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Primary Headache in the Neurology Department of the Bouake Teaching Hospital (Ivory Coast): Epidemiological, Clinical and Therapeutic Aspects

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Abstract

The survey conducted at the Bouaké Teaching Hospital in Ivory Coast examined the epidemiological, clinical and therapeutic aspects of primary headache (migraine and tension-type headache). This prospective survey involved 66 adult patients, mainly women (75.76%), with an average age of 42 years. Patients consulted for chronic headaches, and many had received previous treatment, mainly analgesics and amitriptyline, for prophylaxis. A diagnostic discrepancy of 25.76% was found between the initial diagnoses made by junior neurologists and those established after re-evaluation according to ICHD-3 criteria. The majority of patients received treatment for attacks (mainly NSAIDs) and prophylaxis (mainly amitriptyline), but triptans, recommended for crisis treatment, were rarely prescribed. A high number of patients suffered from depressive symptoms (60%) and anxiety (67%) according to HAD scores, indicating a significant psychological impact of headaches. Three months after treatment, 71.21% of patients showed an improvement of more than 50% in terms of headache frequency and intensity. The study suggests a number of recommendations for improving headache management in Ivory Coast, including better training of doctors in diagnostic criteria and improved access to medication.

Keywords

Primary Headache, Migraine, Tension-Type Headache, Neurology, Africa

1. Introduction

Primary headache disorders are a public health problem with an impact on the sufferer and society. The global prevalence of headaches in adults is 47%, with unequal distribution across continents. A rate close to 50% is found in Europe, Asia and Australia, while in Africa, the prevalence is around 20% [1]. In Tanzania, a study estimated the prevalence of primary headaches in 2004 to be 23.1% [2]. Ivory Coast doesn't have national data on headaches. Bouaké is a city on the Central Ivory Coast and the only one in the interior of the country with a tertiary-level health center. It therefore receives patients from several parts of the country, and even from neighbouring countries (Mali, Burkina Faso, Guinea, etc.). Two surveys of healthcare workers at Bouaké Teaching Hospital and medical students in Bouaké reported prevalences of 23% [3] and 36.02% [4], respectively. Despite standardized diagnostic criteria, only a minority of headache sufferers are correctly diagnosed by healthcare professionals. This may be due to the inadequate length of modules devoted to headaches in medical training, with an average of 4 hours at the undergraduate level [6]. Headaches deserve more attention, particularly in terms of primary prevention, diagnosis and appropriate treatment.

Their diagnosis is based on the criteria of the International Classification of Headache Disorders (ICHD-3) published in 2018 [7]. There are recommendations for the management of tension-type headaches and migraines in adults [8]. What about their application in clinical practice and the effectiveness of these therapeutic strategies on our patients? To this end, we described the epidemiological, clinical and therapeutic aspects of headache and assessed the management of tension-type headache and migraine in neurology consultation at the teaching hospital in Bouaké (Ivory Coast).

2. Method

This was a prospective descriptive study conducted over six (6) months from August 1, 2022 to January 31, 2023 in the neurology department of the teaching hospital of Bouake (Ivory Coast). The study involved adolescents and adults seen in neurology consultations. Patients aged 18 or over with primary headache type (migraine and/or tension-type headache) were included. Patients received explanations about the study and gave their verbal consent, which was recorded in the patient file before inclusion. Patients who had difficulty answering the questionnaire or who declined to take part in the study were excluded. Variables studied included socio-demographic data (age, gender, occupation, place of residence, level of education), medical history (hypertension, diabetes, chronic headaches, familial headaches, tobacco, alcohol, depression, epilepsy, head trauma), clinical data (date of onset, consultation delay, headache site, type of pain, pain intensity, duration of headache attacks, headache frequency, aggravating factors, sedating factors, associated signs, evoked diagnosis, retained diagnosis), therapeutic data (previous treatment, proposed treatment), evolving data. After the visit to the junior neurologists assigned to the day's consultation, all patients with primary head-

aches (migraine and/or tension-type headache) were accompanied and then informed that he/she was to be seen by another doctor and included in a study. If the patient agreed, he/she was taken to the investigator's office and re-interviewed using the survey form, taking into account the ICHD-3 criteria.

At the end of the interview, a diagnosis was made according to the ICHD-3 criteria. This diagnosis was compared with that established by the first consulting physician. In the event of a diagnostic discrepancy, the patient was referred to the senior neurologist supervising the study to determine the final diagnosis, and the patient received appropriate treatment. The junior neurologist who first saw the patient was unaware that his diagnosis would be assessed according to ICHD-3 criteria. The impact of headache on quality of life was assessed by the Headache Impact Test-6 (HIT-6) and the Hospital Anxiety and Depression (HAD) scale at the end of the consultation. Patients were re-contacted three months later, either by telephone or in consultation, to assess treatment efficacy.

In the event of a favourable outcome (reduction of frequency and/or intensity by at least 50%), we recommended that treatment be continued. In the event of an unfavorable or stationary course, the patient was referred for therapeutic rehabilitation. All data collected were anonymous.

3. Results

We registered 599 patients in consultation during the study period. These included 70 cases of chronic headaches, representing a hospital frequency of 11.18%. In the end, we retained 66 patients. The average age was 42.48 ± 13.71 years. Women accounted for 75.76% of respondents (n = 50). Respondents were mostly civil servants (n = 24) or shopkeepers (n = 12). The respondent's professions are shown in Table 1. Headache predominated in subjects with a higher level of education (n = 25).

Table 1. Distribution of patients by profession.

Profession	Count	Percentage (%)
Shopkeeper	12	18.18
Farmer	2	3.03
Pupils	7	10.61
Student	6	9.09
Civil servant	24	36.36
Retired	6	9.09
Unemployed	9	13.64
Total	66	100.00

The delay before consultation was less than 2 years in 57.58% of cases, and less than one year in 40.90% of cases. The patients had received previous treatment in 86.36% of cases. Among these patients, 63.16% received the treatment after a consultation with a healthcare professional, and 36.84% had self-medicated. These

healthcare professionals were mainly general practitioners (52.78%) or neurologists (27.78%). The molecules most frequently prescribed during these consultations were: amitriptyline, paracetamol, codeine and tramadol.

The diagnosis after reassessment by the senior neurologist according to ICHD-3 criteria is shown in Table 2. A comparison between the diagnosis made by the junior neurologist and that established after reassessment according to ICHD-3 criteria revealed an imprecise diagnosis in 25.76% of cases (n = 17). Patients received treatment for headache attacks in 71.21% of cases, and preventive treatment in 96.97% of cases. The molecules prescribed for headache attacks are shown in Table 3. Those prescribed for preventive treatment are in Table 4. The HAD scale for depression was 11 or more in 31.82% of cases. The HAD scale for anxiety was 11 or more in 36.36% of cases. The details of HAD scale are shown in Table 5. The HIT-6 scale details are shown in Table 6. At 3 months, we noticed a decrease

Table 2. Distribution of diagnoses after reassessment by the senior neurologist.

	Diagnosis retained after reassessment	Count	Percentage (%)
Tension-type headache (n = 29)	Chronic tension headache	21	31.82
	Episodic tension headache	8	12.12
Migraine (n = 37)	Probable migraine	9	13.64
	Migraine with aura	8	12.12
	Migraine without aura	8	12.12
	Chronic migraine with aura	6	09.09
	Chronic migraine without aura	6	09.09
Total		66	100

Table 3. Molecules prescribed for head attacks.

Molecules (n = 47)	Count	Percentage (%)
Non-steroidal anti-inflammatory drugs (NSAIDs)	34	72.34
Triptans	9	19.15
Nefopam	2	04.26
Amitriptyline	2	04.26

Table 4. Molecules prescribed for preventive treatment.

Molecules (n = 64)	Count	Percentage (%)
Amitriptyline	53	82.81
Propanolol	6	09.38
Pregabalin	2	03.13
Oxetorone	1	01.56
Valproic acid	1	01.56
Tiapride	1	01.56

Table 5. Patient distribution according to HAD scale. (a) Distribution according to HAD depression; (b) Distribution according to HAD anxiety.

(a)		
HAD Scale Depression (n = 66)	Count	Percentage (%)
<8	21	31.82
[8 - 10]	24	36.36
≥11	21	31.82
Total	66	100
(b)		
HAD Scale Anxiety (n = 66)	Count	Percentage (%)
<8	21	31.82
[8 - 10]	21	31.82
≥11	24	36.36
Total	66	100

Table 6. Patient distribution according to HIT-6 scale.

HIT-6 scale (n = 66)	Count	Percentage (%)
<49	8	12.12
[50 - 55]	10	15.15
[56 - 59]	10	15.15
≥60	38	57.58
Total	66	100

in headache frequency and intensity of more than 50% in 71.21% of cases. Forty-six patients had correctly resumed daily activities at the time of evaluation.

4. Discussion

The aim of this study was to describe the epidemiological, clinical and therapeutic aspects of primary headaches seen in neurology consultations at Bouaké teaching hospital. The patients were predominantly young (mean age 42.48 ± 13.71 years) and female (75.76%), with around a third of them working in the civil service (36.36%). Several publications have studied the epidemio-clinical aspects of primary headaches in various population strata. Our results are in line with some of them, where the predominance of the female sex is highlighted. This is notably the case of Zebenigus *et al.* in 2016 in Ethiopia, who reported 55.7% of women in their study devoted to primary headaches in households surveyed unannounced [9], or Mbewé *et al.* in 2015 in Zambia with 58.5% of women in their door-to-door survey [10]. Ossou-Nguiet *et al.* in Brazzaville in 2019 also reported a relatively

young average age (mean age 42 ± 14 years) and a predominance of women (66.32% female) [11]. In these different surveys, female predominance was described for migraine. Migraine appears most often from puberty onwards, suggesting the influence of female sex steroid hormones [12]. This observation was also made by Anayo *et al.* in Togo in 2019, who found a high frequency of primary headaches in the workplace (40.6%) [13]. Henry and Grim also reported a predominance of migraines in subjects who were providing intellectual effort in a study in Paris [14]. The respondents had consulted within less than a year in 40.90% of cases. Oussou-Nguiet *et al.* in Brazzaville, in 2019, reported an average neurology consultation time of 2 years for tension headaches and 5 years for migraines [5]. These short delays in consulting a neurologist for the patients in this survey could be explained by the probably disabling nature of the headaches. In most cases, the patients had received the first treatment after consultation with a healthcare professional. Our observations are in line with those of Olajumoké *et al.* in Nigeria in 2014, who reported a rate of 83.9% of patients having already consulted a general practitioner prior to their consultation at the tertiary health center [15]. The disabling nature of chronic headaches and the desire for rapid relief could be the reasons for these high rates of patients being seen again. These reasons could also explain the high rates of self-medication reported in the literature, notably by El Sherbiny *et al.* in Egypt (61.7% self-medication in cases of primary headache in rural and urban populations in the Fayoun region) [16], as well as in the present survey (36.84%). Self-medication in primary headaches can lead to chronic headaches, with the risk of painkiller abuse headaches. A comparison between the diagnosis made by the neurologist and that established after reassessment according to ICHD-3 criteria revealed an inaccurate diagnosis in 25.76% of cases. Lebedeva *et al.* in Russia also reported that only 12% of migraine sufferers and 11% of tension-type headache sufferers had obtained the correct diagnosis [8]. There are several possible reasons for this: insufficient hours devoted to headache training for general practitioners [6], insufficient time devoted to neurology consultations, large number of patients in consultation, and lack of systematic application of ICHD-3 criteria during neurology consultations. The small size of our sample does not allow us to draw definitive conclusions. Other studies with larger samples could allow us to draw more definite conclusions. Regarding medication, most patients received crisis treatment. These were mainly NSAIDs. Triptans were prescribed in only 19.15% of cases. The low use of triptans could be explained by their high cost and the low social security coverage of patients, which makes them difficult to access. Our observations are in line with those of Ossou-Nguiet *et al.* who found that triptans were rarely used in Africa, even in neurology consultations, due to their high cost [5]. Wahab *et al.* in Nigeria also reported in a survey of 145 migraine sufferers that none of them had received triptan treatment [17]. In 28.78% of cases, patients didn't receive crisis treatment, probably because they were seen during a period of lull. In 96.97% of cases, patients received prophylactic treatment. Neurologists prescribed it almost systematically, contrary to international

recommendations, which suggest it only in chronic forms of migraine and tension headache, and/or in cases of impaired quality of life. Amitriptyline was the most prescribed molecule (82.81%), probably because of its cost, and its beneficial effect on the anxiety and depression that very often accompany these primary headaches. Diallo *et al.* in 2019 in Lomé reported similar results (amitriptyline as headache prophylaxis in 92.6% of cases) [18]. In our survey, therapeutic education concerning prophylactic and crisis treatments was provided in 89% and 70% of cases, respectively. Patients need to be given clear information on diagnosis and treatment. Patients need to be informed about the criteria for treatment efficacy, in order to ensure good compliance. In view of these results, we can say that the management of migraines and tension headaches by neurologists was broadly in line with international recommendations. Neurologists did not systematically assess the impact of chronic headaches on patients' quality of life. This is probably due to a lack of time during consultations, or to a lack of knowledge of quality-of-life scales. The same observation was made in a Korean study by Kim *et al.* in 2022, who reported that the use of validated scales to assess headache-related disability and depression in their patients was very low overall (7.9% for HIT-6) [19]. Re-evaluation of these patients after consultation with physicians revealed that over half (63%) had a HIT-6 score above 60, thus having a major impact on quality of life. Shin HE *et al.* in Korea in 2008 found an average HIT-6 score of 53.4 ± 8.7 score points in 68% of cephalalgic patients [20], similar to those in the present series. The HAD score was greater than or equal to 8 for anxiety in 67% of cases and for depression in 60%. Our study is in line with that of Zebenholzer K. *et al.* in 2016, who reported a significantly higher prevalence of anxiety and/or depression in chronic headaches (64%) in their series involving eight Austrian headache centers [21]. Patient follow-up over a 3-month period showed a good improvement in headache intensity and frequency, with 71.21% of cases regressing by more than 50%. These results demonstrate the effectiveness of migraine and tension headache management in the neurology department. However, our knowledge of the outcome of primary headache treatment remains incomplete, and extending the follow-up period to 6 or 12 months could have enabled a more comprehensive assessment of treatment results, as it could provide insight into long-term effects. In a 2005 cohort study, Lyngberg *et al.* found that the majority of patients had a good evolution of chronic headaches [22]. Changes in quality of life were assessed according to whether or not patients resumed their daily activities. Quality of life improved in the majority of patients (46). We cannot generalize these results due to the size of our sample and the monocentric nature of the present series.

5. Conclusion

The survey sheds light on primary headaches in Ivory Coast, suggesting recommendations for improving the management of headaches in our local practice. These include strengthening continuing education for doctors on headaches, systematically applying ICHD 3 criteria during consultations, improving access to

prophylactic treatment by identifying patients who really need it, and integrated management of the psychological aspects associated with headaches.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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