Underdiagnosis and impact of menstrual migraine in real-world clinical practice

EPO-531

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INTRODUCTION

- Menstrual migraine (MM) occurs in 2 out of 3 female migraine patients [1].
- Patients with MM experience more frequent and severe attacks than patients without MM [2].
- MM is under-reported, and diagnoses of MM are often unreliable due to the lack of a validated monitoring tool, leading to reduced awareness of the condition.
- This cross-sectional study aimed to assess how often MM is reported in clinical practice, and the impact of MM on patients.

METHODS

- **Data Source** – Data were drawn from the 2022/23 Adelphi Migraine Disease Specific Programme™, a real-world cross-sectional survey with retrospective data collection, conducted in France, Germany, Italy, Spain, the United Kingdom, and the United States. Physicians completed patient record forms for their next 8 –10 consecutively consulting patients with migraine, who were invited to voluntarily complete a self-reported questionnaire.
- **Study design** – Participants were recruited into the Migraine DSP between May 2022 and January 2024. The survey was conducted according to relevant guidelines and legislation, and the methodology has been published and validated [3-6].
- **Outcomes**
  - **Physician Reported** – Data were collected on patient demographics, migraine diagnosis, migraine attack severity, prescribed acute and preventive treatment, as well as acute and preventive treatment satisfaction.
  - **Patient Reported** – Data were collected on patient-reported satisfaction with acute and preventive treatment.
- **Analysis** – All analyses were descriptive. This analysis utilized data from patients who were female, aged ≤55 years old and had a physician confirmed diagnosis of migraine.

RESULTS

Patient demographics and clinical characteristics

- There were 264 primary care practitioners (PCP) and 340 neurologists who provided data on 3,049 female patients aged ≤55 years, with 32% (n=986) having a physician confirmed diagnosis of MM.
- Of the 3,049 female patients, 30% (n=912) provided a corresponding voluntary self-completion questionnaire.
- During a survey of physician's workload and attitudes, physicians estimated that 38% of their female patients with migraine had a diagnosis of MM.
- Patients with a physician-confirmed MM diagnosis had a mean (standard deviation [SD]) age of 32.9 (SD 9.0), with 59% working full time and 21% enrolled as students (**Table 1**).

Table 1. Patient demographics and clinical characteristics

	Patients with MM	Patients without MM
Patient age, n	**986**	**2,063**
Mean (SD)	32.9 (9.0)	36.5 (10.1)
BMI (≤60), n	**985**	**2,059**
Mean (SD)	23.5 (3.9)	24.4 (4.6)
Employment status, n (%)	**969**	**1,982**
Working full time	570 (59)	1183 (60)
Working part time	91 (9)	240 (12)
On long term sick leave	8 (1)	25 (1)
Homemaker	67 (7)	217 (11)
Student	201 (21)	194 (10)
Not working due to retirement	1 (0)	12 (1)
Unemployed	31 (3)	111 (6)

Abbreviations: MM, menstrual migraine; SD, standard deviation; BMI, body mass index
Note- base sizes vary due to availability of data in patient medical records. BMI scores >60 were excluded.

Table 2. Physician/patient-reported migraine attack severity

	Patients with MM		Patients without MM	
	Managed by PCP	Managed by neurologist	Managed by PCP	Managed by neurologist
Patient reported, n (%)	**179**	**138**	**285**	**261**
Very mild	10 (6)	5 (4)	29 (10)	22 (8)
Mild	61 (34)	49 (36)	105 (37)	82 (31)
Moderate	74 (41)	56 (41)	103 (36)	111 (43)
Severe	32 (18)	23 (17)	44 (15)	38 (15)
Very Severe	2 (1)	5 (4)	4 (1)	8 (3)
Physician reported, n (%)	**179**	**138**	**285**	**261**
Very mild	11 (6)	3 (2)	38 (13)	39 (15)
Mild	63 (35)	52 (38)	124 (44)	99 (38)
Moderate	96 (54)	67 (49)	103 (36)	98 (38)
Severe	9 (5)	15 (11)	20 (7)	23 (9)
Very Severe	0 (0)	1 (1)	0 (0)	2 (1)

Abbreviations: PCP, primary care practitioner; MM, menstrual migraine;
Note – data reported on patient/physician pairs, where patients had fully completed the patient-reported questionnaire and full physician-reported data were concurrently available.

Patient and physician reported overall migraine attack severity

- PCPs and neurologists reported that most patients with MM experienced mild-moderate migraine attack severity, and only 5% and 12% of patients with MM respectively, experienced severe-very severe attacks (**Table 2**).
- However, 19% of patients with MM managed by a PCP and 21% managed by a neurologist reported experiencing severe-very severe attacks (**Table 2**).
- Of non-MM patients, 16% managed by a PCP and 18% managed by a neurologist also reported severe-very severe attack severity (**Table 2**).

Table 3. Physician-reported current prescribed acute and preventive migraine treatment

	Patients with MM	Patients without MM
Current acute migraine treatment, n (%)	**986**	**2,063**
Triptans inc. combs	632 (64)	1,254 (61)
NSAIDs inc. combs	287 (29)	528 (26)
Non-Opioid Analgesics inc. combs	62 (6)	158 (8)
Opioid Analgesics inc. combs	50 (5)	85 (4)
Anti-CGRP gepant	36 (4)	109 (5)
No acute drug treatment	110 (11)	303 (15)
Current preventive migraine treatment, n (%)	**986**	**2,063**
Anticonvulsants	128 (13)	261 (13)
Beta-blockers	106 (11)	324 (16)
Anti-CGRP mAb	82 (8)	230 (11)
Antidepressants/Anxiolytics/ Benzodiazepines	77 (8)	205 (10)
Neurotoxins	34 (3)	100 (5)
No preventive drug treatment	516 (52)	861 (42)

Abbreviations: MM, menstrual migraine; inc. combs, including combinations; NSAID, non-steroidal anti-inflammatory drug; CGRP, calcitonin gene-related peptide; mAb, monoclonal antibodies
Note – Treatment classes are not mutually exclusive.

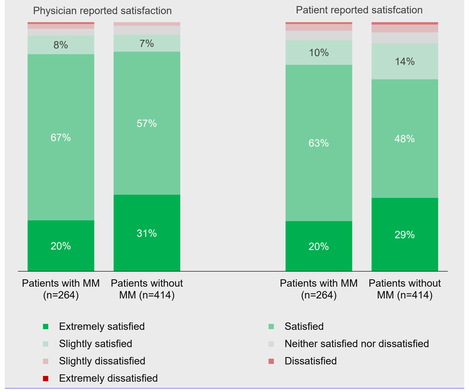
Patient and physician reported prescribed treatment

- Current prescribed acute and preventive migraine treatments for patients with and without MM are summarised in **Table 3**.
- For acute migraine treatment, 11% of patients with MM and 15% of patients without MM were not receiving current acute treatment (**Table 3**).
- Regarding preventive migraine treatment, 52% of patients with MM, and 42% of patients without MM, were not receiving current preventive treatment (**Table 3**).

Patient and physician reported treatment outcomes

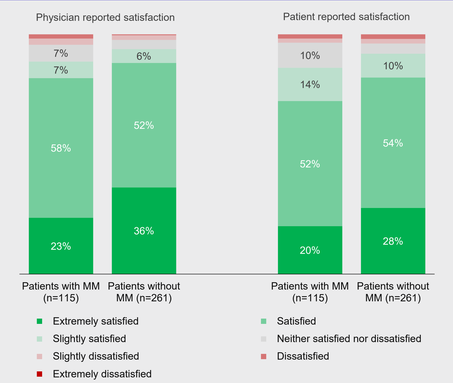
- Physicians reported to be extremely satisfied with current acute treatment for 20% of their patients with MM and 31% of their patients without MM (**Figure 1**). 20% of patients with MM and 29% of patients without MM were extremely satisfied with their acute treatment (**Figure 1**).
- Physicians reported to be extremely satisfied with current preventive treatment for 23% of their patients with MM and 36% of their patients without MM (**Figure 2**). 20% of patients with MM and 28% of patients without MM were extremely satisfied with their preventive treatment (**Figure 2**).

Figure 1. Physician and patient-reported satisfaction with prescribed acute treatment



Abbreviations: MM, menstrual migraine
Note – data reported on patient/physician pairs, where patients had fully completed the patient-reported questionnaire and full physician-reported data were concurrently available. Percentages <4% not shown.

Figure 2. Physician and patient-reported satisfaction with prescribed preventive treatment



Abbreviations: MM, menstrual migraine
Note – data reported on patient/physician pairs, where patients had fully completed the patient-reported questionnaire and full physician-reported data were concurrently available. Percentages <4% not shown.

Limitations

- MM was estimated by physicians and patients but not objectively assessed by a validated headache diary.
- The study design required physicians to recruit consecutive patients and complete the physician survey on the day of the visit to mitigate against selection and recall bias. However, some selection bias remains as more frequently consulting patients and those with more severe disease activity were more likely to be captured.
- Disease severity data relates to overall migraine severity, and not specifically within the perimenstrual window.

CONCLUSIONS

- Compared to self-reports from patients, physicians tend to underestimate the proportion of menstrual migraine patients with severe/very severe attacks.
- Developing physician awareness, recognition, and understanding of MM and its implications, is essential to ensure optimal treatment for females that are affected by MM, while also working towards alleviating additional disease burdens.

REFERENCES

1: Burch *et al*. Headache: The Journal of Head and Face Pain. 2015;55(1):21-34. 2: Verhagen et al. Headache. 2023;63(3):333-41. 3: Anderson *et al*. Curr Med Res Opin. 2008;24(11):3063-3072. 4: Babineaux *et al*. BMJ Open. 2016;6(8):e010352. 5: Higgins *et al*. Diabetes Metab Syndr Obes. 2016;9:371-380. 6: Anderson P *et al*. Curr Med Res Opin. 2023;39(12):1707-1715

CONFLICTS OF INTEREST

JA: Consulting (Honoraria): AbbVie, Aeon (2023), Dr. Reddy, Eli-Lilly, GlaxoSmithKline (2023), Lundbeck, Linpharma, Ipsen (2024), Merz, Miravio (2023), Pfizer, Neurolief, Gore, Satsuma (2024), Scilex, Theranica, Tonix. Clinical Trials (Grant to institution): Parema, Ipsen. Editorial Boards/Steering Committee: Current Pain and Headache Reports (2022), Medscape, SELF magazine (medical editor) GT: consultancy or industry support from AbbVie, Lilly, Lundbeck, Novartis, Pfizer, Teva, and Interactive Studios BV, and independent support from the European Community, Dutch Heart and Brain Foundations, Dutch Research Council, Dioraphte, and the Clayco Foundation. BG, JC, AJ, LA, JB, KHB: employed by and holds stock/options in Pfizer. JJ, WW, LH: employees of Adelphi Real World, Bollington UK.

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