The Impact of Persistent Nausea in Persons with Migraine: Longitudinal Results from the American Migraine Prevalence and Prevention (AMPP) Study

Richard B. Lipton MD[1,2], Dawn C. Buse PhD[1,2], Kristina M. Fanning PhD[3], Michael L. Reed PhD[3]
1. Montefiore Medical Center, Bronx; NY, 2. Albert Einstein College of Medicine, Bronx, NY; 3. Vedanta Research, Chapel Hill, NC

BACKGROUND / OBJECTIVE

- Cross-sectional studies have found that headache-related nausea is associated with greater pain severity and disability as well as diminished quality of life, functional ability and reduced response to triptans. However, little is known about the patterns and impact of persistent nausea associated with migraine.
- The objective of this study was to assess the frequency and impact of persistent frequent nausea with migraine within a longitudinal population-based sample of persons with migraine.

METHODS

- The analysis included 3,673 AMPP respondents from 2007, 2008 and 2009 who met ICHD-2 criteria for episodic migraine in 2007.
- Persistent Frequent Nausea (PFN) was defined as nausea half the time or more in both 2007 and 2008 (see Table 1). The PFN and Nausea Free respondents were contrasted on sociodemographics, comorbidities and outcomes.

METHODS (Cont.)

- The following variables were included in the analysis: headache-related disability (assessed by MIDAS), headache impact (based on HIT-6), rates of clinical depression and anxiety (PRIME-MD Patient Health Questionnaire), headache pain intensity, triptan medication use and progression from Episodic Migraine (EM, ≤14 headache days/month) to Chronic Migraine (CM, ≥15 headache days per month) during the study period (2007 to 2009).
- Odds ratios (ORs) from binary and ordinal logistic regression were used to contrast PFN with the Nausea Free group on outcome variables. Modeling adjusted for sociodemographics (age, gender, race, ethnicity/Hispanic origin, household income, census region, household size and population density) and symptom severity. Symptom severity was assessed using a composite score summing frequency (*never, rarely, less than half the time* and *half the time or more)* for headache features: unilateral pain, pounding/throbbing pain, pain worsens with routine activity, photophobia and phonophobia. Chi-square was used to measure sociodemographic differences. ANOVA tested for mean differences in age.

CONCLUSIONS

- PFN is common, occurring in nearly 40% of people with migraine, and 16% reported worsening nausea symptoms over time. Nausea improved or remained rare/absent in one-third of migraineurs. Predictors of symptom improvement warrant further study.
- More frequent moderate to severe pain, triptan use, headache-related impact and clinical depression were associated with PFN. Treatment emergent nausea and PFN are distinct, however, confounding by indication may account in part for increased triptan use in the PFN group.
- A surprising finding was the higher rate of CM onset among PFN versus Nausea Free cases. This suggests that persistent nausea, in addition to heightening disease impact, is associated with disease progression.
- Greater attention among clinicians regarding secondary symptoms like nausea is important given the outcomes associated with persistent and frequent nausea in persons with migraine.

RESULTS

Table 1: Nausea Frequency Characteristics Among 2007 and 2008 AMPP Survey Respondents and Resulting Nausea Symptom Patterns

	Nausea Frequency with Headache in 2008		
Nausea Frequency with Headache in 2007	Nausea Never/Rarely	Nausea Less Than Half The Time	Nausea Half The Time Or More
Nausea Never/Rarely	**Nausea Free** n=409 (11.1%)	New Onset n=245 (6.7%)	
Nausea Less Than Half The Time	Remission n=544 (14.8%)	Persistent Infrequent n=353 (9.6%)	Exacerbation n=338 (9.2%)
Nausea Half The Time Or More		Improvement n=366 (10.0%)	**Persistent Frequent Nausea** (PFN)=1,418 (38.6%)

Table 2. Sociodemographic Differences, Pain Ratings and Triptan Use for the Nausea Free and Persistent Frequent Nausea Groups in 2009

	Nausea Free	PFN	Significance
Female	71.1%	86.1%	49.78, p<0.001*
Income <$30,000	26.9%	34.5%	11.13, p<0.05*
Mean Age	53.4 (SD 12.6)	51.4 (SD 11.6)	9.26, p<0.05**
Mod/Severe Pain (Half The Time Or More)	55.6%	81.6%	1.63 (1.23-2.17) p<0.001†
Triptan Use	6.4%	19.3%	2.31 (1.47-3.62) p<o.001†

*Chi Square test, **ANOVA F-test, †Odds Ratio from Logistic regression adjusting for socio-demographics and overall symptom severity.

- Nearly four in ten (38.6%) migraineurs had PFN and an additional 9.6% had persistent infrequent nausea. Only 6.7% had new onset nausea while 9.2% reported an exacerbation in nausea symptoms. For 24.8% of this sample nausea improved or remitted and 11.1% remained Nausea Free (Table 1).
- Compared with Nausea Free migraineurs PFN was more common in female, lower income, and younger respondents and associated with more moderate-to-severe pain, triptan medication use (Table 2) headache-related impact using HIT-6 (Figure 1), clinical depression (Figure 2) and progression to Chronic Migraine (Figure 3).
- Group contrasts for headache-related disability (MIDAS) and clinical anxiety (Prime-MD) were not statistically significant.

Figure 1: Degree of Headache-related Impact (HIT-6) in 2009

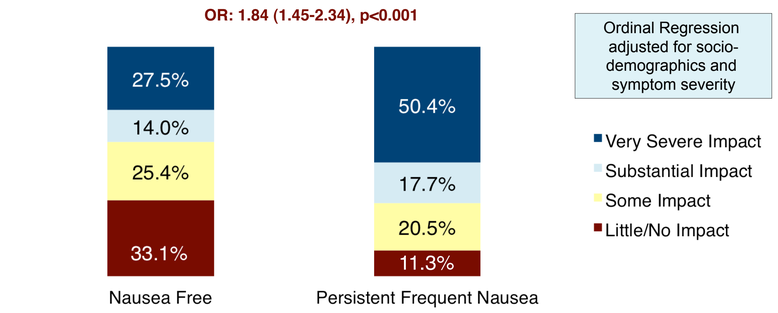


Figure 2: Clinical Depression and Anxiety (PRIME-MD) in 2009

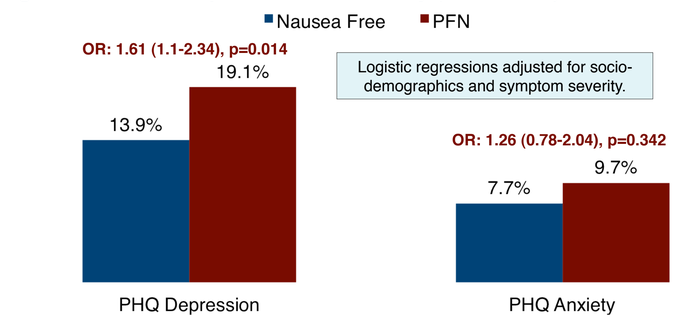
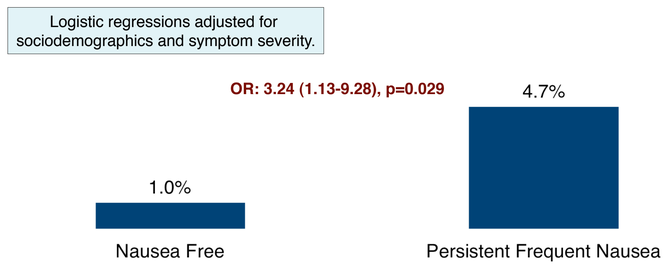


Figure 3: Rates of EM to CM Transition between 2007 and 2009



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