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Migraine diagnosis and treatment in Poland: survey of primary care practitioners

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ABSTRACT

Aim of the study. This study aimed to analyze the daily clinical practice of primary care practitioners (PCPs) in Poland concerning migraine patients.

Clinical rationale for the study. Migraine is a common chronic primary headache disease, which can be disabling if insufficiently managed. Numerous studies suggest that migraine remains underdiagnosed and undertreated. The first consultation of migraine patients is usually undertaken by a PCP.

Materials and methods. This study was conducted in June and July 2019 in Poland using a computer-assisted web interview with 51 PCPs. The interview questions concerned knowledge of diagnostic criteria and methods of migraine treatment.

Results. On average, each PCP consulted 12 patients with migraine per month. More than half of PCPs (63%) listed partial diagnostic criteria for migraine without aura or mentioned aura in their responses. Only 10% of PCPs listed all diagnostic criteria for migraine without aura. Although 55% of PCPs said that they distinguished between episodic and chronic migraine, 18% provided the wrong definition. The most commonly prescribed drugs were triptans (66%), paracetamol, metamizole, or non-steroidal anti-inflammatory drugs (42%).

Conclusions and clinical implications. PCPs play a critical role in diagnosing, treating, and monitoring migraine; however, many of them have insufficient knowledge about its diagnosis and correct differentiation between chronic and episodic forms.

Key words: chronic migraine, episodic migraine, headache, primary care practitioner

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Introduction

Migraine is a widespread, chronic primary headache disease characterised by recurrent headaches with or without aura. It affects up to 18% of women and 6% of men [1]. Chronic migraine prevalence in the general population ranges from 1.4–2.2% [2]. In Poland, chronic migraine accounts for 49% of chronic daily headaches [3]. Migraine is associated with considerable functional impairment, with both physical and emotional consequences that can impact upon occupational and family life [4, 5].

Despite the burden of disease, and the increasing availability of effective treatment, the management of migraine

remains less than satisfactory. People with migraine are underdiagnosed and undertreated. This is observed not only in developing countries, but also in Europe and North America [6–8]. According to an online survey among Polish adults in January 2019, 25% of respondents reported some migraine symptoms in the last 12 months, yet only 37% of them had been diagnosed with migraine by a physician in the past [9].

Headaches account for 4.4% of primary care practitioner (PCP) visits [10]. Most migraine patients consult their PCPs. Although PCPs play a critical role in the diagnosis, treatment initiation, and monitoring of migraine [11, 12], insufficient knowledge of diagnostic criteria often leads to misdiagnosis [13, 14]. Thus, it is important to evaluate PCP knowledge and

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educate PCPs as to the proper diagnosis and effective treatment of migraine patients.

Clinical rationale for the study

Migraine is a frequent reason for PCP visits. Usually, a PCP is the first healthcare professional diagnosing migraine or referring to a specialist. As migraine is poorly recognized in many countries, it is important to improve knowledge of migraine diagnosis among PCPs. This study aimed to analyze the daily clinical practice of PCPs in Poland concerning migraine patients.

Materials and methods

In June and July 2019, we conducted a computer-assisted web interview with general practitioners (GPs) in Poland who had agreed to participate in the study during a phone call. The physicians were selected from the Health Data Management database [15]. Physician sampling was based on 24 strata (16 voivodeship regions of Poland and two types of locations based on the physician's place of work — voivodeship capital cities and other locations), taking into account the structure of GPs in the mentioned database. The inclusion criteria confirmed during the phone call were: a PCP (e.g. internal medicine doctor, family doctor, general practitioner) who sees at least six patients with migraine per month.

All PCPs filled out a questionnaire (spontaneous answers, open-ended questions) concerning the number and characteristics of migraine patients under constant care, their knowledge of diagnostic criteria for migraine, and the type of treatment for migraine patients.

Statistical analysis

The results of the study were analyzed based on descriptive statistics. Most data were presented as nominal variables using percentage distributions, while continuous variables were presented as an arithmetic mean and median as measures of central tendency. Calculations were performed using IBM SPSS Statistics Version 24.

Results

The study involved 51 PCPs, with a mean age of 46.1 and an average working experience of 20.1 years. Nearly all PCPs (98%) attended to patients in a public outpatient clinic. On average, each PCP consulted 12 patients with migraine per month (median 10 patients/month). The PCPs included in the study declared experience in treating migraine patients, which was defined in the study design as treatment of at least six patients per month. Almost half of the PCPs (45%) admitted 6–9 patients each month (Fig. 1). On average, PCPs had 39 patients with migraine under continuous care (median 30 patients); however, 37% looked after 11–20 patients (Fig. 1).

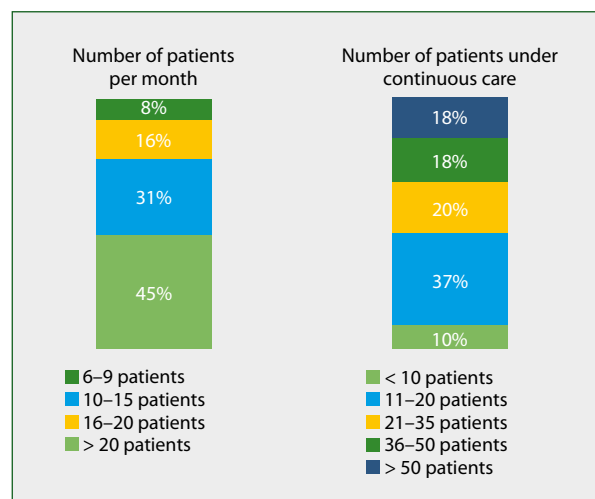


Figure 1. Number of migraine patients seen monthly and under constant care of PCPs

Respondents declared that in 19% of patients, they performed a diagnosis and initiated treatment. PCPs suspected migraine and referred patients to a neurologist for further diagnosis and treatment in 37.9% of cases; in 30.8% they ordered temporary treatment, and in 7.1% no treatment was administered. In 32.7% of patients, PCPs continued treatment prescribed by a neurologist. It is estimated that 56.4% of patients with migraine attending PCPs were previously undiagnosed. The detailed answers are set out in Figure 2. Our study suggests that 32.8% of new patients were diagnosed and treated by PCPs only.

Migraine diagnosis

PCPs were asked to list the criteria or signs and symptoms they used to diagnose migraine (the categories of answers are shown in Figure 3). More than half of PCPs (63%) listed partial diagnostic criteria for migraine without aura or mentioned aura in their responses; only 10% listed all diagnostic criteria for migraine without aura. Very few (2%) diagnosed migraine if the pain was related to menstruation or was accompanied by nausea and vomiting.

Figure 3 presents the understanding of migraine diagnostic criteria among primary care practitioners.

Those PCPs who declared that they distinguished between episodic and chronic migraine ($n = 28$; 55%) were asked about the definition of those two types of the disease. Most of them (79%) differentiated between chronic and episodic migraine: 18% knew the full, correct definitions, 60% described partial definitions, 18% gave the wrong definition, and 4% gave a general answer without detailed criteria. Figure 4 presents more categories of answers.

When distinguishing the type of migraine, most PCPs asked patients about the number of days per month with headache (94%) and with migraine headache (90%).

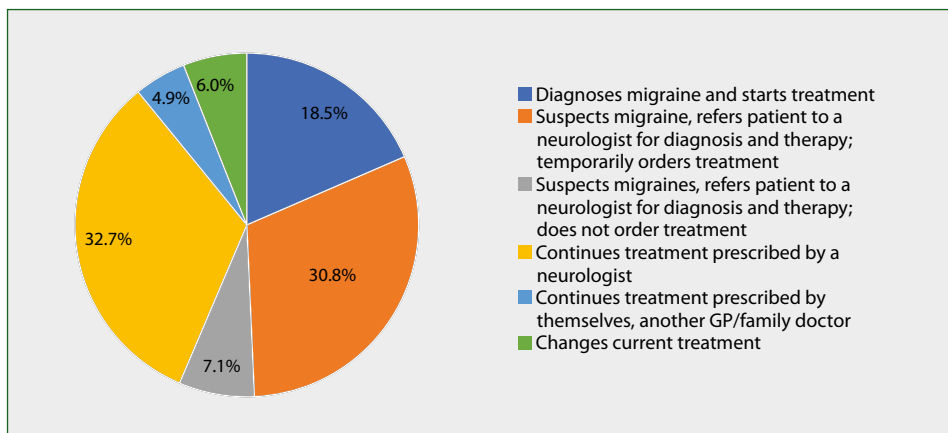


Figure 2. Role of primary care practitioners in migraine diagnosis and treatment. Diagram shows percentage of patients under each intervention

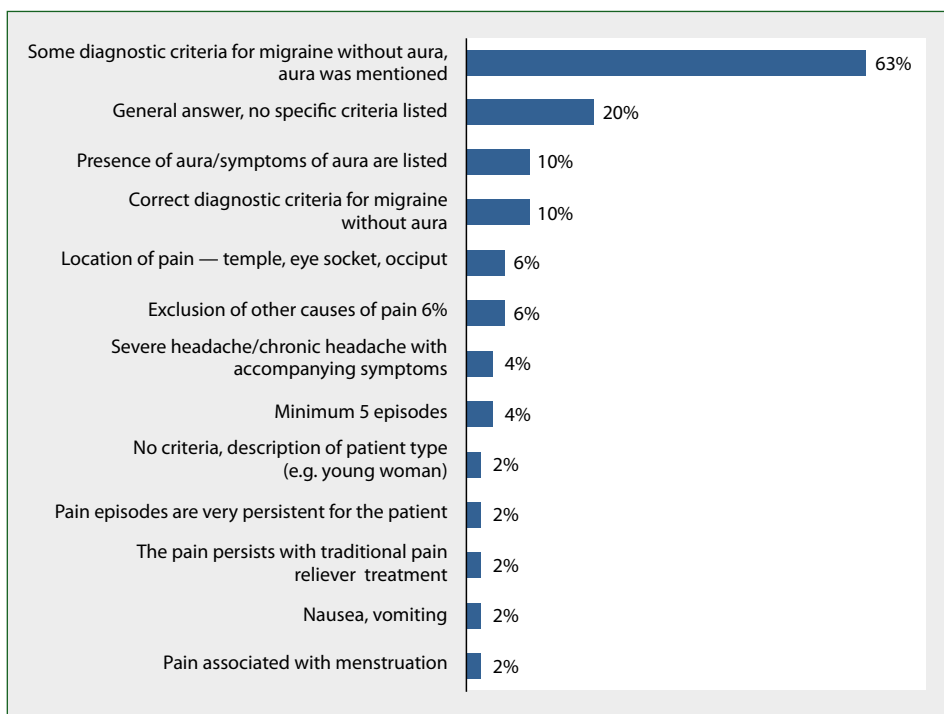


Figure 3. Knowledge of diagnostic criteria among primary care practitioners

Management of migraine patients

Among patients whose PCPs suspected migraine, 61% visited a physician during a headache episode (39% presented without headache). More than half of the patients (59%) had been self-treating for a long time before visiting a PCP, and 39% had recently started self-treatment. The results of patients whose PCPs diagnosed migraine mirrored those of patients with suspected migraine, i.e. 62% visited a physician during a headache episode (37% presented without headache), and 55% had been self-treating for a long time before visiting a PCP (44% started self-treatment recently).

Over half (59%) of the patients were consulted by a neurologist every 11 months (on average), 29% remained only under the care of a PCP, and 12% were consulted by other specialists, e.g. a laryngologist, ophthalmologist, or psychiatrist.

On average, 32% of patients (four patients/month) required sick leave from work or school (mean duration three days). Additionally, 15% of patients (two patients/month) asked for a medical certificate for migraine diagnosis and treatment confirmation.

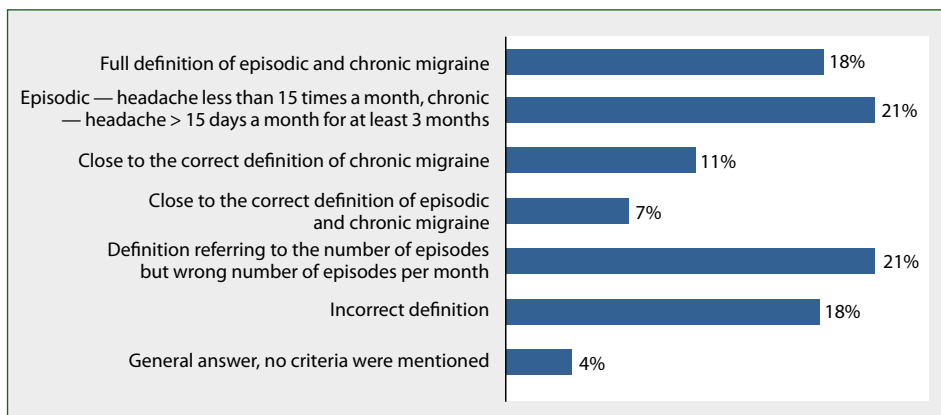


Figure 4. Knowledge of diagnostic criteria for episodic and chronic migraine among primary care practitioners

Migraine treatment

All 28 PCPs who declared ability to distinguish between episodic and chronic migraine reported starting treatment of episodic migraine in their clinical practice. The most commonly prescribed drugs were triptans (66%) and paracetamol, metamizole, or non-steroidal anti-inflammatory drugs (NSAIDs) (42%). Only 46% ($n = 13$) of PCPs who declared ability to distinguish between episodic and chronic migraine reported starting treatment for the chronic form, most frequently with triptans (81%) and paracetamol, metamizole, or NSAIDs (34%). Detailed results are included in Table 1.

Most PCPs (68%) used only acute medications for episodic migraine patients. In treating patients with chronic migraine, most PCPs (72%) used both acute and preventative treatments. In the PCPs' opinion, treatment was effective in 63% of migraine cases.

When asked about migraine prophylaxis, 35% of PCPs pointed to lifestyle factors such as avoiding triggers, proper hydration, exercise, and relaxation. Fourteen PCPs (27%) reported preventative treatment to reduce the frequency and intensity of migraine attacks. Other answers included long-term medications to prevent headache episodes (25%) or permanent medications (12%).

PCPs most commonly mentioned the possibility of using β -blockers (75%), calcium channel blockers (55%), antiepileptic drugs (53%), and antidepressants (51%) in migraine prevention. However, only 18% of PCPs were aware that antibodies targeting the calcitonin-gene related peptide (CGRP) pathway were available in Poland for migraine prevention.

Discussion

Headaches are one of the most common reasons for consulting PCPs, who are the first line doctors for diagnosing and starting treatment for migraine or providing a referral to a specialist. Indeed, according to a large populational study conducted in the United Kingdom, 6.4/100 patients/year in women and 2.5/100 patients/year in men consulted PCPs due to headache. In this study, each PCP had an average of 12 patients (median 10) with migraine per month and average of 39 patients (median 30) under constant care. Moreover, in the International Burden of Migraine Study conducted in the United States (US) and Canada, 13.9% of US patients and 12.3% of Canadian ones with episodic migraine (and 26.2% of US patients and 48.2% Canadian ones with chronic form) had visited a PCP at least once in the last three months [16].

Table 1. Drugs prescribed by primary care practitioners as initial migraine treatment

Drug type	Chronic migraine	Episodic migraine
Triptans	81%	66%
Non-steroidal anti-inflammatory drugs (including acetylsalicylic acid), paracetamol, and metamizole	34%	42%
β -blockers	11%	4%
Anti-epileptic drugs	2%	6%
Tricyclic antidepressants	6%	5%
Calcium channel blockers	4%	1%
Angiotensin II receptor antagonists	0%	0.4%
Other	0%	1%

These findings confirm that PCPs consult a large number of migraine patients seeking a diagnosis and effective treatment.

About 1% of the adult population in Poland is estimated to be affected by chronic migraine; however, only 48% of migraine patients had had migraine diagnosed within the last five years [9]. Misdiagnosis is a significant reason for migraine underestimation. In a telephone survey conducted among UK and US patients fulfilling the criteria of migraine diagnosis, only 67% of the UK and 56% of the US respondents had received a migraine diagnosis [17]. Those findings may be related to insufficient knowledge of the diagnostic criteria for migraine among physicians. Indeed, in our study, only 10% of PCPs listed all diagnostic criteria for migraine without aura as used in their practice, and more than half (63%) of them listed partial criteria. Moreover, the ability to distinguish between chronic and episodic migraine was declared by 55% of respondents, but only 18% provided the correct definitions. Notably, 18% provided an incorrect definition of chronic and episodic types of the disease. Similarly, in a previous study [8] on migraine treatment in Poland among neurologists, only one (2%) knew the exact definition for migraine with and without aura, and only five (10%) could provide the diagnostic criteria for migraine without aura. Likewise, in Turkey, only 10.5% of PCPs knew the diagnostic criteria for migraine without aura [18]. Furthermore, some general practitioners tend to underuse the specific recommendations for migraine diagnosis and may diagnose patients intuitively without any criteria, as described in an interview narrative study [19]. Thus, improving understanding of diagnostic criteria is essential for accurate diagnosis and treatment of patients with migraine.

Chronic migraine was added as a separate category to the third version of the International Classification of Headache Disorders (ICHD-III) in 2013 [20]. It is estimated that episodic migraine progresses into chronic migraine in 2.5% cases/year [21]. Differentiation of the migraine type is pivotal because chronic migraine is associated with a greater personal and economic burden than episodic migraine. Also, the identification of patients with chronic migraine allows the initiation of preventative treatment [22, 23].

Well-educated staff could explain the disease mechanisms to patients, which may encourage them to implement lifestyle changes. For example, Aguirrezbal et al. reported that 68.9% of patients who received a neuroscience-based educational intervention achieved more than a 50% decrease in disability level (as measured by the Migraine Assessment Disability Test [MIDAS] score) compared to 34.6% of patients in the control group [24]. Similarly, the duration and intensity of headache were significantly lower in the intervention group. Therefore, education by PCPs could improve the quality of life of migraine patients by reducing the number of days with headache and the medication intake.

In our study, in 66% of episodic migraine cases and 81% of chronic migraine ones, PCPs prescribed triptans. The second most common group of drugs used in both episodic and chronic migraine were NSAIDs and paracetamol.

Triptans are considered the most effective drugs for the treatment of acute migraine episodes. If insufficient, they can be combined with NSAIDs [25]. In the US, triptans account for over 80% of prescriptions for migraine patients [26]. However, the amount and frequency of acute medications must be monitored, as at least 50% of chronic migraine patients overuse analgesics. It is recommended that patients should use analgesics for no more than 15 days per month (and for less than 10 days for triptans or ergots, opioids and complex analgesics) to avoid medication overuse headache [27].

Migraine preventative therapy is intended to reduce the duration and frequency of migraine episodes and days with headache. This approach may enhance the response to acute treatment and reduce disability. Recommended pharmacotherapy for the prevention of episodic migraine includes antiepileptic drugs and β -blockers (level of recommendation: 1A) [28, 29]. In our study, most PCPs possessed knowledge about using β -blockers (75%), calcium channel blockers (55%), antiepileptic drugs (53%), and antidepressants (51%) in preventative therapy of either chronic or episodic migraine. However, for the preventative treatment of chronic migraine, only topiramate and valproate (antiepileptics), amitriptyline (antidepressant), and botulinum toxin are recommended (level of recommendation: A or B) [28]. The use of monoclonal antibodies (mAbs) against CGRP or its receptor is a novel treatment strategy for patients with migraine [30]. Yet only 18% of PCPs were aware of the availability of treatment targeting the CGRP-pathway in Poland (i.e. erenumab — mAb against CGRP-R — during the study period). In comparison, in the previous study, 80% of neurologists had such knowledge [8].

Migraine carries a large economic burden due to both the disease itself and absenteeism. In the presented study, 32% of migraine patients required sick leave from work or school for an average three days/month. According to the National Health Fund, in 2017, costs due to absenteeism of migraine patients were 31 million PLN [31]. Moreover, there are also significant costs related to presenteeism, ranging from 6 to 8.5 billion PLN per year [31]. Therefore, precise diagnosis and treatment may improve the quality of life of migraine patients, and that could indirectly reduce the significant costs related to this disease.

Study limitations

The major limitation of this study is the small sample size.

Clinical implications and conclusions

Most patients with migraine initially consult PCPs, and 32.8% of new migraine patients are diagnosed and treated only by PCPs. Therefore, the role of PCPs in migraine diagnosis and treatment initiation is crucial. Unfortunately, many PCPs in Poland have insufficient command of migraine diagnosis and the differentiation between episodic and chronic types of the disease. Therefore, PCPs need more tools and training to correctly diagnose migraine and institute effective, individualised

treatment according to standardised management guidelines. The impact of PCP training on clinical outcomes of patients with migraine needs to be further investigated.

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