Neurology Perspectives 5 (2025) 100190

NEUROLOGY PERSPECTIVES

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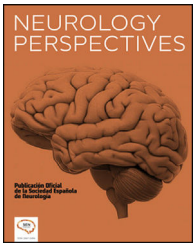

ORIGINAL ARTICLE

The pillars of migraine diagnosis and treatment: Information from primary care physicians in Colombia ☆

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Received 14 April 2024; accepted 7 December 2024
Available online 3 April 2025

KEYWORDS
Headache;
Education;
ICHD-3;
Opioids;
Preventive treatment

Abstract
Introduction: Migraine is a highly prevalent and disabling condition, with most patients treated at the primary care level. To the best of our knowledge, no information is available in Colombia regarding the knowledge of migraine among physicians at this level of care.
Objective: To determine the proportion of primary care physicians who observe the pillars of migraine diagnosis and treatment in their clinical practice: the International Classification of Headache Disorders (ICHD-3) diagnostic criteria, the indication to start preventive treatment, restriction of analgesic medication, and considering the presence of comorbidities.
Material and methods: We conducted a cross-sectional survey of actively practising primary care physicians from all over Colombia using an online semi-structured questionnaire, which was completed by general practitioners, paediatricians, gynaecologists, internists, and family medicine specialists.
Results: A total of 347 primary care physicians from all the regions of Colombia were surveyed; 23.2% used the ICHD-3 criteria, 49% and 85% were familiar with the Colombian guidelines for starting preventive treatment and limiting analgesic medication overuse, respectively; 61% never considered opioids for acute attacks; and 80% took comorbidities into account in their clinical approach. The compliance index for the main pillars of migraine care was 52%. We found no significant differences when specialty, length of time in practice, age, and area of work were compared.
Conclusion: This study suggests that there is limited knowledge about migraine among Colombian primary care physicians. These results are comparable with similar studies conducted around the world.

☆ This study was approved by the medical ethics committee of Unisanitas (083-22 UNV, 23 February 2022).

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https://doi.org/10.1016/j.neurop.2025.100190

PALABRAS CLAVE
Cefalea;
Educación;
ICHD 3;
Opioides;
Terapia preventiva

Pilares del diagnóstico y tratamiento de la migraña: Información de médicos de cuidado primario en Colombia

Resumen
Introducción y objetivos: La migraña es una condición prevalente e incapacitante, en la mayoría de los casos atendida en el cuidado primario. De acuerdo a nuestros conocimientos, en Colombia no existe información con respecto al conocimiento de la migraña en este nivel de atención.
Determinar la proporción de médicos de atención primaria (MCP) quienes tienen en cuenta los pilares del diagnóstico y tratamiento de la migraña: Uso de los criterios ICHD 3, adherencia a las recomendaciones para iniciar terapia preventiva, indicación de restricción de medicamentos analgésicos junto con consideración de comorbilidades en la práctica clínica de la migraña.
Materiales y métodos: Estudio de cohorte transversal. Mediante un cuestionario semiestructurado en línea se entrevistó a MCP laboralmente activos de todo el territorio colombiano, incluyendo médicos generales, pediatras, ginecólogos, internistas y especialistas en medicina familiar.
Resultados: Se entrevistaron 347 MCP de todas las regiones de Colombia. El 23,2% utiliza criterios ICHD 3, el 49% y el 85% conocen las pautas de recomendaciones colombianas para iniciar terapia preventiva y limitar el uso excesivo de analgésicos respectivamente, el 61% nunca considera opioides para ataques agudos y el 80% tiene en cuenta las comorbilidades como parte del abordaje clínico. El cumplimiento del índice clínico en la muestra fue del 52%. No encontramos diferencias significativas al comparar especialidades, tiempo de ejercicio, edad y área de trabajo.
Conclusión: Este estudio sugiere un conocimiento limitado sobre la migraña en la atención primaria en Colombia, estos resultados son comparables con estudios similares alrededor del mundo.

Introduction

Migraine is the second most prevalent neurological disease and the most common neurological cause of disability worldwide.[1] As a result of this, in addition to the limited availability of neurologists, the great majority of patients with migraine are attended by physicians from other specialties, including primary care.[2,9] Therefore, there is a need to ensure minimum levels of knowledge about neurology, with particular emphasis on the most prevalent diseases, in this case, headache and migraine. According to data from the World Health Organisation, undergraduate medical degrees dedicate only 4 h to headache disorders[3]; this is consistent with the limited time committed to neurology training in Colombia. These facts may explain the high rate of consultation for headache disorders at emergency departments,[2] low patient satisfaction following acute treatment,[6] and the high direct and indirect economic costs associated with these disorders.[1]

In Colombia, no information is available on primary care physicians' level of knowledge about the diagnostic and therapeutic management of migraine. Therefore, this study sought to establish the extent to which primary care physicians observe the basic pillars of migraine care, proposed by the study group: *1)* diagnosis according to the International Classification of Headache Disorders (ICHD-3); *2)* consideration of comorbidities; *3)* appropriate indication of preventive treatment; and *4)* restriction of analgesic medications.

Material and methods

We conducted a cross-sectional survey of qualified primary care physicians (general practice, family medicine, gynaecology/obstetrics, paediatrics, and internal medicine) from across Colombia. Respondents participated voluntarily and completed electronic informed consent forms. Individuals practising or undertaking residency training in any subspecialty were excluded. Participants were recruited by non-probability sampling (snowball technique). Data were gathered using a structured questionnaire designed on the Google Forms platform. We collected data on socio-demographic (age, sex, marital status) and work-related variables (time practising since qualification, area of practice [emergency or outpatient departments]), as well as data on migraine management (use of ICHD-3 criteria, consideration of comorbidities, use of red flags, restriction of analgesic medications, use of opioids, use of diagnostic imaging studies, and recommendation to use headache diaries; all assessed using a Likert scale). A compliance index for the main pillars was calculated as follows: $\sum$ = ((%) pillar weight * (%) obtained for each pillar), with the weight of each pillar established according to expert opinion.

We also analysed a subsample of physicians with less than one years experience since qualification, with a view to determining the time dedicated to neurology and to headache disorders during undergraduate training. The study was approved by the institutional research committee of the neurology department at Clínica Universitaria Colombia.

Data were analysed with the SPSS statistics software, version 21 (IBM Corporation; Armonk, NY, USA). The Shapiro–Wilk test was used to test for normality of data distribution. We calculated frequencies and percentages for nominal (categorical) variables, and means and standard deviations for continuous variables. Associations between categorical variables related to migraine and progression were tested using the chi-square test, with the threshold for significance set at $P < .05$.

In the descriptive analysis, we calculated standard deviations for continuous variables (age, number of children) and percentages for categorical variables.

The probability of correct responses for each pillar is presented with a 95% confidence interval (CI). P values $\leq .05$ were considered statistically significant.

Results

A total of 347 individuals were interviewed; 41 were excluded, as they were practising or undertaking residency training in a subspecialty. Of the 306 respondents included in the analysis, the majority were aged between 20 and 40 years; a majority of participants were women and were located in the Andean region. Approximately, half of the sample were general practitioners (Table 1).

Main pillars. According to the mathematical model described above, we observed a compliance index of 52% for the 4 main pillars studied in the sample: 23.2% for the use of the ICHD-3 criteria; 80% for consideration of comorbidities; 85.0% for restriction of analgesic medications; and 49% for indication of preventive therapy in accordance with treatment guidelines (Fig. 1).

Complementary pillars. Regarding the duration of preventive treatment, 75.3% of respondents maintained this treatment for 3 months, 19.9% for 4–6 months, and 4.6% for longer than 6 months; 49.9% selected a preventive treatment according to efficacy, 43.6% according to safety and tolerability, and 9.5% due to other aspects.

The majority of respondents considered the use of red flags to be valuable in ruling out secondary headache, did not consider neuroimaging studies as part of routine diagnostic work-up for migraine, did not use headache diaries as part of patients' clinical follow-up, did not routinely use triptans for acute treatment, and did not consider opioids for the treatment of acute migraine (Table 2). The impact of migraine on quality of life was considered to be severe by 81.4% of respondents, moderate by 18.2%, and non-existent by 0.3%. We found no statistically significant differences in observance of the pillars according to age group, specialty, years of experience, or area of practice.

In the subsample of 92 respondents reporting information on their undergraduate training, 68.5% responded that they had received 2–4 h of training on headache, 20.2% had received 5 h or more, and 11.3% had received 2 h or less.

Table 1 Demographic characteristics.

Sex	n	%
Women	206	67.1
Age (years)		
20–30	177	57.7
31–40	71	23.1
41–50	37	12.1
51–60	17	5.5
>60	5	1.6
Geographic region		
Andean	280	91.2
Caribbean	18	5.9
Pacific	4	1.3
Orinoquía	4	1.3
Amazon	1	0.3
Insular	1	0.3
Area of practice		
Emergency/inpatients	119	38.8
Outpatient consultations	98	31.9
Home care/ambulance	43	14
Combination of the above	47	15.4
Time practising (years)		
0–5	182	59.3
6–10	47	15.3
11–15	27	8.8
16–20	13	4.2
>20	38	12.4
Type of primary care		
General practice	214	69.7
Family medicine	21	6.8
Gynaecology/obstetrics	26	8.5
Paediatrics	24	7.8
Internal medicine	22	7.2

Discussion

This is the first study into the level of understanding of the clinical management of migraine among primary care physicians in Colombia.

Regarding the pillar "use of diagnostic criteria," the analysis showed that approximately one in 5 respondents routinely used the ICHD-3 criteria. Studies following a similar methodology to our own report that although 80% of physicians could correctly identify intense, pulsatile pain associated with photo- and phonophobia as characteristics of migraine, when they were asked about the duration and number of episodes, specific elements cited in the ICHD-3,[7] this proportion decreased to 51.7%.[8] Similar results are reported in a study of 266 primary care physicians, which found that 15.4% and 17.3% of physicians knew the duration and the number of episodes required to meet diagnostic criteria.[4] Analysed together, data from these studies suggest that primary care physicians have limited knowledge of non-specific characteristics of migraine; this knowledge was probably acquired through routine contact with such a prevalent disorder.[1] Similarly, these results show difficulties identifying specific sections of the ICHD-3 diagnostic criteria, probably due to the low number of hours dedicated to headache disorders at universities, as reported by the

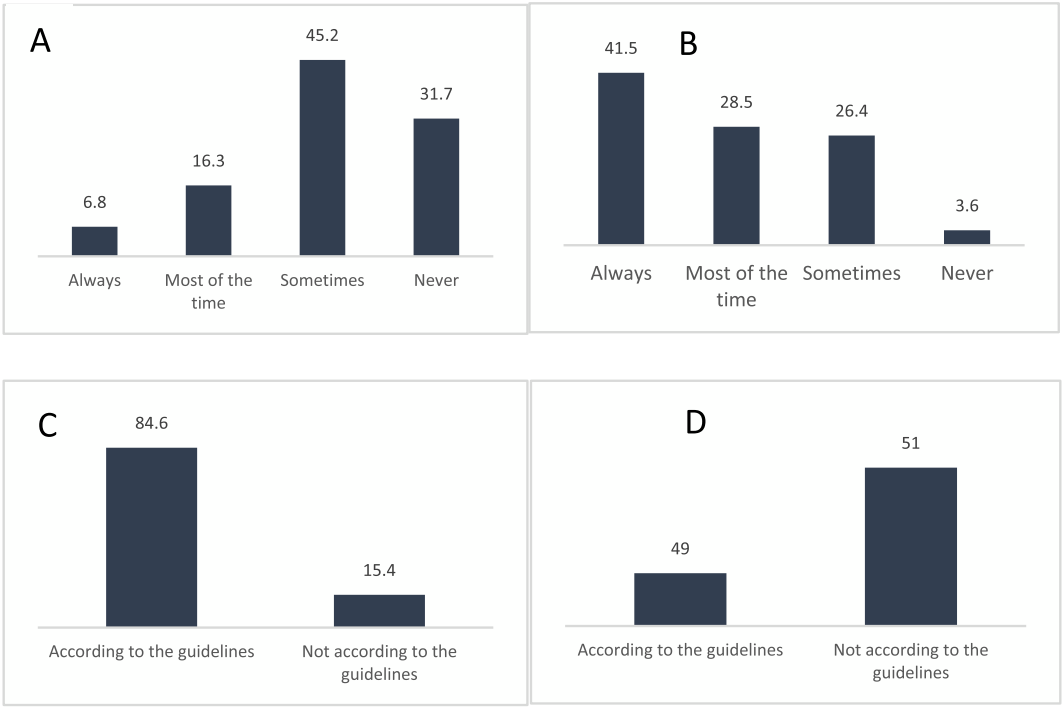

Figure 1 Observance of the main pillars of migraine diagnosis and treatment. A: use of ICHD-3 criteria; B: consideration of comorbidities; C: restriction of analgesic medications; D: indication of preventive medications. For use of the diagnostic criteria and restriction of analgesic medications, the compliance index value indicated in the model includes the total number of respondents answering "always" and "most of the time." Data are expressed as percentages.

World Health Organisation[1] and, in turn, by our study respondents.[3]

Regarding the pillars "restriction of analgesic medications" and "selection of a preventive treatment," our findings show that 8 and 5 out of every 10 respondents, respectively, adhere to the recommendations issued in treatment guidelines; these figures are higher than those reported in another study, in which only a quarter of respondents were aware of the therapeutic guidelines.[5] Taken together, these findings partially support the control of analgesic medication overuse in the general population, which probably remains prevalent due to the difficulty of accessing the healthcare system.[10,11]

Analysis of the pillar "consideration of comorbidities" showed that 80% of respondents considered mood disorders and 81% took into account disability in the clinical management of patients with migraine. These data are similar to those reported by Minen et al.,[5] who found that 50%–60% of respondents included depression and anxiety in patient assessments, and 77% included disability. On the other hand, a survey of 367 general practitioners in Norway did not analyse the role of mood disorders, with 33% of respondents routinely asking patients about disability and social functioning.[12]

A quarter of respondents indicated that they used neuroimaging always or most of the time in migraine work-up. This figure is higher than those reported in an article analysing requests for head CT and MRI studies, which found that these studies were ordered in 9.8% of migraine appointments.[13] These findings are probably due to a lack of knowledge of the ICHD-3 criteria, resulting in a limited clinical assessment that increases the likelihood of imaging studies being indicated, increasing the cost of migraine for public healthcare systems.[14]

The main strength of this study is the use of a compliance index to assess observance of the pillars of migraine management in a large sample of physicians.

The main weaknesses are the limited participation of primary care physicians from remote areas of the country and the predominance of recent graduates, which hinder the extrapolation of our results.

In conclusion, our results suggest that primary care physicians in Colombia have limited knowledge of concepts related to migraine diagnosis and prophylaxis; however, the majority do possess clinical knowledge related to the rational use of analgesic medications and comorbidities. Further research is needed to follow up these indicators, ideally after the implementation of migraine education campaigns in the primary care setting.

Table 2 Observance of complementary pillars of migraine diagnosis and treatment.

	Never	Rarely	Often	Always
Use of red flags	4.9	12.7	28	54.4
Use of neuroimaging	10.4	64.5	20.2	4.9
Use of headache diaries	29	32.9	25.1	13
Prescription of triptans	18.2	49.5	30	2.3
Prescription of opioids	61.2	33.6	4.6	0.6

Data expressed as percentages.

Declaration of originality

This study is an original work, has not previously been published, and is the result of the intellectual contribution of all authors. The figures, tables, and illustrations accompanying the work are a faithful representation of the facts reported and have not been digitally altered. All data and references to published texts and materials are duly identified and cited in the text and in the references section.

Informed consent

All survey respondents participated voluntarily and completed electronic informed consent forms.

Funding

This study has received no funding from any public, private, or non-profit organisation.

Conflicts of interest

The authors have no conflicts of interest to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.neurop.2025.100190.

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