

Primary headache care delivery by nonspecialists in Brazil

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Headaches are common disorders usually examined by nonneurologists. In order to assess how primary headache patients (IHS groups 1, 2, and 3) are generally managed by nonspecialists, 414 patients were asked about their previous headache care. Correct diagnosis had previously been made in only 44.9%, 6.7%, and 26.7% of the migraine, tension-type headache, and cluster headache patients, respectively. The patients underwent 501 investigative procedures motivated by the headache, averaging 1.21 examinations per patient, mostly EEGs. Preventive treatment was largely overlooked irrespective of the headache type. It is concluded that scientific improvements in headache care may be ineffective unless educational programs improve headache knowledge in general. □ *Diagnosis, investigation, primary headache care, treatment*

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Recurrent headaches affect a large group of people, mostly during the productive phase of their lives (1, 2). Few headache patients, however, tend to seek medical attention. It is estimated that only 16% of tension-type headache (TTH) patients and 56% of migraine patients visit a physician, and a specialist is consulted by 4% and 16%, respectively (3). In the USA, 2/3 of migraine sufferers never undergo a medical examination for that reason (2). In Canada, 54% of migraine patients and 45% of individuals with TTH see a doctor, and only 32% return for follow-up (4). Even after a medical examination, a substantial number of the headaches may be misdiagnosed or mistreated (5).

According to the International Headache (IHS) Society Task Force on headache services delivery, general practitioners should ideally have a broad knowledge of all types of headache. Physicians should also have a positive attitude towards headaches as a major medical problem (6).

To improve headache care, nonneurologists and general practitioners (GPs) should play a fundamental role, generating positive effects in health and

cost reduction. Headache specialists are obviously insufficient and perhaps not necessary for every headache patient. The general attitude of disdain towards headaches needs to change. In order to accomplish this task, educational programs based on local needs should be encouraged. The objective of the present work was to evaluate how headache patients are approached before getting to a headache specialist.

Material and methods

Twenty-one members of the Brazilian Headache Society from 16 cities in different regions of the country, all fully qualified doctors with special interests and skills in headache, interviewed 414 patients in accordance with the questionnaire shown in Table 1. Only patients examined by the participating researcher for the first time were included. The main diagnosis had to be a primary headache classified in groups 1, 2, or 3 according to the IHS (7). The presence of more than one headache was accepted. The accuracy of the previous diagnoses, treatments, and supplementary examinations was checked. Data are presented as mean \pm SD.

Results

The demographic data and patients' diagnoses are given in Table 1. The majority of the subjects (316, 76.7%) had seen on average 2.9 health providers each before coming to a headache specialist (range 0 to 32). The headache started 10.8 ± 10.4 years before the specialist examination, and the time-span

Table 1. Questionnaire.

For how long have you suffered from headache?
Have you ever sought medical attention because of headache?
If yes, answer the following questions:
When did you see a doctor for the first time?
How many and which doctors did you visit?
What diagnosis(es) was(were) made?
What sort of investigations did previous doctors order because of your headache?
What kind of treatment was prescribed?

The questions were answered by "de novo" patients suffering from headaches listed in IHS groups 1, 2, and/or 3.

Table 2. Demographic data and diagnoses.

	n	%
Gender		
Males	89	21.49%
Females	352	78.50%
Age (years)		
Males	26.34 ± 17.29	
Females	30.20 ± 15.21	
Total	32.96 ± 13.38	
Diagnoses		
Migraine (1)	321	77.53%
Migraine without aura (1.1)	258	62.31%
Migraine with aura (1.2)	52	12.56%
Tension-type headache (2)	116	28.01%
Episodic tension-type headache (2.1)	53	12.80%
Chronic tension-type headache (2.2)	48	11.59%
Cluster headache and CPH (3)	16	3.86%
Cluster headache (3.1)	15	3.62%
Chronic paroxysmal hemicrania (3.2)	1	0.24%

A single diagnosis was reported in 83.85% of the subjects; two diagnoses were seen in 15.90%, and three headaches were present in one patient. No subject suffered from more than three headaches.

between the headache onset and the first examination was 4.6 ± 7.7 years. Table 3 lists the type of professional care patients had sought previously.

The correct diagnosis was only made by the nonheadache specialists in 44.9%, 6.7%, and 26.7% of the migraine, TTH, and cluster headache (CH) patients, respectively (Fig. 1). A substantial number of patients received "headache" as a diagnosis, were informed that no disease was present, or had the diagnosis of various emotional disorders (Fig. 1). Concerning the 136 migraine patients who had had a correct diagnosis, 50.7% visited a GP, 49.3% visited a neurologist, 30.9% an ophthalmol-

ogist, 11% a neurosurgeon, and 11% an otorhinolaryngologist. Migraineurs visited 3.3 ± 3.6 health providers before the diagnosis was made. Out of the 7 TTH patients with a previous correct diagnosis, 6 had visited a GP, 4 had seen a neurologist and 1 had been examined by a neurosurgeon. These TTH patients had seen 1.5 ± 0.5 health providers before. Four out of 15 CH patients had had a correct diagnosis before visiting the headache specialist. This group had consulted 5.7 ± 1.5 health providers previously; all had seen a neurologist, 3 visited a GP, and 2 an otorhinolaryngologist.

Patients underwent 501 investigative procedures motivated by the headache, averaging 1.21 examinations per patient (range 0–23, Table 4, Fig. 2). EEG, the most frequent supplementary investigation, was performed by half of the migraine and TTH patients, and by almost all CH patients.

As far as treatment is concerned, patients were recommended 0.6 ± 1.2 types of prophylactic treatment each (range 0–11). No prophylaxis at all was recommended to 51.1%, 49.0%, and 33.3% of the patients suffering from migraine, TTH, and CH, respectively. Each individual had 1.6 ± 1.6 different acute treatments before coming to the specialized headache service.

The most frequently prescribed prophylactic treatments for migraine and TTH are shown in Fig. 3. The most frequent prophylactic recommendations for CH were no treatment (25%), verapamil (15%), methysergide (10%), pizotifen (10%), and miscellaneous (40%, values in percentage of the prescribed drugs). Data concerning acute treatment for migraine and TTH are shown in Fig. 4. CH patients were treated during attack with caffeine

Table 3.

Health provider consulted	n
General practitioner	403
Neurologist	205
Ophthalmologist	117
Otorhinolaryngologist	70
Pediatrician	43
Neurosurgeon	31
Gynecologist	13
Homoeopathist	11
Psychiatrist	11
Dentist	8
Acupuncturist	6
Gastroenterologist	6
Orthopedist	6
Cardiologist	3
Surgeon	3
Rheumatologist	3
Endocrinologist	2
Psychologist	2
Orthomolecular physician	1
Labor physician	1
Pneumologist	1

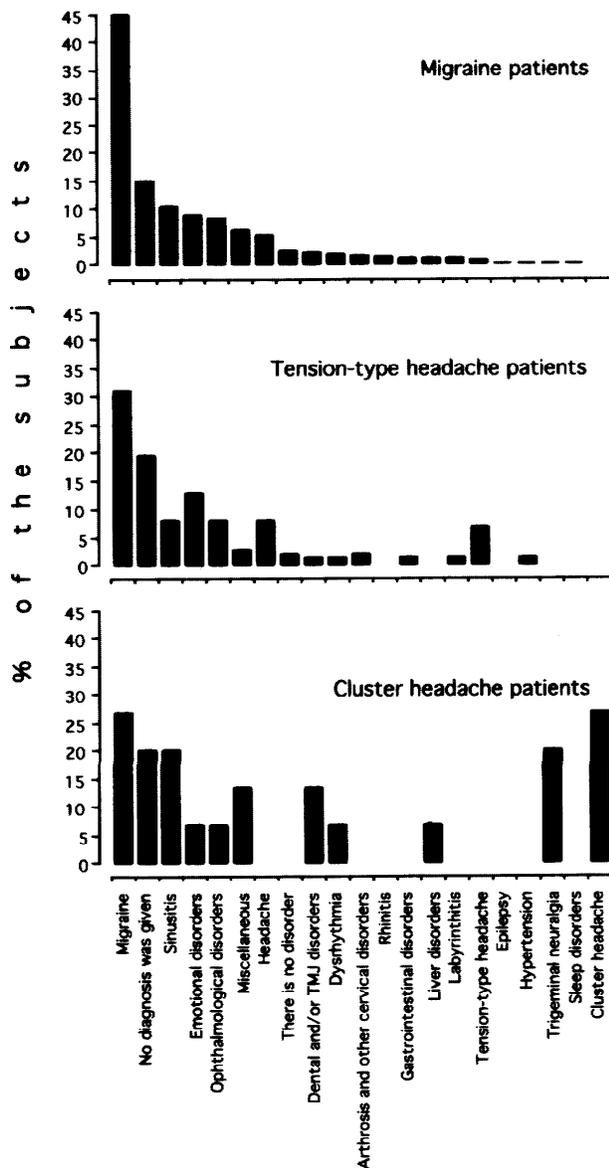


Fig. 1. Diagnoses in migraine (first panel), tension-type (second panel), and cluster headache patients (third panel) performed by healthcare providers before the specialist examination.

(20.7%), an ergotamine compound (16.9%), paracetamol (16.9%), dipyron (7.5%), and miscellaneous (38%) (values in percentage of the prescribed drugs).

Discussion

The majority of headaches do not deserve specialized care and should be easily diagnosed and treated by any qualified physician. Data presented here suggest that headache care by nonspecialists in Brazil, and potentially world-wide as our figures may be generalizable, must improve. Migraine was

Table 4. Headache investigation.

Electroencephalography	222
Computerized tomography	114
Sinus radiography	78
Skull radiography	44
Magnetic resonance	11
Cervical spine radiography	10
Brain mapping	8
Cerebral angiography	3
Magnetic resonance angiography	2
Gastric endoscopy	2
Lumbar puncture and CSF examination	2
Abdominal ultrasonography	2
Duplex scan of the carotid and vertebral arteries	1
Otoneurological examination	1
TMJ radiography	1

No. of investigations performed in 414 primary headache patients.

the most frequent headache, as expected from the sample we studied. TTH is more prevalent in the population (1, 8), but TTH patients seek medical attention less frequently.

TTH was comparatively the most overlooked headache and migraine was the best-diagnosed disorder (Fig. 1). Although migraine is more severe and interferes more with daily life, especially when attack frequency is high, TTH patients may be disturbed by daily pain. Misdiagnosing such cases as migraine (Fig. 1) may not only reduce chances of improvement but also lead to further chronification secondary to drug abuse. Since migraine is more frequently debated at medical forums, there are more drugs against migraine being released, and the pathophysiology of migraine is relatively better understood, this diagnosis may be easier for the nonspecialist. CH was recognized as such by a

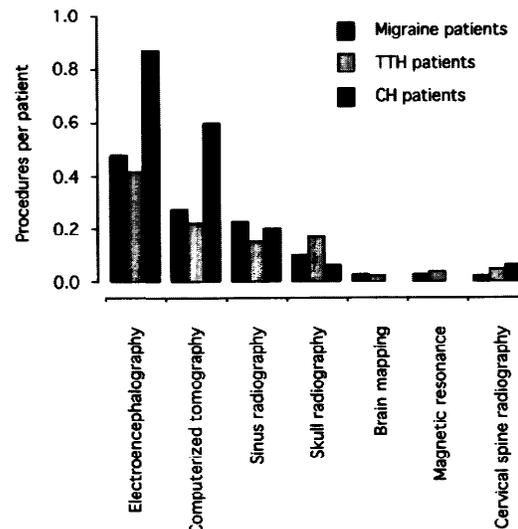


Fig. 2. Supplementary exams performed by healthcare providers in migraine, tension-type, and cluster headache patients before the specialist examination.

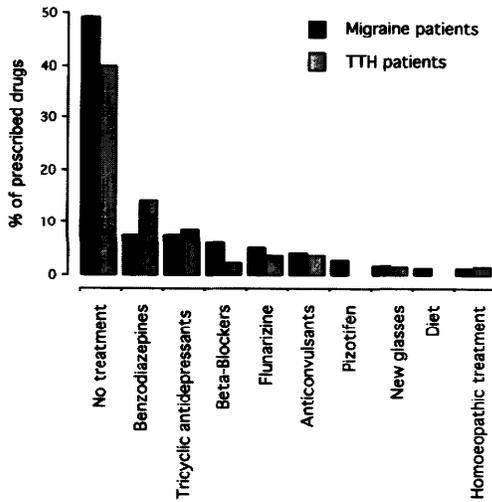


Fig. 3. Prophylactic treatment recommended to migraine and tension-type headache patients by healthcare providers prior to specialist care.

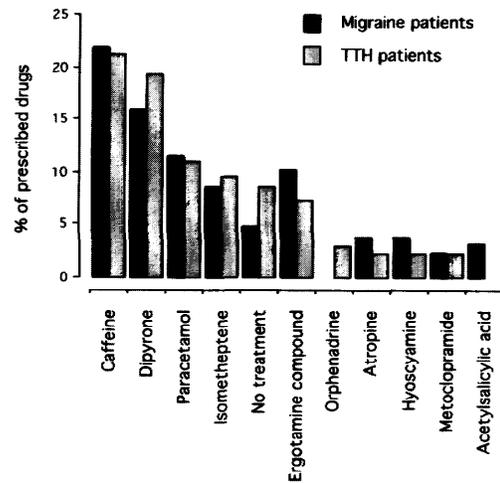


Fig. 4. Acute treatment recommended to migraine and tension-type headache patients by healthcare providers prior to specialist care.

substantial number of nonheadache specialists (26.6%), but all CH patients with a previous correct diagnosis saw a neurologist. It is surprising that a relatively high number of headache sufferers only receive a diagnosis such as "headache", which was actually the motivation for the medical examination. Many physicians say to headache patients that they do not have a disease, or simply do not offer the patient any conclusion at all.

Due to the selection methodology, perhaps the patients studied here represent the worst cases that finally come to a headache specialist, either spontaneously or through referrals. It is possible that other patients who do not seek specialist care because they are adequately diagnosed and treated by their other physicians, but data collected here do not suggest so.

Sinusitis was frequently recognized in our primary headache patients even without a suggested clinical picture. Sinusitis should present with a sense of fullness in the face, nasal discharge, or a postnasal discharge, cough, dentalgia, fever, nasal obstruction, anosmia or tenderness over the paranasal sinuses. X-rays of the sinuses were the third most requested supplementary investigation, and many patients could have the diagnosis without these examinations. Sinusitis seldom causes recurrent headache without other signs and symptoms of sinus infection (7). Similarly, ocular disorders and refractive errors are not frequent sources of head pain (7, 9), but many primary headache patients were diagnosed as having an ocular disorder.

Unnecessary investigations of many types were performed in this primary headache population. Ordinary EEG remains a popular procedure, even with enough evidence suggesting that EEG abnorm-

alities are neither specific nor frequent in headache patients (10–13). The number of useless examinations may represent a substantial direct cost in headache care. Data show that the concept of investigation inappropriateness in primary headaches is lacking in nonspecialists.

Curricular amendments and continuing medical education activities are needed to further emphasize that the headache diagnosis is based on adequate history and examination, except in relatively rare occasions when a secondary headache must be ruled out.

Prophylaxis, the most important attitude in headache practice, was not recommended by the majority of the healthcare providers. Acute treatment with pills containing combinations of various substances was the rule in treating headache patients. This justifies why caffeine was one of the most prescribed remedies, since it is present in the majority of the anti-headache preparations commercially available in this country.

Although new remedies are on the way, such as the new generation "triptans", the efficacy of scientific achievements will be reduced if the diagnosis and management of headache patients remain incorrect. Thus, education of both physicians and the general population must play an important role in improving headache care. Medical students, physicians in general, and neurologists must be offered comprehensive headache educational programs. This may help improve current opinion among the general population that headaches are untreatable and must be investigated with EEGs and neuroimaging. Emphasis must be placed on differential diagnosis of primary headaches, the importance of the clinical examination,

and the relative uselessness of supplementary investigations, the necessity of avoiding drug abuse, and the importance of treating patients prophylactically.

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