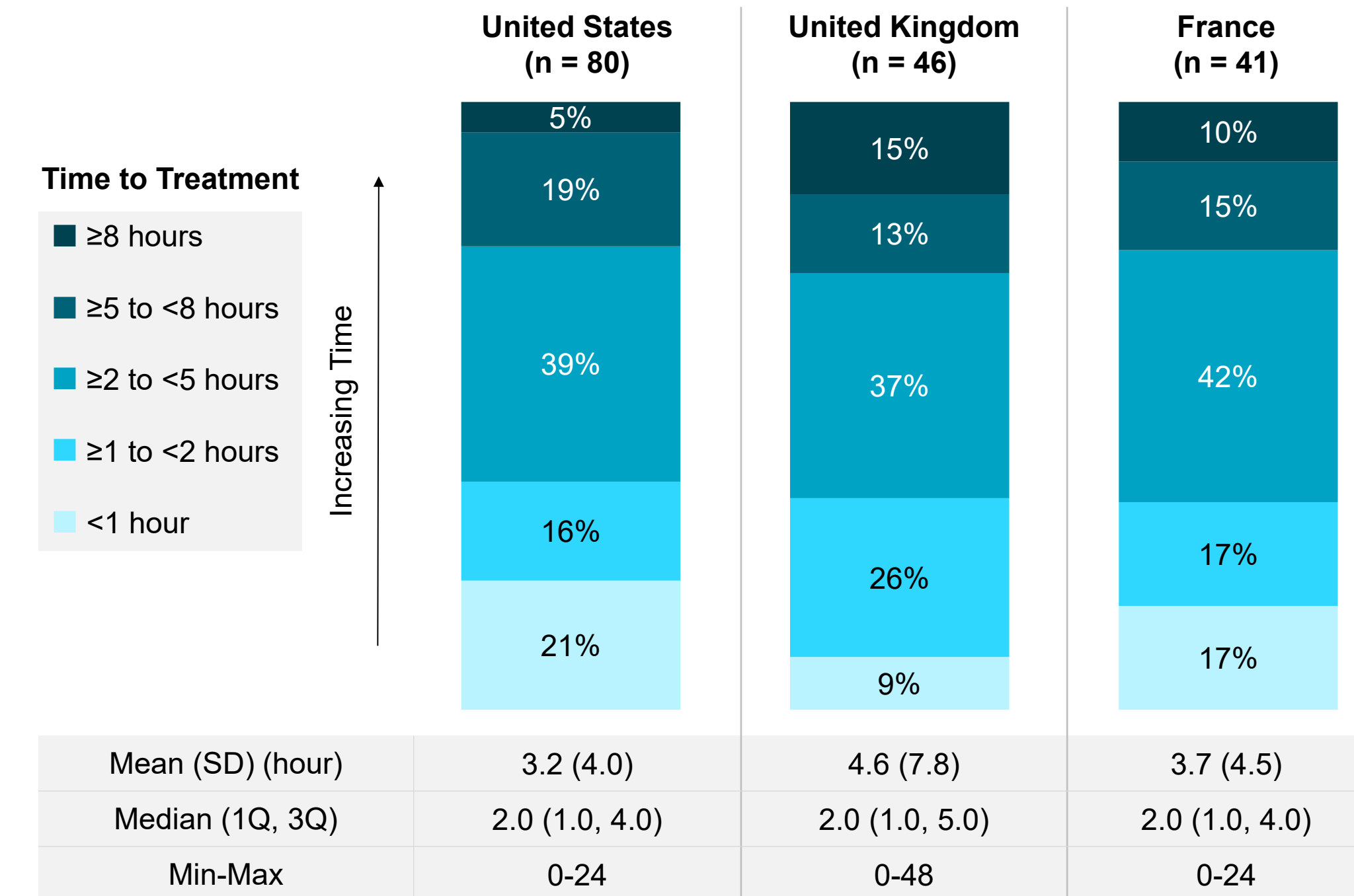
Figure 2. Long-term Prophylaxis at Time of Last Treated Attack



- Among those on long-term prophylaxis, lanadelumab was the most common treatment reported by respondents in the US and France and equal to plasma derived C1 esterase inhibitor (Berinert subcutaneous) in the UK (Figure 2)

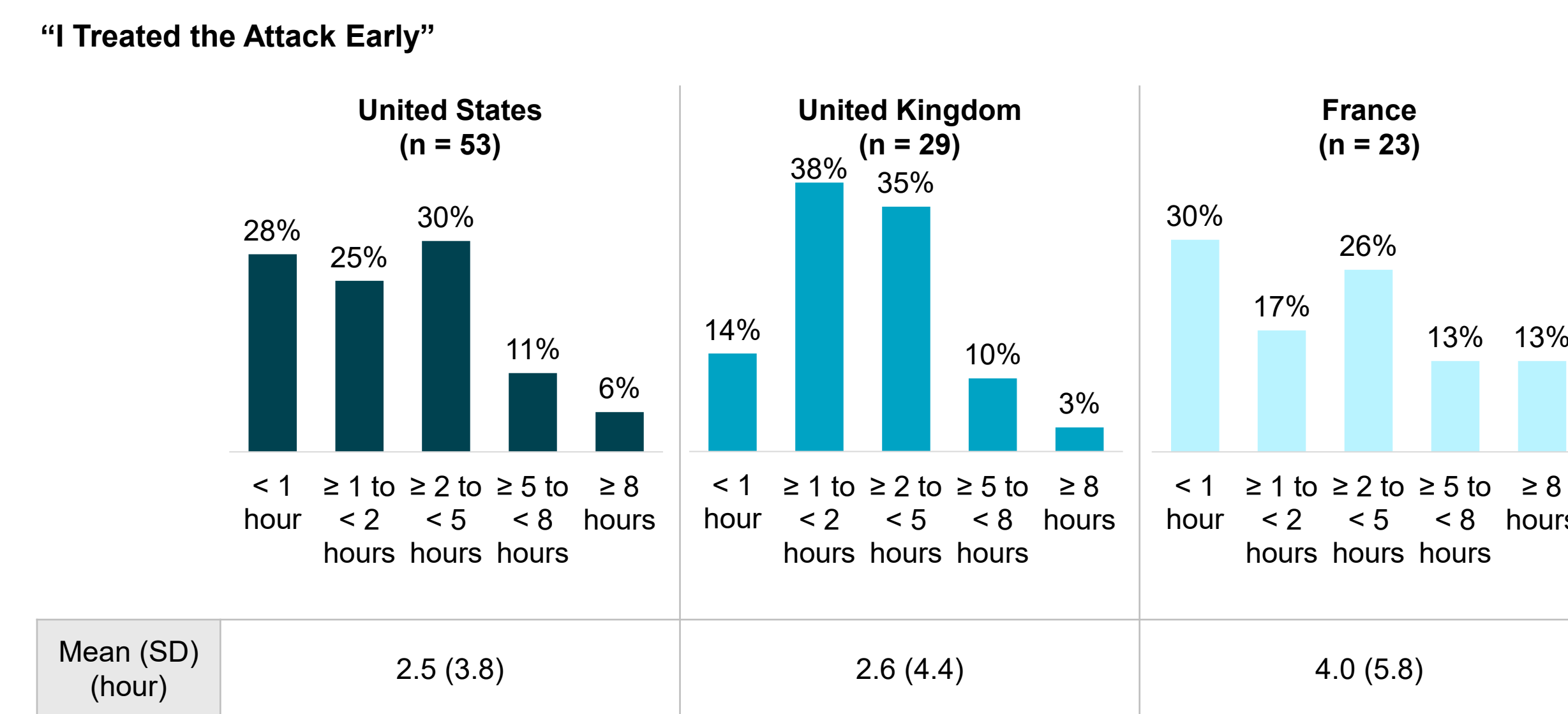
## Results

Figure 3. Time to On-Demand Treatment After Attack Onset



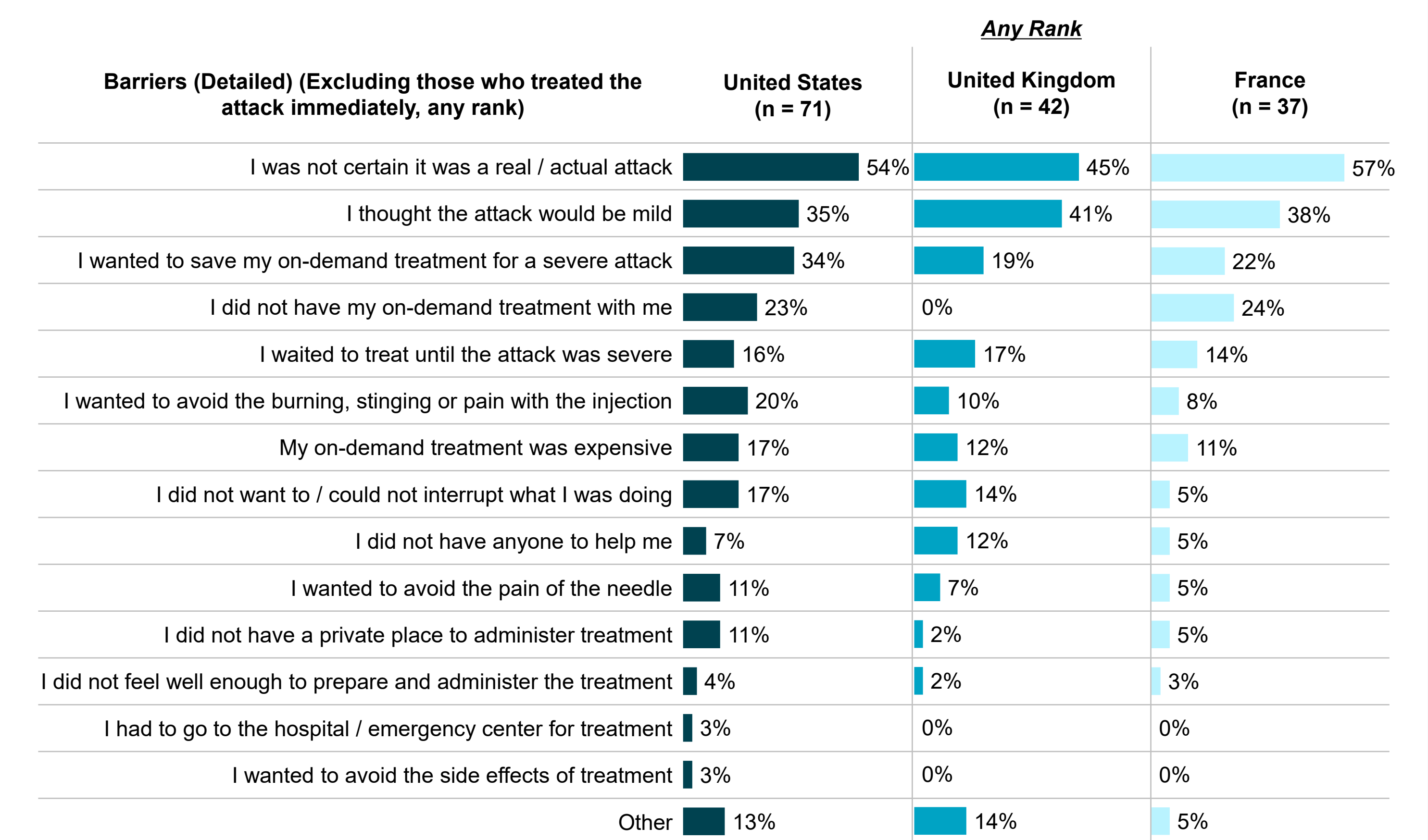
- In the US, UK, and France, respectively, 21%, 9%, and 17% treated in <1 hour (Figure 3)

Figure 4. Time to On-Demand Treatment Amongst Those Who Perceived They Treated Early



- Sixty-six percent of respondents from the US (n=53), 63% from the UK (n=29), and 58% from France (n=23) believed they treated their last attack "early", but only 28%, 14%, 30% of those respondents treated in <1 hour (Figure 4)

Figure 5. Barriers to Treating Attack Early Excluding Those Who Treated the Attack Immediately



- The most common barriers to treating sooner across all three countries were uncertainty the attack was real, thinking the attack would remain mild, wanting to save on-demand treatment for a severe attack, and not having on-demand treatment with them
- Treatment-administration related barriers such as wanting to avoid burning, stinging or pain with injection, not wanting to interrupt what they were doing, not having someone to help administer treatment, a private place to administer the treatment, wanting to avoid need pain or side effects, were also common

## Conclusions

- Overall, survey results were consistent among respondents regardless of geography and healthcare systems
- Delays in treatment were common, with only 9%- 21% respondents treating their attack in <1 hour, even among those who perceived they treated early (14%-30%)
- The most common reasons for not treating sooner uncertainty the attack was real, thinking the attack would remain mild, wanting to save on-demand treatment for a severe attack, and not having on-demand treatment with them

## Acknowledgments

The authors wish to thank Jason Allaire, PhD of Generativity Health Outcomes Research for his assistance with this poster. Funding for Dr. Allaire was provided by KalVista Pharmaceuticals.

## Disclosures

Paul Audhya is an employee of and owns stock in KalVista. Paula Busse received consulting fees from Takeda, KalVista, CVS Specialty, BioCryst, CSL, Behring, ADARx, Astria, Pharvaris. Sandra Christiansen participated in advisory boards for KalVista, BioCryst, and US HAEA Medical Advisory Board. Timothy Craig received research support and consultancy for CSL Behring, Ionis, Takeda, BioCryst, BioMarin, KalVista, Pharvaris, Intellia, Astria and speaker fees from CSL Behring and Takeda; travel support: CSL Behring, Takeda, BioCryst. Sherry Danese received consulting fees from KalVista. Vibha Desai is an employee of and owns stock in KalVista. Tariq El-Shanawany received educational support, research support, speaker fees and/or consultant fees from ALK-Abello, Allergy Therapeutics, CSL, KalVista Pharmaceuticals, Inc., Octapharma, Novartis, Takeda and Viatrix. Gurugama: Advisory board for KalVista Pharmaceuticals, Inc. Rashmi Jain reports advisory boards for KalVista. Maeve O'Connor is a speaker/consultant/advisor or researcher for KalVista, Pharming, CSL, GSK, Blueprint, TEVA, AZ, Sanofi, Grifols, Abbvie and is the Chief Medical Officer of the CMC. Cristine Radojicic received honorarium for medical advisory boards for KalVista, BioCryst, CSL Behring, Astria, Safety Monitoring Board for Astria, and Speakers Bureau for CSL Behring. Sinisa Savic received consulting fees and/or honoraria from CSL Behring, BioCryst, KalVista Pharmaceuticals, Inc., Pharvaris, Novartis, and AstraZeneca. Julie Ulloa received consulting fees from KalVista. Patrick Yong received consulting fees, honoraria and/or support for attending meetings from BioCryst, CSL Behring, KalVista, Pharming, Pharvaris and Takeda.

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## Presented

AAAAI Annual Meeting 2025.  
February 28 to March 3, 2025 in San Diego, CA.

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