P015

Patient experiences and preferences for non-oral acute migraine treatments: A discrete choice experiment

Lena Hubig,[1] Timothy Smith,[2] Lucy Abraham,[3] Josh Coulter,[4] Karin Hygge Blakeman,[5] Joseph C Cappelleri,[4] Ekta Agarwal,[4] Siu Hing Lo[1]

[1]Acaster Lloyd Consulting Ltd., United Kingdom; [2]StudyMetrix Research, LLC, United States; [3]Pfizer R&D UK Ltd., United Kingdom; [4]Pfizer Inc., United States; [5]Pfizer AB, Stockholm.

Objectives

- Quantify patient preferences for attributes of non-oral acute migraine treatments, including nasal administration, speed of relief, and side effect profiles.
- Explore preference heterogeneity using latent class analyses.

Conclusions

- Respondents' preferences differed for acute migraine treatment attributes, highlighting the need for patient preferences to be considered when making treatment decisions.
- Treatment mode of administration and the speed of pain relief/freedom may be more important to different groups of patients.

Background

- Migraine affects over 1 billion people globally,[1] causing recurrent attacks of severe pain and symptoms like nausea, vomiting, and sensitivity to light and sound.[2]
- Acute migraine treatments are used to treat attacks and reduce the severity of head pain and associated symptoms.
- Many individuals report dissatisfaction with their current treatments either because the pain relief is too slow, unreliable, or doesn't last long enough.[3] Common side effects such as nausea, dizziness, chest discomfort (from triptans), and gastrointestinal upset (from NSAIDs and ergotamines) further exacerbate treatment burden and non-adherence.[4]
- Data shows that fast symptom relief and return to normal function are important to patients with migraine,[5,6] and patients may prefer to take intranasal treatments during an attack over other treatment administrations, partly due to decreased risk of nausea.[7, 8]

Materials and Methods

Population and recruitment

- Cross-sectional online survey (29 August – 17 December 2024) in the US and Germany.
- Participants who had a self-reported diagnosis of migraine, provided informed consent, were aged ≥18 years, US/German resident, fluent in English/German, and used two or more different acute migraine medications within the last 3 months (a) of which at least one was a non-oral medication or (b) never used an non-oral medication and stated that they were 'very/somewhat dissatisfied' or 'neither satisfied or dissatisfied' with their current medication (equal split per country and group).

Survey design

- In a Discrete Choice Experiment (DCE), participants chose between hypothetical treatment profiles to elicit preferences for acute treatments. Profiles were defined by eight treatment characteristics ('attributes') with 2-6 levels each (Table 1).
- Attributes were identified and developed via qualitative interviews (n=20)[9] and clinical trial data (NCT03872453, NCT04571060).
- The survey was tested in cognitive debriefing interviews (n=12), where participants confirmed that the survey and attributes were relevant and clear.
- Information about each attribute was given prior to completing choice tasks.
- Each participant was randomly assigned 12 choice tasks (see example in Figure 1) from one of two blocks based on an experimental design.

Analysis

- Preference data were analyzed using latent class logit (LCL) model, which identifies classes based on similar preferences. These classes can then be used to explain heterogeneity using patient characteristics.
- The number of classes was determined from 2-5 classes based on the goodness of fit statistics (Akaike Information Criterion [AIC], Bayesian Information Criterion [BIC]).
- Model estimates (β) show preference for levels relative to reference level
- Relative attribute importance (RAI) representing the importance of each attribute relative to all other attributes was calculated as a percentage of overall utility change.
- The relationship between demographic and clinical characteristics and latent class membership was assessed using descriptive analysis and logistic regression based on predicted class membership.

Table 1. Attributes and Attribute Levels in order shown to participants

Attribute	Levels[a]
Pain freedom (2h): Percentage of patients with no headache pain within 2 hours	(1) 20%, (2) 35%, (3) 45%, (4) 65%
Pain relief (15 min): Percentage of patients experiencing pain relief (moderate/severe to no/mild) within 15 minutes	(1) 10%, (2) 15%, (3) 20%, (4) 30%
Normal function (30 min): Percentage of patients who can return to normal function within 30 minutes	(1) 5%, (2) 8%, (3) 12%, (4) 18%
Treatment administration	(1) Injection using a syringe, (2) Injection using an autoinjector, (3) Ready-to-use nasal spray into one nostril, (4) Two-part nasal spray into both nostrils, (5) Orally disintegrating tablet (ODT), (6) Oral tablet
Side effects of the medicine that you will have	(1) No side effects, (2) Feeling nauseous, (3) Feeling nauseous, sleepy, experiencing hot flashes and a sensation of pressure and tightness in chest and throat, (4) Feeling nauseous, dizzy and drowsy
Side effects relating to how you take the medicine[b] that you will have	(1) No side effects, (2) Pain and/or stinging or burning sensation at injection site, (3) Discomfort and burning in nose or throat, (4) Strong, bitter taste
How often you can take the medicine	(1) Up to ten days per month, (2) As many days as needed within a month
Treatment window	(1) Most effective when taken within first 15 minutes after symptoms start, (2) Equally effective when taken any time during a migraine

[a]First level (1) = reference level; [b]To avoid implausible combinations, 'Pain and/or stinging or burning sensation at injection site' were only shown alongside injection using a syringe&autoinjector.

Limitations

- Patients' real treatment choices may be affected by additional clinical and emotional factors,[10] not considered in the DCE.

Figure 1. Example Choice Task

Please compare Medicines A and B and select which medicine you would choose to take. Assume your choice of medication would not affect how much you pay for your medication.

Description	Medicine A	Medicine B
Percentage of patients with **no headache pain within 2 hours**	65 out of 100 patients with no headache pain within 2 hours; 35 out of 100 patients with headache pain at 2 hours	45 out of 100 patients with no headache pain within 2 hours; 55 out of 100 patients with headache pain at 2 hours
Percentage of patients experiencing **pain relief within 15 minutes**	30 out of 100 patients experiencing pain relief within 15 minutes; 70 out of 100 patients with no pain relief at 15 minutes	20 out of 100 patients experiencing pain relief within 15 minutes; 80 out of 100 patients with no pain relief at 15 minutes
Percentage of patients who can return to **normal function within 30 minutes**	12 out of 100 patients who can return to normal function within 30 minutes; 88 out of 100 patients who cannot return to normal function at 30 minutes	5 out of 100 patients who can return to normal function within 30 minutes; 95 out of 100 patients who cannot return to normal function at 30 minutes
How you take the medicine	**Ready-to-use nasal spray into one nostril**	**Two-part nasal spray into both nostrils**
Side effects of the medicine that you will have	**Feeling sick (nauseous)**	**Feeling sick (nauseous), dizzy, and drowsy**
Side effects relating to how you take the medicine that you will have	**Strong, bitter taste**	**Strong, bitter taste**
How often you can take the medicine	**As many days as needed** per month	**Up to ten days** per month
Treatment window	Effective when taken **any time** during a migraine	Most effective when taken **within the first 15 minutes** of symptom onset
Which medicine would you choose?	☐	☐

Results

Participant Characteristics (Table 2):

- 304 participants completed the survey (n=152 per country)
- 89% had severe migraine impact (HIT-6 score ≥60; mean: 65.8)
- 96% used oral migraine treatments; 36% nasal; 29% injections in the past 3 months

Preference Classes: LCL identified two classes (Figure 2):

- Class 1 (48.7%): Prioritized treatment administration (RAI = 30.9%)
  - Participants preferred oral tablet (β=0.80), ODT (β=0.71), ready-to-use nasal spray (β=0.70), two-part nasal spray (β=0.49), and autoinjector (β=0.42) over syringe
  - Administration-related side effects (RAI = 2.5%) and pain freedom at 2 hours (RAI = 3.0%) were the least important treatment attributes
- Class 2 (51.3%): Prioritized pain freedom at 2 hours (RAI = 33.6%)
  - Participants favored a treatment with a higher chance (35-65%, β=1.96-3.04) over a lower chance (20%) of pain freedom
  - Treatment window was least important (RAI = 2.7%)
- Demographic and clinical characteristics were not related to latent class membership (Table 2)

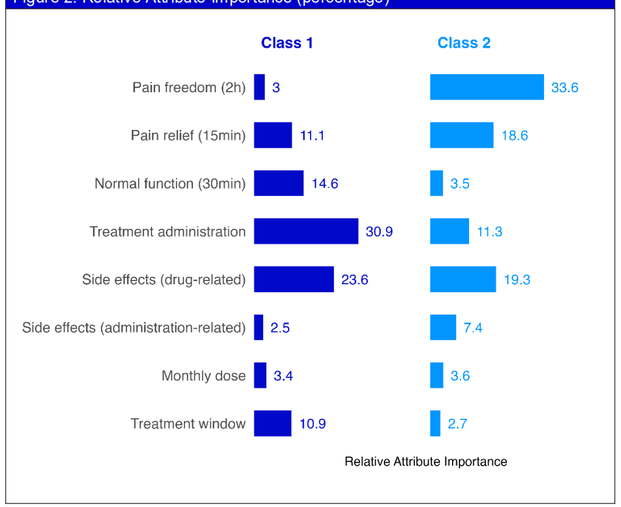
Table 2. Sociodemographic characteristics by latent class membership

Characteristic		Overall, N=304	Class 1, 48.7%[a]	Class 2, 51.3%[a]
Country	US	152 (50%)	72 (50%)	80 (50%)
	Germany	152 (50%)	72 (50%)	80 (50%)
Age (years)	Mean (SD)	40.2 (10.5)	40.3 (10.5)	40.1 (10.5)
	Min, Max	18, 73	20, 71	18, 73
Gender	Male	77 (25%)	39 (27%)	38 (24%)
	Female	217 (71%)	100 (69%)	117 (73%)
	Non-binary/no answer	10 (3%)	5 (3%)	5 (4%)
Employment	Employed full-/part-time	211 (69%)	102 (71%)	109 (68%)
	Not employed/On temporary leave Student/Other	52 (17%)	26 (18%)	26 (16%)
		41 (14%)	16 (12%)	25 (15%)
HIT-6 impact	Little or no impact	3 (1%)	2 (1%)	1 (1%)
	Some/Substantial impact	29 (10%)	12 (8%)	17 (11%)
	Severe impact	272 (89%)	130 (90%)	142 (89%)
Migraine treatments (last 3 months)[b]	Oral	292 (96%)	139 (97%)	153 (96%)
	Nasal	108 (36%)	59 (41%)	49 (31%)
	Injection	88 (29%)	40 (28%)	48 (30%)
	Suppository	35 (12%)	17 (12%)	18 (11%)

Abbreviations: HIT-6, Headache Impact Test; N, Number of observations; SD, Standard Deviation; US, United States

[a]Class membership probability; [b]Multi-response question

Figure 2. Relative Attribute Importance (percentage)



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