

Headache in children treated at Hospital General de México “Dr. Eduardo Liceaga”

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Abstract

Introduction: The study aimed prevalence of primary and secondary headaches in children attending the Pain Clinic of Hospital General de México “Dr. Eduardo Liceaga”. **Objective:** The objective of the study was to identify the prevalence of headaches in children at the Pain Clinic of the Hospital General de México. **Materials and methods:** This was a descriptive, retrospective, cross-sectional, and observational study of pediatric patients between 5 and 17 years old at the Pediatric Algology service with a headache from January 1, 2012, to January 1, 2017. They were included and classified according to the type of headache, age, and gender. **Results:** During the time of the study, 4281 consultations were obtained with 526 patients with headaches. Twenty-three percent had primary headaches, most frequently migraine-type (18.25%) and secondary (12.54%) with vascular headache as the most frequent. Not included in any of these categories were the remaining 63.88% as under study. After 13 years of age, the most affected gender was female. **Conclusions:** Headaches are one of the most common complaints, the most frequent is primary. Its prevalence varies greatly and increases throughout childhood.

Keywords: Primary and secondary headaches. Children. Adolescents. Epidemiology.

Introduction

Headache is a frequent reason for consultation¹, in children, the frequency is 58.4%², and its prevalence varies (5.9-82%) according to definitions and inclusion criteria. It increases during childhood with a maximum between 11 and 13 years of age in both sexes. It is recurrent in 80%, with 10% of these experiences occurring more than 5 days per month. The prevalence of migraine is 9%, with 1% being chronic, 13% episodic tension, and 1% chronic tensioning³. After the age of 14, it occurs more in girls⁴. It is associated with learning

difficulties^{3,5} and children with negative emotional states (anxiety, depression, or mental anguish) have greater headache persistence⁶⁻⁸. There is a close interaction between somatic and psychological aspects of migraine because, in children, a psychological problem can manifest itself with physical symptoms⁹⁻¹¹.

The association with obesity has not been determined but shared pathophysiological mechanisms are proposed^{12,13} such as calcitonin-related protein, serotonin, orexin, and adipocytokines (adiponectin and leptin)^{14,15}. The medical history is essential and the physical examination

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Date of reception: 07-07-2023

Date of acceptance: 05-12-2023

DOI: 10.24875/HGMX.23000050

Available online: 14-10-2024

Rev Med Hosp Gen Mex. 2024;87(4):161-165

www.hospitalgeneral.mx

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is complemented by the neurological examination including blood pressure and fundus measurement. For the assessment of intensity, in children under 10 years of age, analogous scales are used (revised face scale), in older children, the verbal numerical scale is from 1 to 10¹⁶.

The International Headache Society Association (IHS) divides them into three categories: Primary (Tension, Migraine, Trigeminal Autonomic, and other disorders), secondary (to another pathology), and other headaches including painful lesions of other cranial nerves and other headaches¹⁷. Secondary are those associated with: (1) Traumatic brain or cervical trauma, (2) cranial or cervical vascular disease, (3) non-vascular intracranial disorders (infections and tumors), (4) administration or suppression of "substances," (5) infectious origin, (6) homeostasis disorders, (7) disorders of the skull, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cranial structures, and (8) psychiatric disorders.

Headache is a major health problem in childhood and is a frequent cause of school absence. It is estimated that 75% of children have suffered a significant headache episode in the 1st 15 years of life³. Studies in Mexico assessing the prevalence of primary and secondary headaches in children are few. For this reason, the interest arose to know the prevalence of headaches and their causes in children who attend the Pain and Palliative Care Clinic at Hospital General de México "Dr. Eduardo Liceaga".

Material and methods

An observational, descriptive, retrospective, cross-sectional study in which the records of outpatients with headaches who attended the Pain Clinic between January 2012 and January 2017 was reviewed. These patients were assessed and the diagnosis of headache was reached by the specialist doctor attached to the clinic with the support of the residents of the High Specialty of Algology. The information was taken from the database by selecting those records whose ICD-10 of the reason for consultation corresponded to headache. Subsequently, the files were requested in the clinic's archive. In the files, information was collected to determine the type of headache, age distribution, and gender. According to the exclusion criteria, patients over 18 years of age and those under 5 years of age were not reviewed.

During the evaluation of the files, those that did not have complete information were also discarded

Table 1. Distribution of patients according to gender

Gender	Frequency	Percentage
Female	288	53.27
Male	248	46.26
Total	536	100

Table 2. Distribution of patients according to age

Age in completed years	Frequency	Percentage
5	24	4.5
6	32	6.1
7	18	3.4
8	29	5.5
9	43	8.2
10	60	11.4
11	35	6.6
12	31	5.8
13	58	11
14	44	8.3
15	57	10.2
16	28	5.3
17	67	12.7
Total	526	100

because they did not present sufficient data. The information collected was recorded in an Excel database from where it was classified according to the variables identified to prepare the tables and graphs.

Results

The study included patients who presented between January 2012 and January 2017 for headaches regardless of whether they were 1st-time or subsequent patients. The total number of corresponding consultations was 4281, of these, 536 files were reviewed with the reason for consultation indicated, which corresponds to 12.5% of them, 248 were male patients and 288 were female; 10 were excluded because they were under 5 years of age according to the inclusion criteria. The following variables were obtained: age and gender (Tables 1 and 2), and headache causes (Fig. 1).

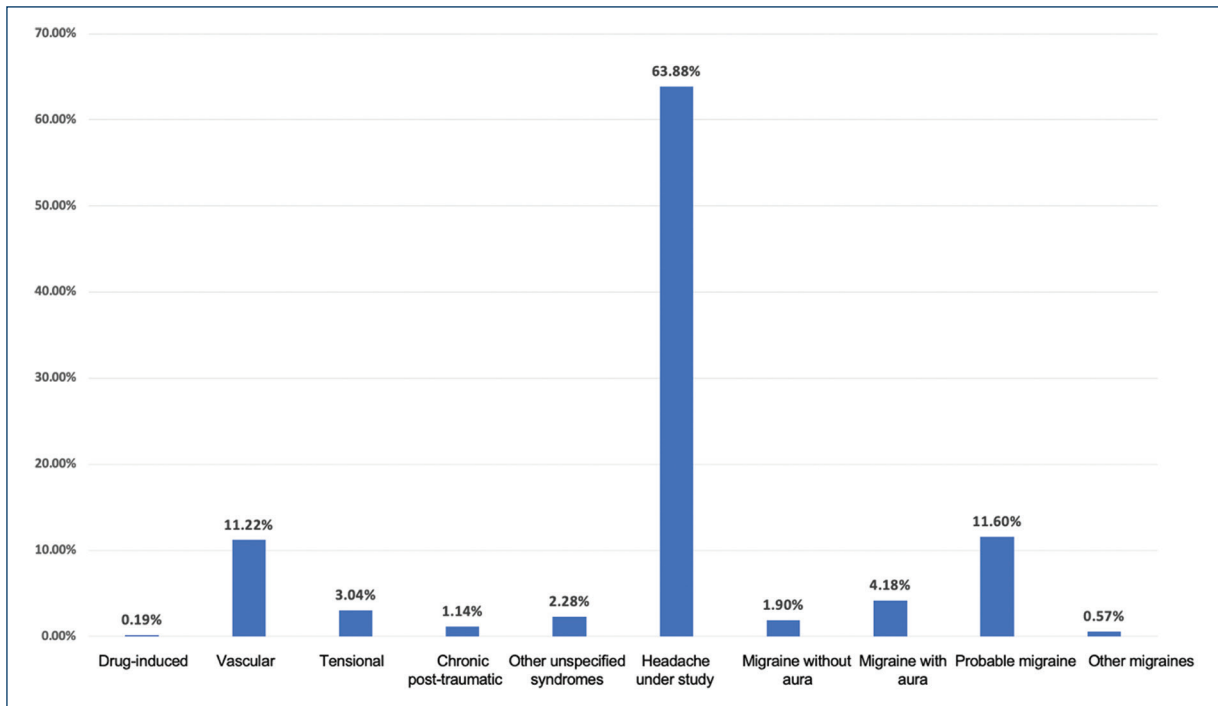


Figure 1. Most common causes of headache in children.

The average age was 12 years. The age at which most patients consulted for headache corresponded to 17 years (12.7%) and the largest number of patients was in the group of adolescents (12-17 years old) with 53.32%. On the other hand, in early childhood (under 5 years of age) only 4.5% was found, while in childhood (6-11 years old), 41.2% were consulted. In relation to gender, it was observed that headache consultation was higher in girls (53.73%) compared to boys (42.26%) and with a greater predominance in the group that corresponds to adolescents.

The diagnoses identified were determined according to the criteria of the III International Classification of Headaches of the IHS. Thus, primary headaches corresponded to 23.57% of patients, secondary headaches to 12.54%, and other headaches to 63.88%.

Fig. 1 details the five main diagnoses reported.

Among other headaches, those that we classify “in study protocol” are of special interest, being the most frequent. This type of headache was considered for those patients who after a period of 1 year continued without an identifiable cause. It is important to note that, within the history and physical examination of the headache, “red flags” suggestive of the pathology of urgent resolution are sought. Patients in the study protocol did not have this symptomatology. Among the

causes identified in this group are the delay in carrying out complementary imaging studies, for example, or complementary assessments by other specialties.

In the secondary headache group, headache attributed to cranial vascular disease was the most frequent due to rupture of Arteriovenous Malformation, corresponding to 12.5% of patients. The least frequent pathologies as a cause of headache corresponded to the remaining 5.37% and included migraine without aura (1.9%), chronic post-traumatic headache (1.14%), other migraines (0.57%), unspecified syndromes (2.28%) and substance-induced (0.19%). Headaches attributed to the administration or suppression of substances include those caused by exposure, overuse of headache medication, or withdrawal of substances. The one identified corresponded to the second group, overuse, due to ergotamine.

Discussion

In this study, the frequency of headaches was measured in children attending the Pediatric Algology Clinic at the Pain Clinic. Pain intensity was assessed using two scales depending on the age of the patients. Both scales are validated and are the revised face scale (FPS-R) in patients aged 5-10 years and in older patients the analogous verbal scale (**Fig. 2**).

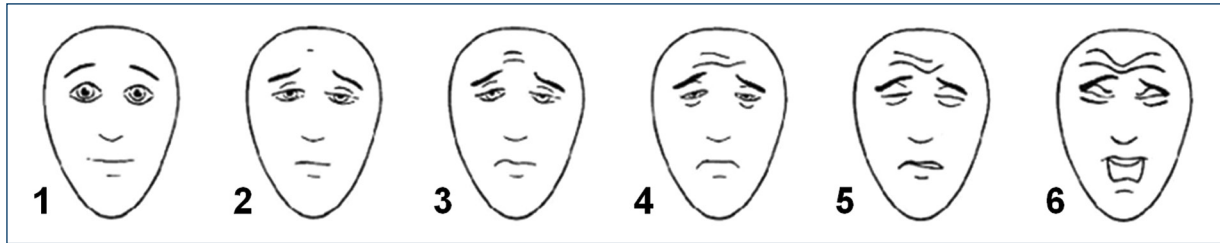


Figure 2. Revised face scale-numerical verbal scale.

The frequency of headache presentation as a reason for consultation in the Pain Clinic of 12.52% of the total consultations, corresponds to what was reported by the review by Antonaci et al.³, which indicates its presentation between 5.9% and 82%, that is, this is a common complaint^{18,19} representing the most common type of pain in children and adolescents^{20,21} and is also disabling^{3,22} because of its impact on quality of life, school attendance and socialization²³.

A similar behavior was maintained with respect to the frequency of headaches by gender ($p < 0.05$). However, in the relationship of headache by age and gender, there is no predominance until before puberty, but after the age of 13 years, being higher in females in relation to males ($p < 0.01$), coinciding with what was reported by Genizi^{4,20}.

The results obtained did not vary in relation to the reported literature, with primary headaches (23.57%) being more prevalent than secondary headaches (12.54%)²¹. A high percentage cannot be classified as primary or secondary according to the International Classification of Headache Disorders of the International Headache Society because they are still under study (63.88%) and are not classifiable at the moment.

In the category of primary headaches, the most frequent is migraine (19.6%) with and without aura. According to the Global Burden of Disease Survey¹, it is the third most prevalent disorder in the world and the third leading cause of disability in people under 50 years of age, regardless of their gender. In secondary headaches, vascular headaches occur more frequently, corresponding to 89%^{1,3}, important results given the possible association with threatening neurological conditions²¹, as in the case of our patients who presented the rupture of a cerebral arteriovenous malformation as the cause of their symptoms. Arteriovenous malformations may be evidenced with headache in 3-20% of patients²².

Conclusions

- The Pediatric Algology service of the Pain Clinic is a third level of hospital care, despite the results obtained, the sample number is not sufficient to generalize them to the rest of the population, so it is necessary to continue with more similar studies.
- A considerable prevalence of headache in children of 12.5% was determined as a reason for consultation in the Pediatric Algology service of the Pain Clinic. For this reason, it should not be an underestimated pathology and its etiology should be identified.
- In this study before puberty, the prevalence of headaches does not predominate by sex, but from 13 years of age, the female sex is the most affected.
- Primary headaches correspond to the most frequent in the pediatric population, corresponding to 23.57%, the second place is occupied by secondary headaches with 12.5% of the population. However, up to the remaining 66% cannot be integrated into a category of the International Classification of Headache Disorders because they are still in the diagnostic process and cannot be classified.
- Within the primary headaches, the most frequent is migraine with 19.6% and in secondary headaches, vascular headache occurs more frequently with 89%.

Acknowledgments

The authors would like to thank to the staff of the Pain Clinic and Palliative Care at Hospital General de México “Dr. Eduardo Liceaga”, who every day face the pain and suffering of so many patients who require assistance and who do so with the best possible disposition and preparation.

Funding

The authors declare that they have not received funding.

Conflicts of interest

The authors declare no conflicts of interest.

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