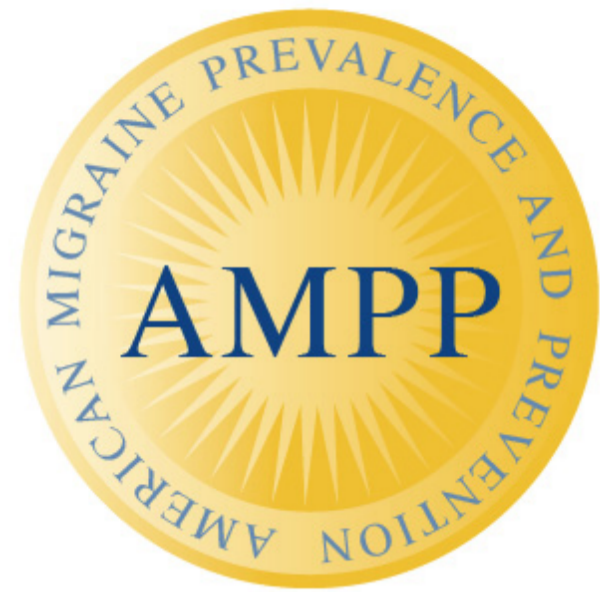# RATES AND PREDICTORS OF REMISSION FROM CHRONIC MIGRAINE (CM) TO EPISODIC MIGRAINE (EM): RESULTS FROM THE AMERICAN MIGRAINE PREVALENCE AND PREVENTION (AMPP) STUDY

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BACKGROUND

Each year, approximately 2.5% of episodic migrainuers develop CM. Though predictors of progression have been studied, data are limited on CM remission and persistence. Additionally, one important goal in treatment is to reduce attack frequency with preventive treatments intending to facilitate the transition from CM to EM, but the real-world benefits of this remission have yet to be quantified.

OBJECTIVE

This study had two objectives:

1) to estimate remission rates in a population-based sample of CM sufferers;

2) to identify potential predictors of CM remission.

METHODS

In 2005, questionnaires were sent to 24,000 severe headache sufferers identified in a previous US population survey and followed annually in 2006-2009. CM subjects (ICHD-2 migraine; ≥15 headache days/month) were identified in 2005 and had 3 consecutive years of follow-up. To assess potential predictors of remission, two migraine groups were compared based on headache status at follow-up (i.e., at 2006 and 2007)

- *Persistent* CM: met CM criteria in 2005 and criteria for CM or high-frequency EM [HFEM:10-14 headache days/month] in 2006-2007

- *Remitted* CM: met CM criteria in 2005 and either LFEM (0-9 headache days/month), no headache, probable episodic migraine, episodic tension-type headache, or other episodic headache in 2006-2007.

To assess potential predictors of remission, those CM who were classified as *persistent* CM were compared to those with *remitted* CM. Demographic variables, body mass index (BMI), depression (PHQ-9), age-of-onset, allodynia (ASC-12), medication utilization, headache-related-disability (MIDAS), and monthly headache day frequency were examined as potential predictors by assessing between and within group effects utilizing logistic regression models. MIDAS scores were classified into five severity grades: little or none (0-5), mild (6-10), moderate (11-20), severe (21-40), and most severe (41+).

RESULTS

Subjects included 383 individuals with CM in 2005 who contributed 3 years of data. Of CM subjects in 2005, 33.9% (n=130) had CM in all 3 years, 52.7% (n=238) had CM in at least 1 year of follow-up and 64.6% (n=292) had either CM or HFEM in at least 1 year of follow-up (eg classified as *persistent* CM). Approximately 26% (n=100) were classified *remitted* CM. (Figure 1)

With regard to predictors of remission, **Table 1** summarizes candidate predictor models adjusted for age, gender, race, population density, geographic region, and household income.

Current use of preventive therapy did predict remission; however, those CM sufferers utilizing preventives were half as likely to remit [OR(95%CI)=0.48(0.28,0.84; p=0.01)].

Those in the highest frequency group (25-31 days/month) were much less likely to remit [OR (95% CI) = 0.21 (0.09, 0.51; p<0.001)] than those in the low frequency CM group (15-19 days/month).

CM sufferers with allodynia were less likely to remit [OR (95% CI) =0.48 (0.25, 0.94; p=0.032)].

FIGURE 1 TRANSITION RATES IN 2006 AND 2007 RELATIVE TO CM STATUS IN 2005 (BASELINE)

Remitted CM 26%

Persistent CM 64%
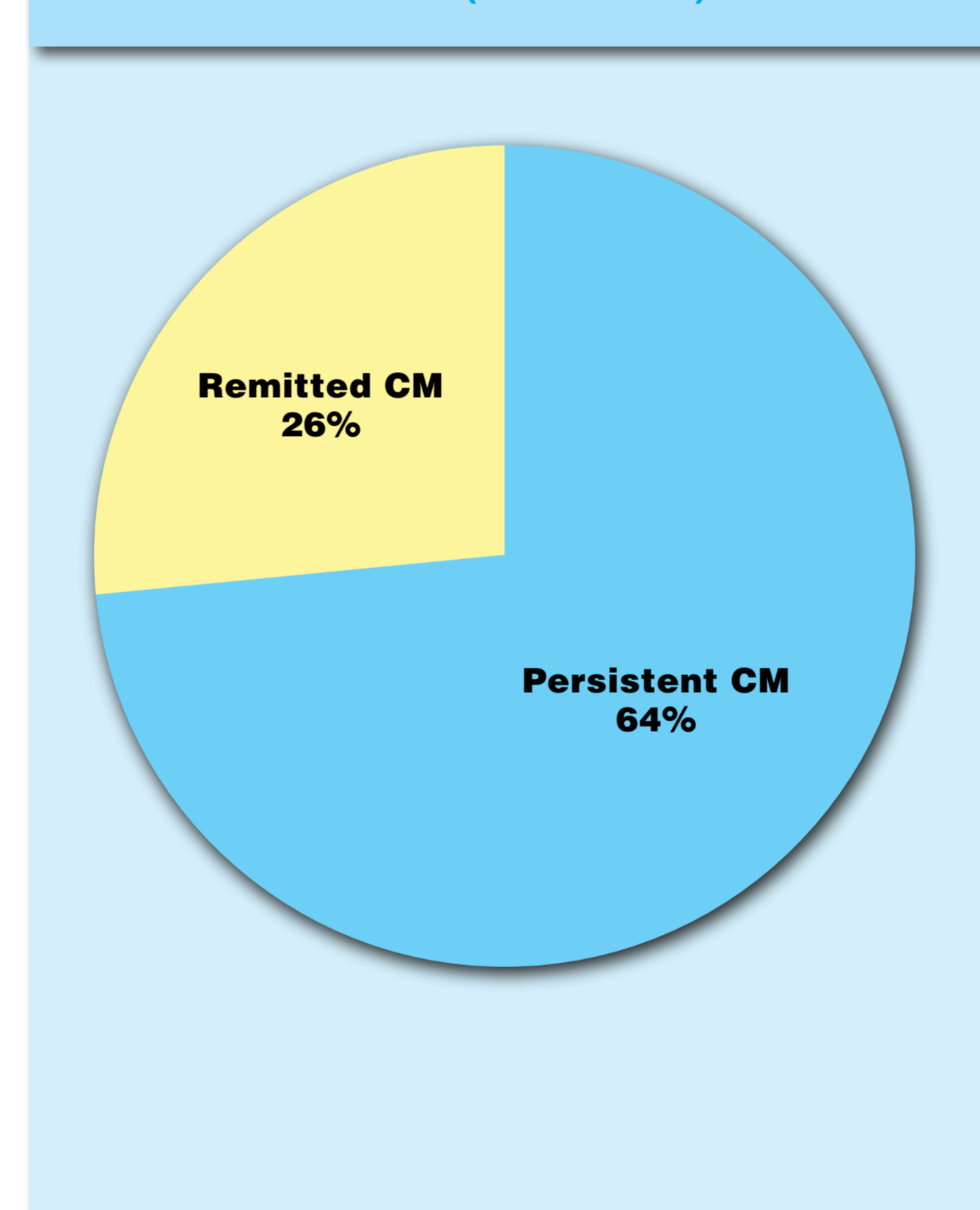
TABLE 1 EXPLORATORY ANALYSIS OF POTENTIAL PREDICTORS FOR CM REMISSION

Predictor Variable	OR (95% CI; p value)*
BMI	1.00(0.97,1.03,P=0.951)
Age of onset of headaches	1.00(0.97,1.02,P=0.692)
Headache frequency (1)[a]	0.53(0.22,1.28,P=0.158)
Headache frequency (2)[b]	0.21(0.09,0.51,P=0.001)
Allodynia (Dichotomous)	0.48(0.25,0.94,P=0.032)
Depression (PHQ-9)	0.99(0.94,1.04,P=0.746)
Current preventive medication use	0.48(0.28,0.84,P=0.010)
None vs mild	0.88(0.26,3.00,P=0.843)
None vs moderate	1.13(0.36,3.50,P=0.833)
None vs severe	0.56(0.21,1.49,P=0.246)
None vs most severe	0.98(0.45,2.13,P=0.954)
MIDAS categories	
Acetaminophen use	1.09 (0.62, 1.91, p≤0.777)
NSAID use	0.94(0.53,1.66,P=0.834)
Triptan use	0.98(0.48,2.00,P=0.960)
Ergotamine use	0.48(0.02,10.35,P=0.638)
Barbituate use	0.83(0.37,1.89,P=0.662)
Opiate use	1.22(0.57,2.60,P=0.604)

*All effects control for age, gender, race, population density, geographic region and income
[a] Headache frequency (1) indicates the comparison between those CM sufferers with 15-19 headache days/month and those with 20-24 headache days/month.
[b] Headache frequency (2) indicates the comparison between those CM sufferers with 15-19 headache days/month and those with 25-31 headache days/month.

Exploratory analysis suggested that depression, MIDAS, BMI, age of onset, and medication utilization by class did not significantly predict remission.

CONCLUSIONS

This longitudinal study shows that in a population sample of CM and after 2 years of follow-up:
- Approximately 26% remitted;
- In those who do not remit, headache frequency varied from one year to the next, with subjects moving below the boundary of 15 headache days per month;
- Remission rates were lower in those with high headache day frequency (>20 headache days/ month), allodynia and current use of preventive medication.

These results do not assess the duration of the remission beyond the 2 years of follow-up. Additionally, study data reflects the disease course for those with CM who may be on treatment; thereby, the disease course for those not treated may reflect substantial different patterns of remission.

DISCLOSURE

CONFERENCE

62nd Annual Meeting of the American Academy of Neurology (AAN) in Toronto, Ontario, Canada, April 2010.