Objective

- Relief of the most bothersome migraine symptom (MBS) (nausea, photophobia, or phonophobia) has become a co-primary endpoint in acute migraine clinical trials.
- The objective of this analysis was to measure perceptions of the single most bothersome migraine symptom among a representative sample of adults with migraine and to better understand differences in headache features by most bothersome cohorts.

Methods

- Respondents, ≥18 years, were recruited to the MST Study from a nationwide online research panel, using stratified random sampling. A validated screener used modified ICHD-3-beta criteria to identify individuals with migraine.
- Respondents averaging ≥1 headache day per month (MHD) over the previous 3 months were included as episodic migraine (EM; 1 to 14 headache days per month) or chronic migraine (CM; ≥15 headache days per month).
- Asked: “Over the past 3 months, which has been the single most bothersome symptom when you have it with your headaches (before you take medication)?”
- This initial analysis limited respondents endorsing all 3 symptoms.
- The sample was stratified by most bothersome symptom and contrasted on headache features and burden measures using ANOVA and chi-square analysis (P<.05).

Table 1. Demographics, medication use, and headache frequency for 3 symptom groups

<table>
<thead>
<tr>
<th>Symptom</th>
<th>N=627 (16.1%)</th>
<th>N=807 (46.4%)</th>
<th>N=304 (17.5%)</th>
<th>Chi</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>225 (44.0%)</td>
<td>377 (47.4%)</td>
<td>47 (15.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>377 (47.4%)</td>
<td>427 (52.4%)</td>
<td>157 (51.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Caucasian</td>
<td>362 (58.0%)</td>
<td>504 (64.4%)</td>
<td>165 (54.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>265 (42.0%)</td>
<td>293 (37.6%)</td>
<td>99 (32.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household income</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>&lt; $25,000</td>
<td>230 (36.6%)</td>
<td>391 (48.4%)</td>
<td>77 (25.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$25,000 to $49,999</td>
<td>245 (39.4%)</td>
<td>290 (36.0%)</td>
<td>87 (28.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000 to $74,999</td>
<td>192 (30.1%)</td>
<td>161 (20.0%)</td>
<td>71 (23.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$75,000 to $99,999</td>
<td>190 (29.9%)</td>
<td>182 (22.5%)</td>
<td>82 (27.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$100,000 to $124,999</td>
<td>120 (18.9%)</td>
<td>129 (15.9%)</td>
<td>44 (14.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ $125,000</td>
<td>102 (16.3%)</td>
<td>107 (13.2%)</td>
<td>41 (13.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (SD)</td>
<td>47.8 (13.4)</td>
<td>53.1 (14.8)</td>
<td>49.4 (13.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly HA Days (Mean)</td>
<td>3.6 (2.25)</td>
<td>4.3 (2.59)</td>
<td>2.9 (2.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache Pain</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Severe</td>
<td>148 (23.5%)</td>
<td>200 (24.8%)</td>
<td>73 (24.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>259 (41.0%)</td>
<td>271 (33.7%)</td>
<td>108 (35.5%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>120 (19.2%)</td>
<td>120 (14.8%)</td>
<td>49 (16.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuisance Pain *</td>
<td>318 (50.7%)</td>
<td>450 (55.8%)</td>
<td>180 (59.2%)</td>
<td>6.855</td>
<td>.032</td>
</tr>
<tr>
<td>Photophobia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuisance</td>
<td>316 (50.6%)</td>
<td>447 (55.3%)</td>
<td>179 (58.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>255 (41.4%)</td>
<td>228 (27.9%)</td>
<td>106 (34.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuisance Pain</td>
<td>156 (25.2%)</td>
<td>132 (16.3%)</td>
<td>65 (21.4%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuisance Pain</td>
<td></td>
<td></td>
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</tbody>
</table>

Results

- 1,738 (23.1%) reported all three symptoms and were included in this analysis.
- Average headache frequency was 6.9 days per month.
- No differences seen among symptom groups for monthly headache day frequency, severity of head pain, or Rx acute or preventive medication.
- Moderate-to-extreme body pain was significantly higher with photophobia vs nausea (Chi=3.61, P < .10), and phonophobia vs nausea (Chi=5.94, P < .05). Photophobia vs phonophobia did not differ. (Table 1)
- Same pattern seen for the presence of allodynia and moderate-to-severe headache-related disability (Fig 2).

Conclusions

- Among respondents where photophobia and phonophobia are most bothersome (compared to nausea) there were comparable rates of severe head pain, but more body pain, ictal allodynia symptoms and headache-related disability.
- Allodynia was associated with worsening headache and elevated rates among those with phono and photo as most bothersome suggest this could be another marker of progression.
- Future analyses will further explore these findings.

Fig 1. Frequency of most bothersome symptoms in migraine patients

- Nausea: 20.6% (95% CI: 18.5-22.8) vs 26.3% (95% CI: 24.1-28.6), P=.002
- Photophobia: 22.7% (95% CI: 20.7-24.7) vs 34.8% (95% CI: 32.7-36.9), P<.001
- Phonophobia: 22.2% (95% CI: 20.2-24.3) vs 38.5% (95% CI: 36.4-40.7), P<.001

Fig 2. Rates of allodynia and migraine-related disability for three symptom groups

- Nausea vs Photophobia: NS, P>.05
- Nausea vs Phonophobia: NS, P>.05
- Photophobia vs Phonophobia: NS, P>.05

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