

Characterizing Attack-Related Health Utility in Hereditary Angioedema

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Background

- Hereditary angioedema (HAE) is a rare, genetic disease characterized by debilitating swelling episodes in various parts of the body¹
- Health-state utilities are proxies for patient quality-of-life and important inputs for health economic models²
- As such, utilities facilitate the assessment of new medical technology impacts and guide healthcare decision-making³
- To date, no comprehensive assessments of health utilities in HAE have been conducted; this study aimed to fill this gap

Methods

- We conducted a systematic literature (SLR) on economic outcomes, including utility values, among patients with HAE, including those using prophylactic and/or on-demand HAE therapies, in accordance with PRISMA guidelines
- We conducted searches in PubMed, Embase, and health technology assessment (HTA) websites
- Article inclusion was limited to English peer-reviewed and grey literature published between January 1, 2007, and July 1, 2022
- Two independent reviewers assessed literature eligibility and abstracted data

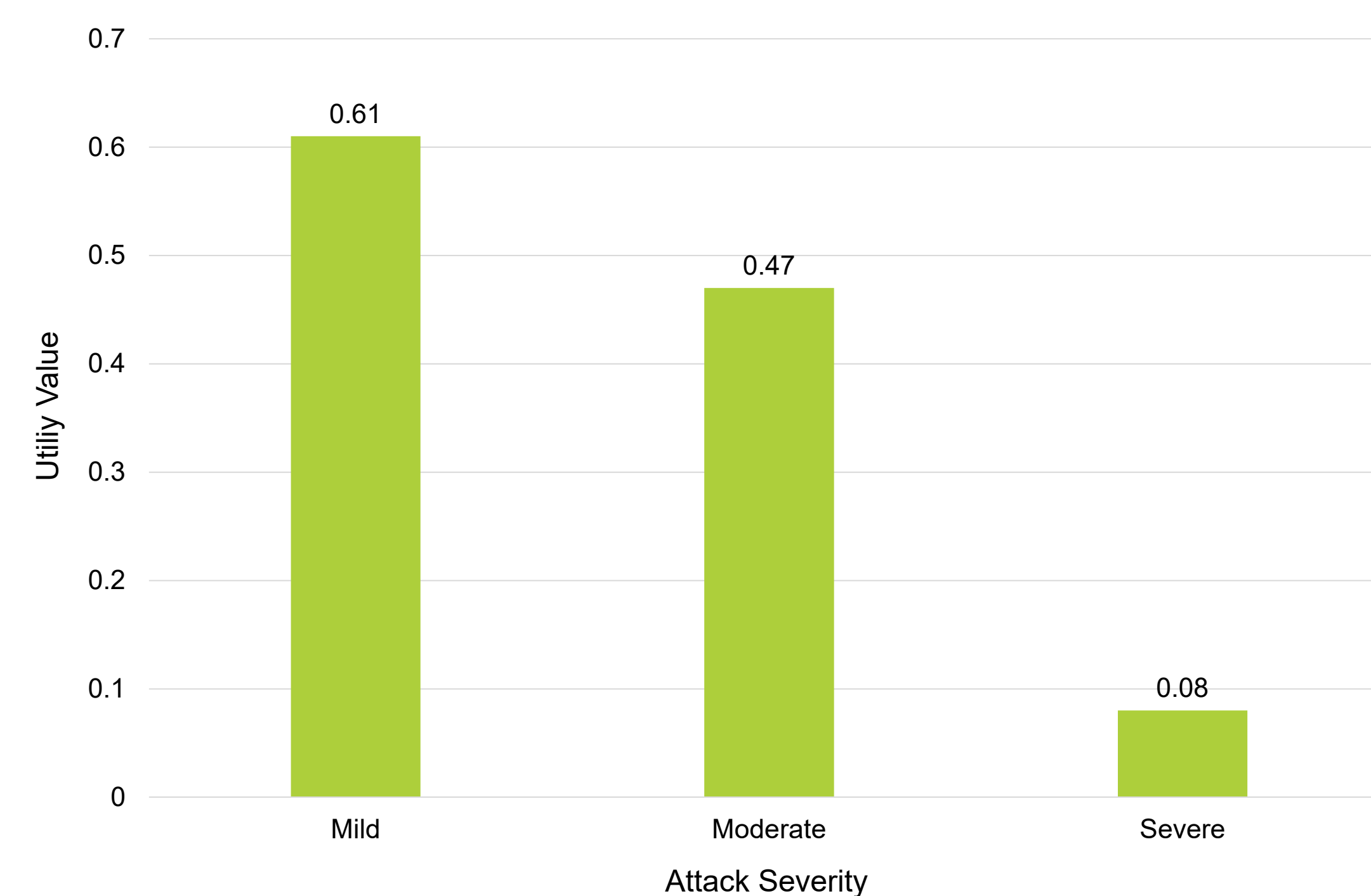
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Results

- We identified 66 studies. The majority of studies were observational (64%) and peer-reviewed (59%), and the most common study location was the United States (42%) (**Table 1**).
- Among studies reviewed, 15 (23%) reported on HAE utilities, with mean non-attack utility ranging from 0.72 – 0.83 and mean utility during an attack ranging from 0.44 – 0.51^{4,5}
- We observed an inverse relationship between utility and attack severity, with mean weights of 0.61, 0.47, and 0.08 for mild, moderate, and severe attacks, respectively⁴ (**Figure 1**)
- Utilities also varied by attack location, with the lowest mean utility values observed for abdominal and laryngeal attacks (0.35 and 0.13, respectively)⁶ (**Figure 2**)

Figure 1. Inverse Relationship Between Utility Value and Attack Severity⁴



*Attack severity was based on EQ-5D 10-point scale

Table 1. SLR Study and Sample Characteristics

Characteristic	n (%)
Total Number of Publications	66 (100)
Sample Size, number of patients	
Minimum	1
Maximum	737
Publication Type	
Peer-Reviewed	39 (59.1)
Conference Proceeding	14 (21.2)
Economic Report	13 (19.7)
Study Design	
Observational	42 (63.6)
Economic Analysis/Modeling	23 (34.8)
RCT	1 (1.5)
Study Location	
United States	28 (42.4)
Europe	25 (37.9)
Other	13 (19.7)
HAE Treatment Type, Studies*	
On-Demand Treatment	20
Prophylactic Treatment	15

*32 studies assessed HAE therapies; some assessed both on-demand and prophylactic treatments

Figure 2. Mean Utility Values by Attack Location⁶

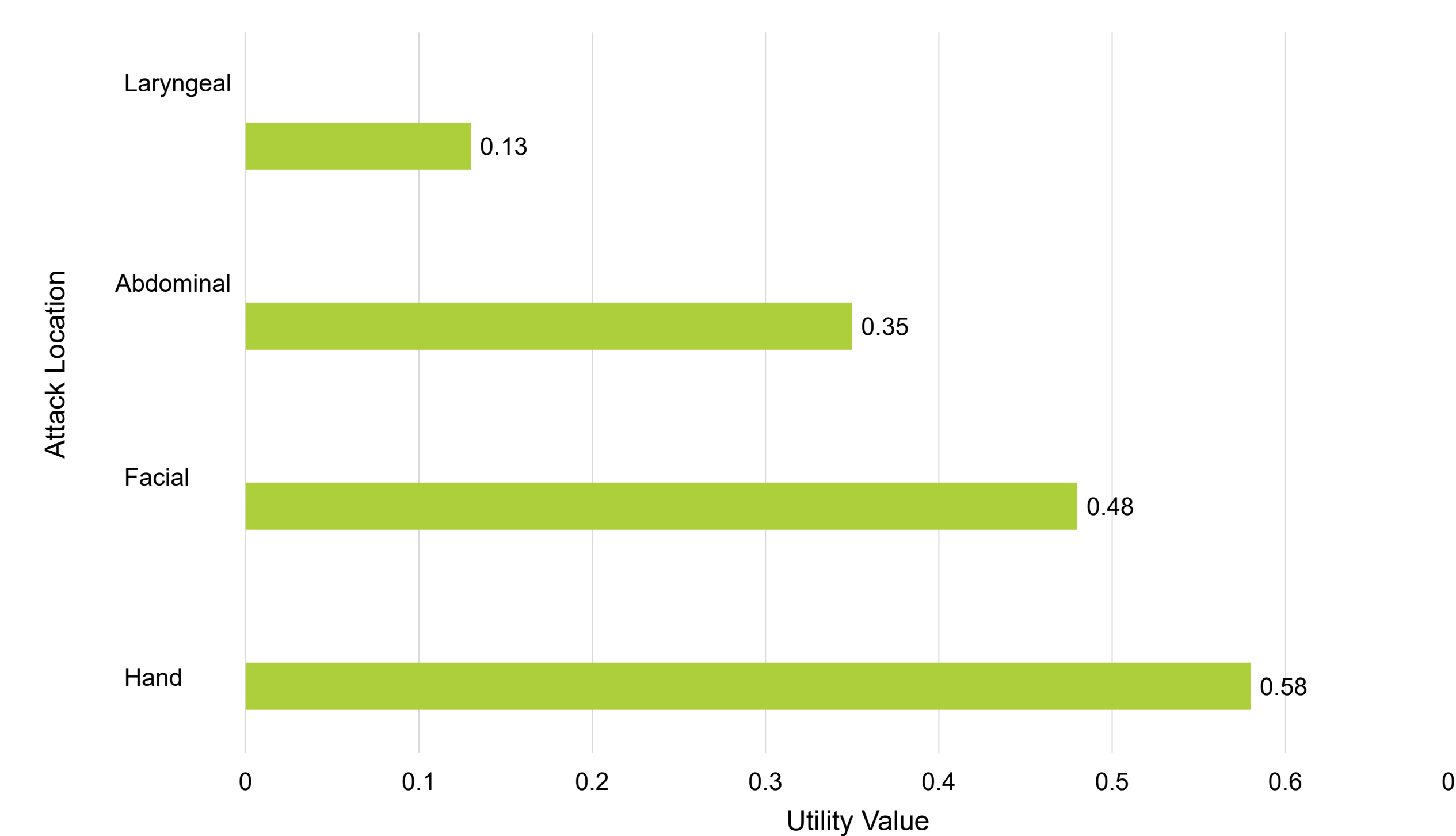
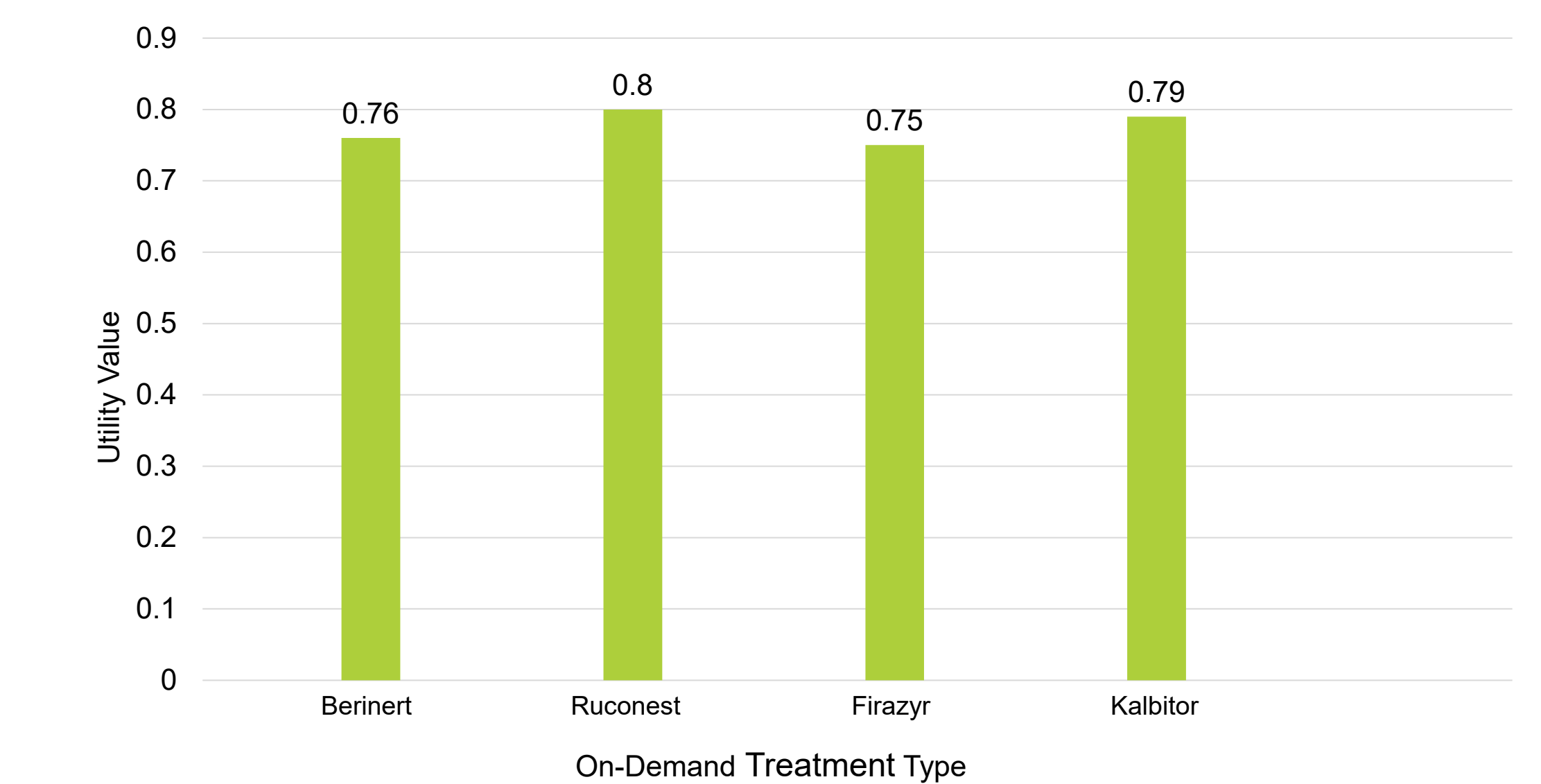


Figure 3. Utility Values for On-Demand HAE Treatments⁷



- Modeling of on-demand HAE therapies suggest that treatment may improve attack-associated disutility to non-attack levels (0.75 – 0.80) that fall within population norms⁷ (**Figure 3**)

Conclusions

- This SLR revealed that the burden of HAE attacks translates into substantial health status disutility
- Laryngeal and abdominal attacks yielded the greatest disutility compared to attacks in other locations
- While treatment with on-demand therapy attenuates attack-associated disutility, we found that increasing attack severity substantially impacts patient utility
- New therapeutics that facilitate early treatment, thereby mitigating attack severity and hastening attack resolution, are needed to yield the greatest patient benefit

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Disclosures

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