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Post-DCE Qualitative Interviews: A Novel Method to Understand the Rationale for Stated Preferences – An Example Among Patients and Physicians in Severe Asthma

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Background

- Patient preference (PP) methodologies, such as discrete choice experiments (DCEs), help elucidate what is important to patients by quantifying willingness to trade off on treatment attributes such as benefits and risks.
- However, heterogeneity in preferences is common. Current approaches provide insights into the "who" and "what" of preference heterogeneity, but do not provide information on "why".
- Understanding the rationale behind preference heterogeneity is increasingly valuable as treatment options proliferate and the use of PP information by decisionmaking concurrently increases.

Objective

• We present a novel qualitative post-DCE interview method helpful in elucidating individuals' rationale for stated preferences and deriving rich insights into the drivers of the heterogeneity often observed in stated preference studies.

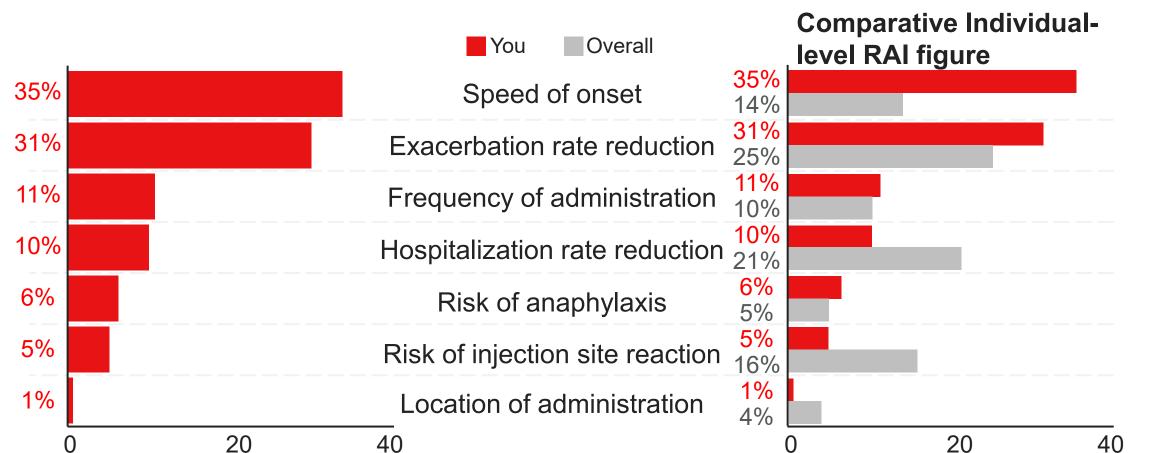
Methods

- A DCE was fielded among a sample of patients with severe uncontrolled asthma (n=300) and asthma-treating clinicians (n=247) in the US. Details on the design and results are reported elsewhere.¹
- Individual 1-hour online qualitative interviews were conducted with a subset of DCE respondents, after survey completion.
- Individual-level relative attribute importance (RAI) scores were generated for each DCE responded using mixed logit estimates.
- Interview participants were selected if their individual-level RAI scores were either highly divergent from (target 75%) or characteristic of a typical response pattern (target 25%) compared with the RAI rank and preference directions of the overall sample.
- Interviews followed a semi structured guide. Participants were shown a figure of their individual-level RAI scores, then a figure comparing their individual-level scores with the median score for each attribute RAI. Participants were probed on the reasons for their preferences (Figure 1).

Figure 1. Example Participant Selection and Individual-level RAI Outputs

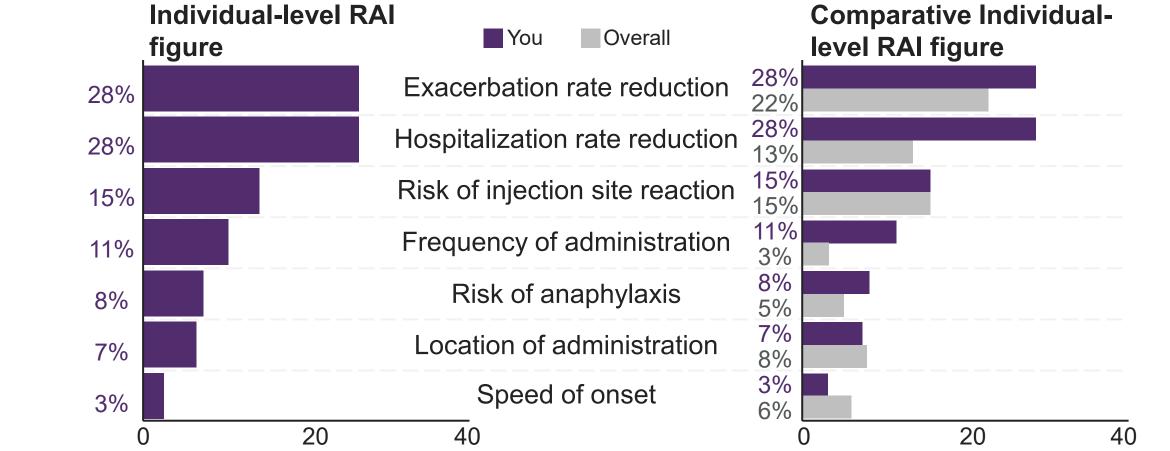
Example patient questions and interview aids: preference similar to sample average Compared with the importance of other features, why do you think reductions in the number of severe asthma attacks and asthma-related hospitalizations were the most

important treatment features for you? How frequently have you been hospitalized due to asthma over the last year? Why was speed of onset the least important treatment feature for you?



Example clinician questions and interview aids: Preference divergent from sample average • Can you briefly summarize why speed of onset was the most important treatment feature for you? Is this something that is important to your patients?

Compared with the importance of other features, why do you think location of administration was the least important treatment feature for you?

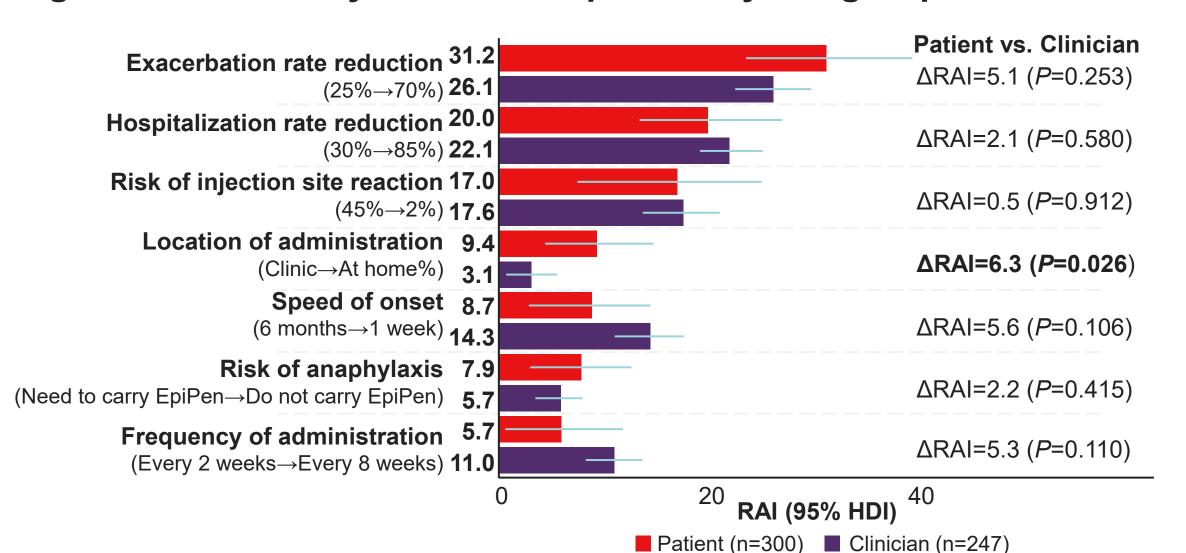


Results

Abbreviations: RAI = relative attribute importance

Figure 2. Main Study Overall Sample RAI by Subgroup¹

Abbreviations: HDI = high density interval; RAI = relative attribute importance



Experience with EpiPen

Male, n (%)

Figure 3. Descriptive Characteristics

classification, n (%) 22 (88.0) Yes, current or previous **Experience of reaction to** allergy medicine shots (n=23), n (%) 13 (56.5) Yes, current or previous



Practice specialty, 6 (24.0) Pulmonologist 19 (76.0) Allergist

Current moderate-to-severe asthma patient volume, n (%) 2 (8.0) 10–14 1 (4.0) 15–19 22 (88.0) 20 or more

1 (4.0) WC

2 (8.0) NWC

22 (88.0) VPC

Abbreviations: AIRQ = Asthma Impairment and Risk Questionnaire; NWC = not-well controlled; VPC = very poorly controlled; WC = well-controlled

Results (cont.)

Figure 4. Key Rationale for Asthma Treatment Preferences

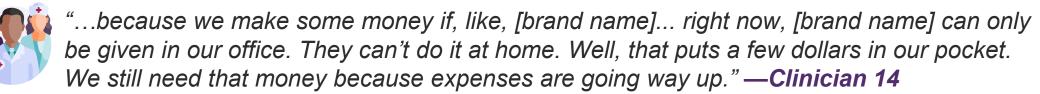
Personal experience with attributes that increased/decreased preference

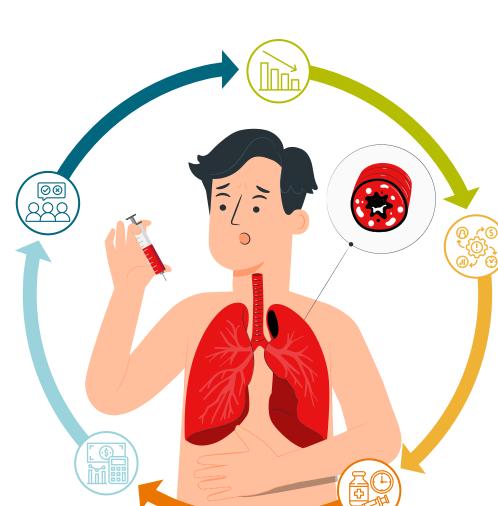
• Participants commonly reported experience (or lack thereof) as rationale for their attribute importance scores.

...the reason is, I really haven't had many hospitalizations due to this [asthma]." —Patient 3 since I don't have many hospitalizations amongst my asthmatics, it's [hospitalization rate reduction] not that big of a deal to me.... I don't want to downplay the importance of reducing hospitalizations but again, for my particular patient population, that's not a big issue amongst

my severe asthmatics in the first place." —Clinician 15

Clinicians considered business revenue and patients' financial burden when considering treatment administration





Low RAI due to low frequency of events

- Participants with comparatively low RAI reflected on those outcomes as occurring infrequently (e.g., hospitalizations and anaphylaxis).
- ...I'm not as concerned as I was during the early years, when they were first approved, because with the clinical experience we've seen very few reactions." —Clinician 24

Perceived severity and potential long-term impact

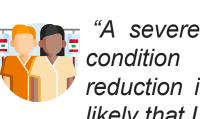
The severity of impacts and downstream consequences of attributes were mentioned when attributes were of a relatively high importance; even where incidence was low. For example, the perceived severity of an anaphylactic reaction led to its prioritization.

Improved patient compliance

- Some clinicians linked their preferences around injection site reaction, speed of onset, and dosing requirements to patient compliance.
- Convenient for patients. And then two is compliance. Anytime you add a medicine on that is used more frequently, you know, there tends to be missed doses, people forget, or people decide not to do it anymore."—Clinician 2

Figure 5. Post-DCE Qualitative Interviews: Methodological Learnings

- Time between DCE survey and follow-on interview completion should be as short as possible. Challenges include time required to: Complete the data collection and conduct the overall analyses to facilitate comparisons
- Identify individual-level response patterns of specific interest to address study objectives
- Recontact and schedule interview participants



"A severe asthma attack also triggers a heart condition known as atrial fibrillation, and a reduction in those severe attacks makes it less likely that I do slip back into a-fib." —Patient 2



 "You go in the hospital, that chances are you're gonna pick up something else or sometimes you go into hospital, you don't come out."—Patient 8

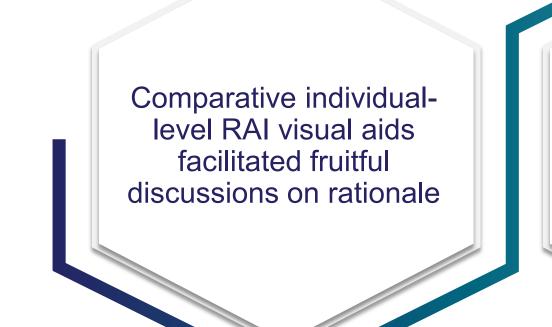


"...the [exacerbation rate] reduction is really important because of that fear, the fear for me to struggle... the struggle to survive." —



important to me because I have other health conditions other than asthma, and they require hospitalization often enough ...I have an unhealthy dislike for hospitals." —Patient 2

[hospitalization rate reduction] is



Post-DCE qualitative interviews require careful logistical planning

Rationale for attributes with RAIs in the middle of the range was non-specific

Post-DCE qualitative interviews identify assumptions and heuristics employed by respondents

Explicit consideration of attribute level range is critica for accurate and insightfu discussions

Insights were richest at the extremes of importance or unimportance

 Several participants reflected on the value of the figures in supporting their responses to the interview questions.



"Time to that improvement happening isn't as important as the improvement



"The frequency of administration, whether it's once a week or once a month, or once every few months, is important but not all that important." — Clinician 15

In some interviews, participants did not initially align with their individual-level RAI ranks that were presented to them. When reminded of the level range from the DCE, in most cases participants could resolve the discrepancies.



.it [high ranking on injection site reactions attribute] may have also had to do more with the fact that there were such a wide range in terms of the side effect of an injection-site reaction So, if they were all sort of in the same range of all 20%, that would be mild to modest risk of site injection. But if you're talking about 40%, that's an awful high percentage."—Clinician 3

Limitations

- Participants' opt-out behaviors were not analyzed or considered, future studies might probe the rationale behind opt-out behaviors.
- The post-DCE interviews took place several months after completion of the DCE survey, ideally the interviews would be conducted within a few days to weeks of completion of the DCE.

Conclusions

- Post-DCE qualitative interviews provide valuable insights into the rationale behind treatment preferences estimated using quantitative approaches.
- These data may be particularly valuable when preferences are highly heterogenous and/or the rationale for specific preferences is poorly understood.
- The results may help explain heterogeneity and/or identify relevant covariates that may be evaluated in quantitative models exploring heterogeneity.

References

1. Ross et al. *J Asthma*. 2024;61(12):1746-58

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