

# Treatment patterns and healthcare resource utilization in Colombian migraine patients from 2018 to 2022.

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## BACKGROUND

- Migraine is a disabling primary headache disorder characterized by headaches and associated symptoms including aura, photophobia, phonophobia and nausea/vomiting, which can lead to considerable disruption of the professional and private lives of affected individuals<sup>1</sup>. Through the Global Burden of Disease (GBD) study 2019, migraine alone was second among the causes of disability, and first among women under 50 years of age<sup>2</sup>.
- The treatment of patients with migraine aims to relieve pain or limit the attack, reduce disability and restore function, improve health-related quality of life and manage comorbidities. Pharmacological therapy comprises both acute and preventive treatments<sup>3,6</sup>.
- Migraine treatment is individualized based on patient preference; plans to conceive; the frequency and severity of episodes; the presence, type, and severity of associated symptoms; episode-related disability; prior treatment response; the presence of comorbid and coexistent illness; contraindications (eg, cardiovascular disease); factors such as body habitus and physiological measures; and the use of concomitant medications<sup>7,8</sup>.

## OBJECTIVE

- To describe the treatment patterns and healthcare attention of patients with migraine between 2018 to 2022 in Colombia

## METHODS

- This study was a non-interventional, retrospective, descriptive study conducted in one Colombian Health Management Organization (HMO) from 2018 to 2022 with a follow-up period of 5 years.
- Migraine patients were identified using the 10th revision of the International Classification of Diseases, diagnosis code G43, and the confirmation of the diagnosis from a neurologist.
- The databases contain longitudinal information on insured individuals with respect to all areas of services administered by the HMO. The HMO includes detailed data on inpatient and outpatient care, diagnosis, demographic characterization and claim databases.
- The first record of migraine diagnosis was defined as the index date. Medical records, claim databases and other electronic databases from the HMO were used to determine the clinical characteristics, treatments, and healthcare services.
- Acute migraine therapy was defined as medication prescribed for migraine management during the migraine episode.
- Preventive migraine therapy was defined as preventive only if a diagnosis of migraine was identified within the same quarter in the in- or outpatient prescription or if the diagnosis of migraine was associated with the prescription.
- Migraine diagnoses and comorbidities, specialty of the health care professional who provided care, migraine treatments (medication records of type and number), and hospitalization data were collected throughout the study period.
- Discontinuation of medication was defined as the date of the first occurrence of either a switch to another medication for migraine or the end of prescription or if a follow-up prescription was not identified within 90 days of the estimated date of the next prescription of the same medication.
- The treatment frequency was calculated considering the number of patients who continued in each record during the study period.

## RESULTS

- We included 89,227 patients in the study. The mean of the follow-up period was 3.7 years (Standard Deviation [SD] 1.2). The majority of patients were first seen by a general practitioner (82.6%), and only 8.9% by a neurologist.
- Most patients were female (n = 75,726; 84.9%). The mean age of migraine onset was 38.1 (SD 16.0) in men and 36.8 (SD 13.7) in women, and 55.1% were between 25 and 44 years (Table 1).
- The annual mean of outpatient visits in 2018 was 1.43 consultations per patient, which decreased to 0.68 in 2022.
- The proportions of patients prescribed any acute or preventive medication were 92.4% and 71.8%, respectively, of the total patients with claim data (Table 2).

## RESULTS (cont)

- The most common treatment for acute event during the follow-up were non-steroidal anti-inflammatory drug (NSAID) (range 37%-42%) in monotherapy, combinations of analgesics (range 14%-35%), and corticosteroids (range 10% -15%). Triptans were used in 4% of patients in the first medication record, reaching a maximum of 16% of patients. Opioids were reported between 1% to 3% of the population during the study.
- In preventive treatment, beta-blockers (range 24%-49%) and antiepileptics (range 29%-41%) were the most common treatments. The frequency of use of calcitonin gene-related peptide antagonist was between 0% to 2% during the follow-up. The usage of onabotulinum toxin A was between 6% and 15%.
- Among acute medications, the most frequent were NSAIDs (naproxen, diclofenac, and ibuprofen) and corticosteroids. The most used preventive medications were beta-blockers (specifically, propranolol), antiepileptics (mainly topiramate and valproic acid) and antidepressants (specifically, amitriptyline) (Table 2).

Table 1. Characteristics of population with migraine from database 2018 to 2022

	Category	Total n=(89,227)	
		n	%
Sex	Female	75,726	84.9
	Male	13,501	15.1
Age, total	18-24	16,918	19.0
	25-34	30,086	33.7
	35-44	19,080	21.4
	45-54	12,173	13.6
	55-64	6,497	7.3
	65-74	2,786	3.1
	≥ 75 Years	1,687	1.9
Type of health insurance regime*	Contributive	81,859	91.7
	Subsidized	7,368	8.3
Geographic region of medical care	Andean/Central	69515	77.9
	Metropolitan	8011	9.0
	Caribbean	6526	7.3
	Pacific	5175	5.8
First diagnosis recorded by subtype (ICD-10 code)	G43.9 Migraine, unspecified	43,747	49.0
	G43.8 Other migraine	14,542	16.3
	G43.3 Complicated migraine (including chronic migraine)	10,666	12.0
	G43.0 Migraine without aura (common migraine)	10,166	11.4
	G43.1 Migraine with aura (classical migraine)	5,594	6.3

\*Type of affiliation to the General System of Social Security in Health (SGSSS in Spanish abbreviation) in Colombia: Contributive regime (it provides mandatory coverage to workers in the formal sector), and Subsidized regime (it covers the low-income population that does not have the capacity to contribute to health system).

Abbreviations: n, number of individuals; ICD-10, International Classification of Diseases, tenth revision

Table 2. Percentage of patients with at least one medication for study population with migraine record by preventive and acute medications

Class (N= 80,481)	Treatment indication	
	Acute	Preventive
NSAID n= 58,555 (72.8%)		
Naproxen	42,246 (72.1)	-
Diclofenac	38,080 (65.0)	-
Ibuprofen	13,637 (23.3)	-
Acetylsalicylic acid	1,040 (1.8)	-
Other	443 (1.05)	-

## RESULTS (cont)

Class (N= 80,481)	Treatment indication	
	Acute	Preventive
Corticosteroids n= 31,136 (38.7%)		
Dexamethasone	30,766 (98.8)	-
Prednisone	646 (2.1)	-
Triptans n=13,446 (16.7%)		
Sumatriptan	8,644 (64.3)	-
Naratriptan	6,691 (49.8)	-
Zolmitriptan	1,355 (10.1)	-
Eleptriptan	390 (2.9)	-
Opioids n=3,951 (4.9%)		
Tramadol	3,719 (94.1)	-
Dihydrocodeine/Hydrocodone	247 (6.3)	-
Oxycodone	2 (0.1)	-
Combination* n=52,553 (65.3%)		
Beta-blockers n=38,359 (47.7%)		
Propranolol	-	37,865 (98.7)
Metoprolol	-	748 (1.9)
Bisoprolol	-	2 (0.005)
Antiepileptic drugs n=22,554 (28.0%)		
Topiramate	-	11,973 (53.1)
Valproic acid	-	11,494 (51.0)
Divalproex sodium	-	2,082 (9.2)
Pregabalin	-	716 (3.2)
Gabapentin	-	432 (1.9)
Antidepressants n=10,596 (13.2%)		
Amitriptyline	-	9,754 (92.1)
Venlafaxine/Desvenlafaxine	-	920 (8.7)
Calcium antagonist n=6,762 (8.4%)		
Flunarizine	-	6,762 (8.4)
CGRP monoclonal antibodies n=131 (0.2%)		
Galcanezumab	-	110 (84.0)
Erenumab	-	29 (22.1)
Angiotensin II receptor antagonists n=65 (0.1%)		
Candesartan	-	65 (0.1)
Antipsychotics n=23 (0.03%)		
Olanzapine	-	23 (0.03)
Other n= 32,563 (40.5%)		
Metoclopramide	26,860 (82.5)	-
Onabotulinum toxin A	-	5,002 (15.4)-
Dimenhydrinate	3,019 (9.3)	-
Lisinopril	-	1 (0.003)
Domperidone	-	60 (0.2)
Paracetamol	2 (0.01)	-

\*Ergotamine combined with caffeine/lysine/clonixinate; Bisoprolol combination amlodipine/thiazides; NSAID with NSAID, muscle relaxants, paracetamol and/or combinations excl. Psycholeptics; Candesartan and/or amlodipine/diuretics; or Opioids and other non-opioid analgesics.

Abbreviations: NSAIDs (nonsteroidal anti-inflammatory drugs), CGRP (Calcitonin gene-related peptide)

- A total of 71.8% of the patients received any first-line preventive treatment, most of whom started treatment with propranolol (n=32,721), valproic acid (n= 6,828) or amitriptyline (n= 5,963).

## RESULTS (cont)

- The Kaplan-Meier analysis of patients who discontinued preventive treatment or switched tended to last 273 days (95% CI: 266–280). Those who started treatment with antipsychotics had the shortest median duration of 85 days (95% CI: 16-Not defined) (Figure 1).
- It was observed that 57.9% of patients received acute therapy, as first line 43.4% were treated with NSAIDs (n=32,257), and 0.3% were treated with corticosteroids (n=190).
- The Kaplan-Meier analysis until acute treatment switch indicated a fixed overall median duration of approximately 90 days (95% CI: 90-90), whereas the subgroup analysis indicated that triptans had the longest median duration of 267 days (95% CI: 252-283), and the other treatments had a median duration of 90 days (95% CI: 90-90) (Figure 2).

Figure 1. Probability of switching of first treatment to manage preventive migraine.

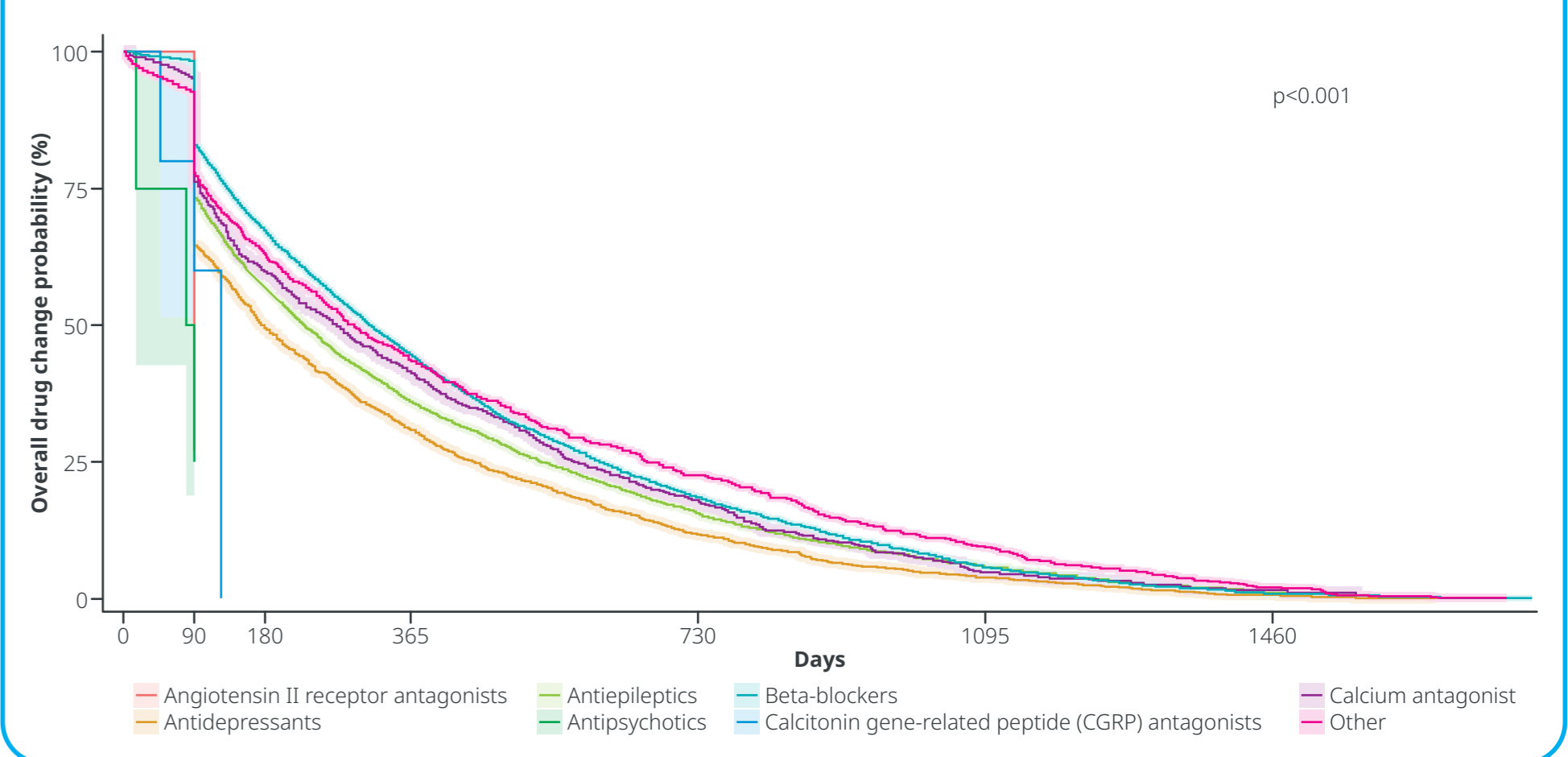
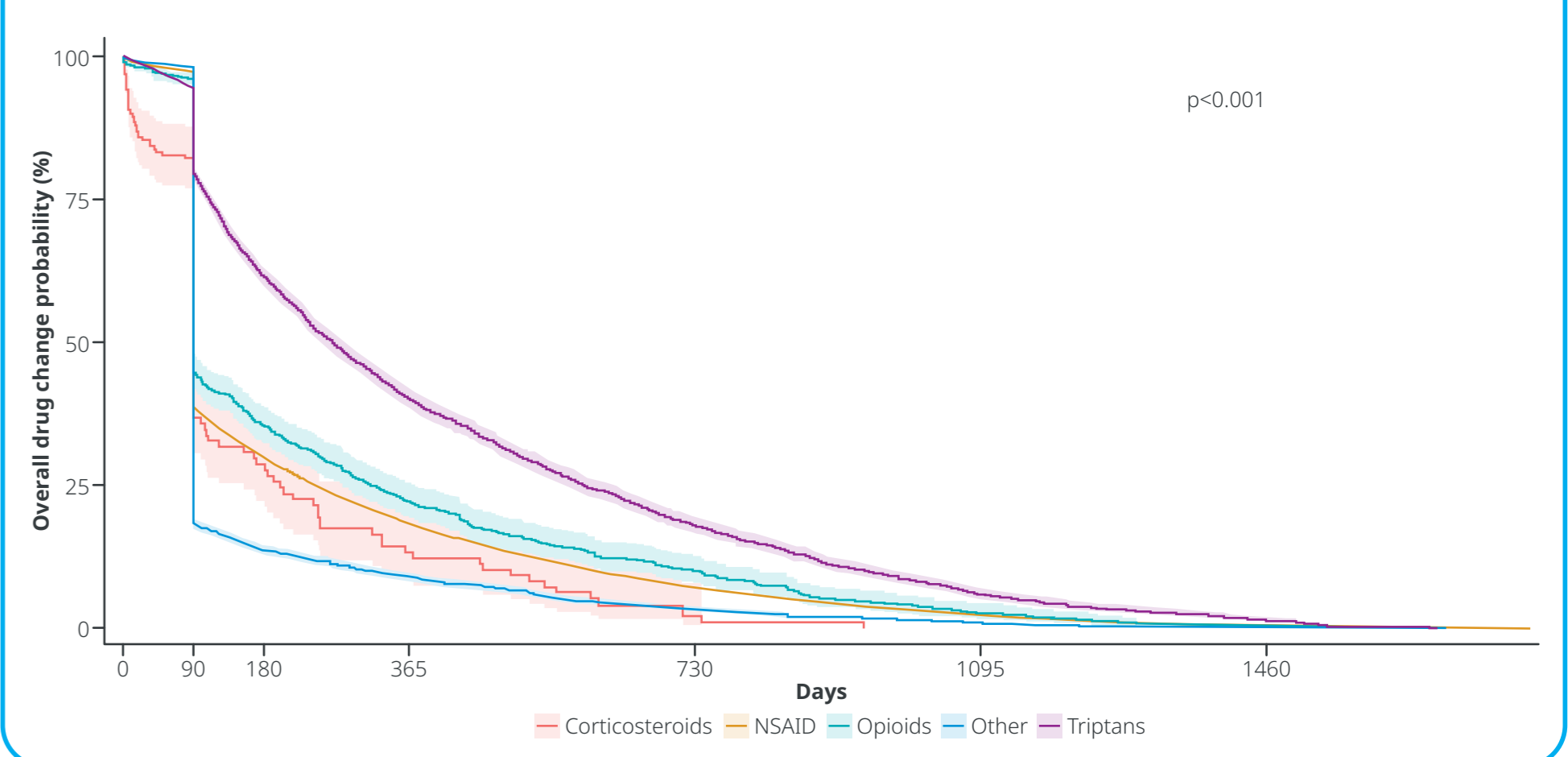


Figure 2. Probability of switching of first treatment to manage acute migraine.



## CONCLUSION

The majority of migraine patients were initially managed by general practitioners with low frequency of annual visits. NSAID and corticosteroids were the first election treatments in acute events as well as beta blockers and antiepileptics in preventive treatment.

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