Anxiety and Well-being Related to Epinephrine Nasal Spray versus Autoinjector in Food Allergic Patients and Caregivers

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RATIONALE

- Despite current clinical guidance, epinephrine administration during severe allergic reactions remains suboptimal, potentially due to psychological barriers associated with epinephrine autoinjector (EAI) use.
- This study aimed to compare self-reported anxiety and well-being associated with epinephrine nasal spray versus EAI use.

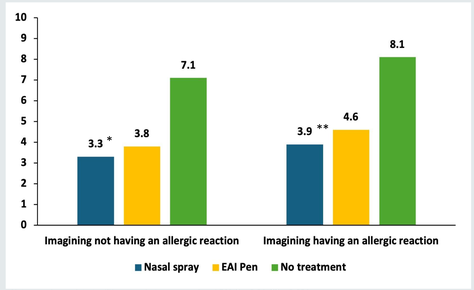
METHODS

- A total of 200 food allergic adult patients and 100 caregivers of food allergic patient children participated in the study. The most frequently reported allergens in adult patients were shellfish (40%), peanuts (33%), and milk (22%); pediatric patients reported peanuts (55%), shellfish (39%), and eggs (19%).
- At the time of the survey, 57% of adults and 97% of children owned an EAI.
- Respondents reviewed treatment profiles with an epinephrine nasal spray device and an EAI pen. They were asked to rate their expected anxiety and expected well-being when imagining having access to different treatment options (i.e., no treatment, EAI, nasal spray) in different daily scenarios. Anxiety was assessed from **0** (not anxious at all) to **10** (extremely anxious). Expected well-being was assessed using a EuroQoL Visual Analog Scale (EQ-5D VAS) from **0** (worst imaginable health state) to **100** (best imaginable health state).

RESULTS

- In general, not having access to epinephrine was associated with worse self-reported anxiety and well-being across life scenarios.
- Adult patients reported reduced anxiety when imagining having access to a nasal spray versus EAI pen during both scenarios of having [nasal vs. EAI p<0.001] and not having an allergic reaction [nasal vs. EAI p<0.01] (see **Figure 1**).

Figure 1: Expected Anxiety – Adult Patients

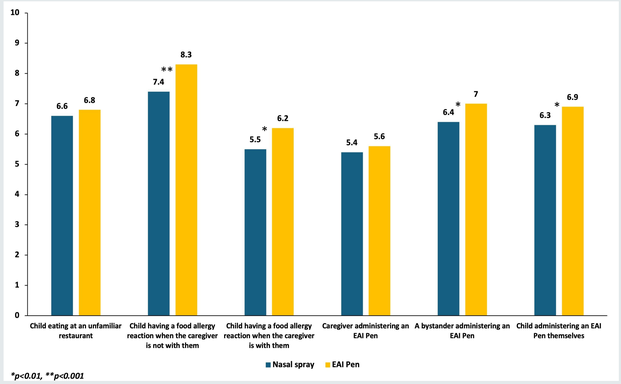


*Note: p-values relate to differences between nasal and EAI; *p<0.01, **p<0.001*

RESULTS

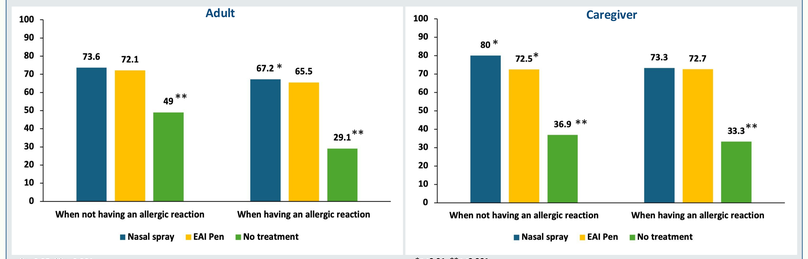
- When imagining different allergic reaction scenarios, caregivers expected to personally experience reduced anxiety when their children have access to a nasal spray versus EAI pen in different scenarios (e.g., their child having a food allergy reaction when they are not present, their child is self-administering treatment, etc.) (see **Figure 2**).
- In the well-being assessment when imagining having an allergic reaction [nasal vs. EAI p<0.05; nasal vs. no Tx p<0.001] and imagining not having an allergic reaction [nasal vs. no Tx p<0.001; EAI vs. no Tx p<0.001], adult patients expected improved well-being with access to nasal spray relative to EAI pen (see **Figure 3**). Caregivers expected improved well-being when imagining their children have access to nasal spray relative to EAI pen [nasal spray vs. no Tx, EAI vs. no Tx p<0.001] in both allergic reaction scenarios (see **Figure 3**).

Figure 2: Expected Anxiety – Caregiver Allergic Reaction Scenarios



**p<0.01, **p<0.001*

Figure 3: Expected Well-being – Adult Patient and Caregiver

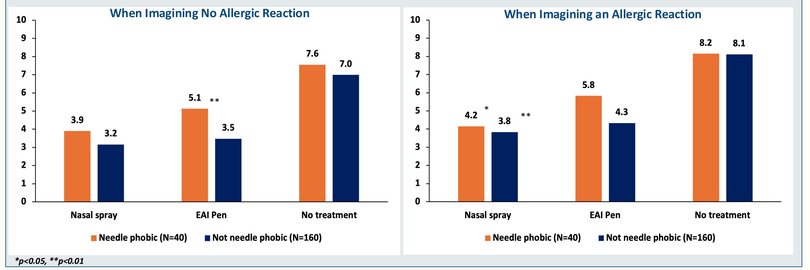


**p<0.05, **p<0.001* **p<0.01, **p<0.001*

RESULTS

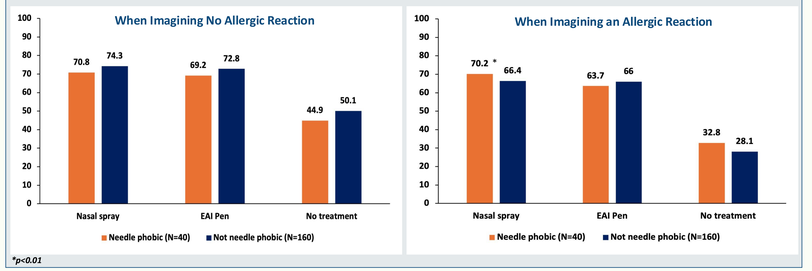
- Reduction in expected anxiety was greater in needle-phobic (n=40) versus non-needle-phobic adult patients (n=160) across different allergy scenarios (see **Figure 4**). Needle-phobic adults had significantly larger expected increases in well-being scores with nasal spray access versus EAI compared to those adults who were not needle-phobic (see **Figure 5**).

Figure 4: Expected Anxiety – Adult Patient by Needle Phobia



**p<0.05, **p<0.01*

Figure 5: Expected Well-being – Adult Patient by Needle Phobia



**p<0.01*

CONCLUSIONS

- Having access to an epinephrine treatment is expected to be associated with improved anxiety and well-being for adult patients and caregivers of pediatric patients.
- Adult patients and caregivers expected to experience an improvement in their own anxiety or well-being when imagining themselves or the patients at risk having access to nasal administration of epinephrine during acute episodes of severe allergic reactions, especially for needle-phobic patients.

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