

An Inquiry Into Prophylactic Treatment Patterns by Migraine Diagnosis: The AMEND Study

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INTRODUCTION

- Chronic migraine (CM) is associated with substantial symptom burden, disability, and use of healthcare resources¹
- Although an approved treatment for prevention of CM is available (onabotulinumtoxinA),² CM is likely undertreated based on research indicating underdiagnosis by clinicians³
- Understanding prophylactic treatment patterns and identifying potentially underdiagnosed CM is an important aspect of optimizing patient care

OBJECTIVE

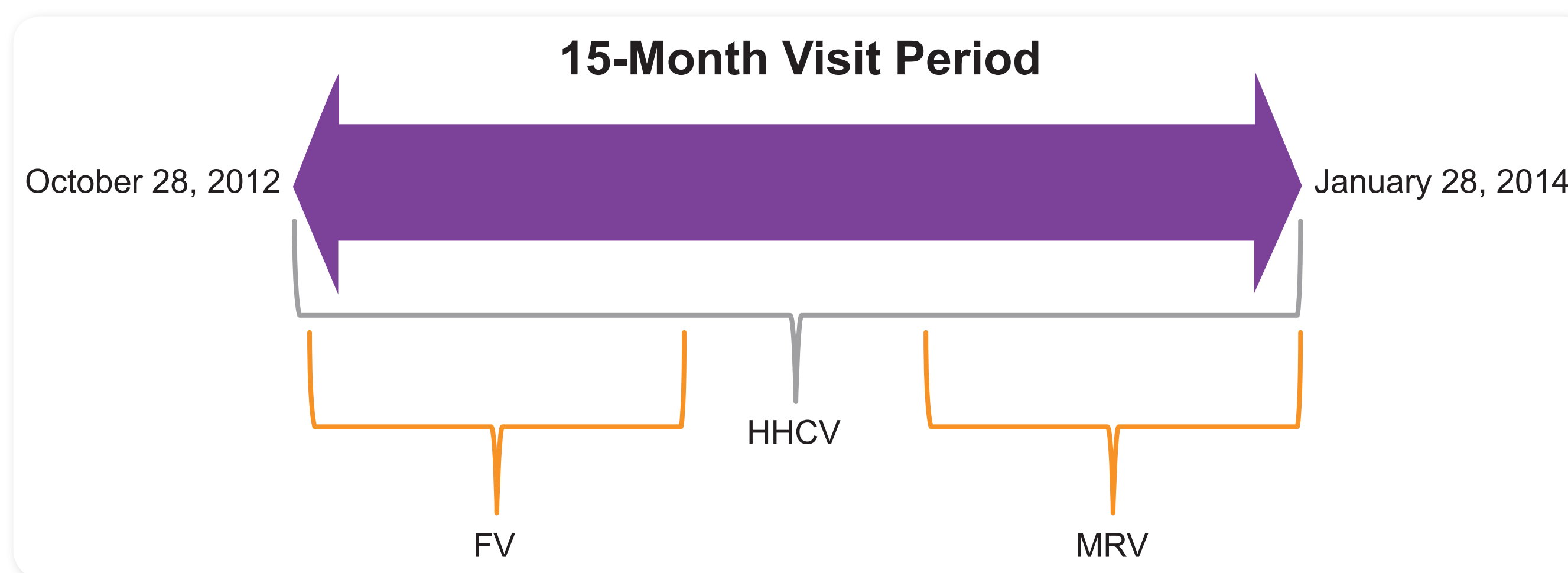
- To assess diagnosis rates and prophylactic treatment patterns for migraine patients, including those with and without a diagnosis of CM

METHODS

Study Design

- This was a noninterventional, retrospective study
- Medical records from 3 neurologic practice sites were reviewed for inclusion of headache patients aged 18–65 years
- Qualifying medical records required (**Figure 1**):
 - ≥2 visits over 15 months during the study period
 - AND
 - CM, defined as ≥15 headache days per month for >3 months with migraine features on ≥8 days per month⁴
 - OR
 - Non-CM, defined as documented ≥8 headache days per 30-day period

Figure 1. Methods for Data Collection



FV=first visit occurring on or after October 28, 2012; HHCV=highest headache count visit reported, if not the same as FV or MRV; MRV=most recent visit occurring on or before January 28, 2014 (institutional review board approval date).

Assessments

- The diagnosis, number of headache days, and prophylactic medication used were recorded at the first visit and the most recent visit
 - Number of headache days was also collected at the highest headache count visit if that visit did not equal the first visit or the most recent visit
- Demographic and collected variables were analyzed using descriptive statistics (SAS V9.2) with no imputation for missing data

RESULTS

Demographics

- Of 6070 patient records in the site-level headache population, 459 met eligibility criteria and were included in the study
- The mean (SD) age of the study population was 45.3 (11.6) years (95% CI, 44.2–46.3), ranging from 20.0–66.0 years
- The mean (SD) time since primary headache diagnosis was 1.9 (1.9) years (95% CI, 1.6–2.2), ranging from 0.2–15.5 years

Headache Diagnoses

- The majority (86.0%, n=295) of non-CM patients presented with a diagnosis of migraine at the first on-study visit
- 25.3% (n=116) of patients presented with a diagnosis of CM at first on-study visit
- The proportion of patients with a diagnosis of CM increased from 25.3% (n=116) at the first visit to 40.1% (n=184) at the most recent visit (**Table 1**)

Table 1. Primary Headache Diagnosis at Most Recent Visit

Variable	First Visit	Most Recent Visit
Number of subjects	459	459
Primary migraine/headache diagnosis, n (%)		
Chronic migraine	116 (25.3)	184 (40.1)
Non-chronic migraine	343 (74.7)	275 (59.9)
Non-chronic migraine: headache diagnosis type, n (%)		
Classic/common migraine	33 (9.6)	30 (10.9)
Migraine headache	295 (86.0)	234 (85.1)
Chronic daily headache	11 (3.2)	8 (2.9)
Recurring episodic tension-type headache	4 (1.2)	3 (1.1)

Headache Day Frequency

- The mean (SD) number of headache days over a 30-day period during the visit with the highest headache count was 20.3 (9.2) days (**Table 2**)

Table 2. Summary of Headache Days at the Highest Headache Count Visit

All patients: number of headache days per 30-day period	
N	459
Mean ± SD (95% CI), d	20.3±9.2 (19.5–21.2)
Median, d	19.3
Range, d	0.0–30.0
Non-chronic migraine: ≥15 headache days per 30-day period	
Yes, n (%)	150 (54.6)
No, n (%)	125 (45.4)
95% CI for proportion	48.7–60.4
Non-chronic migraine: headache days per 30-day period	
Mean (95% CI)	19.2 (18.2–20.2)
Chronic migraine: headache days per 30-day period	
Mean (95% CI)	22.0 (20.6–23.4)

- The mean number of headache days for patients classified as non-CM was 19.2 (95% CI, 18.2–20.2)
- The mean number of headache days for patients with a CM diagnosis was 22.0 (95% CI, 20.6–23.4)
- A large proportion (54.6%, n=150) of non-CM patients with a migraine diagnosis also had ≥15 headache days per 30-day period at least once during the study period

Prophylactic Medications

- Rates of prophylactic medication use for migraine were high and increased over time (**Table 3**)
 - At the first visit, 78.6% of CM and non-CM patients (361/459) were treated prophylactically for headache/migraine; this increased to 85.6% (393/459) at the most recent visit

Table 3. Prophylactic Medications at First Visit and Most Recent Visit

Variable	First Visit			Most Recent Visit		
	All Patients	Chronic Migraine	Non-chronic Migraine	All Patients	Chronic Migraine	Non-chronic Migraine
Subjects, n	459	116	343	459	184	275
Prophylactic medication						
Yes, n (%)	361 (78.6)	102 (87.9)	259 (75.5)	393 (85.6)	166 (90.2)	227 (82.6)
No, n (%)	98 (21.4)	14 (12.1)	84 (24.5)	66 (14.4)	18 (9.8)	48 (17.4)
95% CI, %	74.9–82.4	82.0–93.9	71.0–80.1	82.4–88.8	85.9–94.5	78.1–87.0
OnabotulinumtoxinA						
Yes, n (%)	61 (13.3)	48 (41.4)	13 (3.8)	88 (19.2)	80 (43.5)	8 (2.9)
No, n (%)	398 (86.7)	68 (58.6)	330 (96.2)	371 (80.8)	104 (56.5)	267 (97.1)
95% CI, %	10.2–16.4	32.4–50.3	1.8–5.8	15.6–22.8	36.3–50.6	0.9–4.9
Other prophylactic medication						
Yes, n (%)	341 (74.3)	84 (72.4)	257 (74.9)	363 (79.1)	138 (75.0)	225 (81.8)
No, n (%)	118 (25.7)	32 (27.6)	86 (25.1)	96 (20.9)	46 (25.0)	50 (18.2)
95% CI, %	70.3–78.3	64.3–80.6	70.3–79.5	75.4–82.8	68.7–81.3	77.3–86.4

- At first visit, 3.8% (n=13) and 41.4% (n=48) in the non-CM and CM diagnosis populations, respectively, were using onabotulinumtoxinA as prophylactic treatment. Additionally, at first visit, topiramate was the most frequently used oral prophylactic treatment (140 instances vs the next highest, amitriptyline, with 43 instances)
 - Of the 61 patients who received onabotulinumtoxinA at the first visit (overall population), 50 remained on therapy at the most recent visit (persistence rate: 82%); the persistence rate was similar between those with (81%) and without (85%) a CM diagnosis
- At the most recent visit, more patients with CM were treated with onabotulinumtoxinA (80/184; 43.5%) than were patients with non-CM (8/275; 2.9%)
- Other common oral prophylactic treatments used at the most recent visit for the non-CM group (who had ≥15 headache days per month) and CM population (with or without onabotulinumtoxinA use) are shown in **Table 4**
- Although classified as non-CM patients in this study, the majority of non-CM patients (150/275; 54.6%) had a headache frequency of ≥15 headache days per month at least once in the study period, suggesting that they may meet criteria for CM

Table 4. Most Common Alternative Prophylactic Medications

Medication Name	Non-CM Patients With ≥15 Headache Day Frequency, n (%)		Patients Classified as CM, n (%)			
	First Visit	Most Recent Visit	CM Patients Using OnabotA		CM Patients not Using OnabotA	
			First Visit	Most Recent Visit	First Visit	Most Recent Visit
Topiramate	48 (32.0)	52 (34.7)	13 (27.1)	16 (20.0)	24 (35.3)	38 (36.5)
Amitriptyline	11 (7.3)	19 (12.7)	3 (6.3)	7 (8.8)	4 (5.9)	6 (5.8)
Propranolol	11 (7.3)	13 (8.7)	3 (6.3)	7 (8.8)	3 (4.4)	13 (12.5)
Nortriptyline	9 (6.0)	9 (6.0)	5 (10.4)	5 (6.3)	0 (0.0)	7 (6.7)
Lamotrigine	9 (6.0)	9 (6.0)	0 (0.0)	5 (6.3)	3 (4.4)	2 (1.9)
Tizanidine	9 (6.0)	13 (8.7)	0 (0.0)	3 (3.8)	4 (5.9)	7 (6.7)
Verapamil	9 (6.0)	8 (5.3)	0 (0.0)	2 (2.5)	10 (14.7)	14 (13.5)
Magnesium	7 (4.7)	15 (10.0)	4 (8.3)	3 (3.8)	7 (10.3)	10 (9.6)
Zonisamide	3 (2.0)	4 (2.7)	4 (8.3)	5 (6.3)	1 (1.5)	2 (1.9)
Divalproex	6 (4.0)	8 (5.3)	2 (4.2)	4 (5.0)	4 (5.9)	5 (4.8)

CM=chronic migraine; onabotA=onabotulinumtoxinA.

CONCLUSIONS

- The data from this study are consistent with underdiagnosis of CM: more than half of those with migraine but without a diagnosis of CM reported ≥15 headache days per month
- Approximately 41% of patients with a CM diagnosis received onabotulinumtoxinA at first visit vs ~4% of those with a non-CM diagnosis; nonetheless, persistence rate in both CM and non-CM groups was high with onabotulinumtoxinA (82%). Oral prophylactics were common among both CM and non-CM groups; topiramate was used most frequently
- Accurate diagnosis of CM is vital to optimize appropriate treatment regimens for patients with this debilitating disorder

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