

Treatment of Hemicrania Continua: Case Series and Literature Review

Lídia Maria Veras Rocha de Moura ¹, José Marcelo Ferreira Bezerra ², Norma Regina Pereira Fleming ³

Summary: Moura LMVR, Bezerra JMF, Fleming NRP – Treatment of Hemicrania Continua: Case Series and Literature Review.

Background and objectives: Hemicrania Continua (HC) is a primary, disabling headache characterized by a continuous unilateral pain and responsive to indomethacin. There are symptoms common to the trigeminal-autonomic cephalalgias and migraine that complicate the diagnosis. This review aims to describe HC in a case series and review the best available evidence on alternative therapies.

Method: A systematic review of medical records and diaries of pain of 1,600 patients treated between January 1992 and January 2011 in a headache outpatient clinic.

Results: Ten patients with a possible diagnosis of hemicrania continua were selected; seven were diagnosed with HC according to the II International Classification of Headache Disorders. None of the patients had received the correct diagnosis before being treated at the outpatient clinic and the average time for treatment was 12 years. Prophylactic treatment was effective in 66.6% of cases with amitriptyline, 20% with gabapentin and 10% with topiramate.

Conclusions: HC should be considered among the diagnostic hypotheses of patients with continuous headache, with no change in neurological examination and additional tests, regardless the age of onset. The standard treatment with indomethacin (100-150 mg.day⁻¹) has significant risks associated with both short and long term use and may not be a good choice for continuous use. Recent studies point out possible alternatives: gabapentin, topiramate, cyclooxygenase-2 inhibitors, piroxicam, beta-cyclodextrin, amitriptyline, melatonin. Other drugs were described in different reports as efficient, but most of them were considered inefficient in other HC cases.

Keywords: Analgesia; Chronic Pain; Headache; Therapeutics

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INTRODUCTION

Since its description by Sjaastad ¹ over 20 years ago as a type of syndrome, Hemicrania Continua (HC) has been considered in the scientific community as a specific clinical entity belonging to the group of headaches responsive to indomethacin ^{1,2}.

Considered a rare disorder it is known today that HC is a disease usually underdiagnosed in daily medical practice, especially because there have only been small advances regarding the etiologic and pathophysiologic knowledge of the disease ^{3,4}.

It is also known that early diagnosis is important, because HC has shown to be a very disabling disease and only the appropriate treatment can provide a complete remission of symptoms ¹.

The present study reports the clinical and therapeutic approach of 10 patients with HC treated in a headache outpatient clinic. The subsequent literature review aims to describe this rare form of primary headache and analyze the best evidence available today on HC treatment.

METHOD

Medical records and diaries of pain from 1,600 patients treated between January 1992 and January 2011 at the Outpatient Clinic for Headache of the Pain Center of Hospital Universitário Pedro Ernesto (HUPE) were reviewed. To perform the case series study, were selected those with a possible diagnosis of HC, normal neurological examination and laboratory tests, including brain computed tomography and magnetic resonance imaging of the brain.

After analysis the relevant information was entered in a database, which included the following: age, sex, clinical description of headache, onset of pain, family history of headache, comorbidities, response to therapeutic test with indomethacin, established prophylactic treatment and response to other drugs. All participants were evaluated by two experts and followed-up by at least five months.

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1. Resident Physician, Hospital Universitário Pedro Ernesto, Universidade do Estado do Rio de Janeiro (UERJ)
2. Neurologist; Assistant Professor and Coordinator of the Neurology Discipline at Medical School, UERJ
3. Neurologist; Coordinator of the Outpatient Clinic for Headache, Pain Center – UERJ; Scientific Director, ADERJ

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Correspondence to:
Dra. Lídia Maria Veras Rocha de Moura
Departamento de Neurologia,
Hospital Universitário Pedro Ernesto – UERJ
Rua 28 de setembro, nº 77
Vila Isabel
20551030 – Rio de Janeiro, RJ, Brazil
E-mail: jnrlidia@gmail.com

For the item “clinical description of the headache” were considered location, quality, possible mitigating and aggravating factors, frequency of exacerbations, associated cranial autonomic symptoms and pain intensity. A 10-point visual scale was used in which zero represented no pain and 10 the worst pain imaginable.

The therapeutic test consisted of 25 mg indomethacin administered orally every 8 hours for 5 or 7 days. In the event of partial response a dose increase to 50 mg was considered three times a day for 5 or 7 additional days.

Regarding the statistical methodology data was analyzed using Excel (Microsoft®).

RESULTS

Ten patients with a possible diagnosis of HC were selected, six (60.0%) female, aged 29-66 years (mean 45.1 years) and four (40.0%) male, aged 37-78 years (mean 52 years). The female-male ratio was 1.75:1. The age at onset of symptoms ranged from 6 to 59 years (mean 31 years). None of the cases had family history of HC.

Seven patients received a diagnosis of HC according to International Classification of Headache Disorders (ICHD-II)⁵.

The other participants did not achieve a complete response to therapeutic test with indomethacin, despite meeting all other criteria of the ICHD-II.

None of the patients had received the correct diagnosis before being treated at the headache clinic. The median time to diagnosis was 12 years (21 to 456 months). One patient underwent tooth extraction due to a previous misdiagnosis. Among comorbidities, depression (30%), insomnia (30%), and lumbar disk herniation (20%) stood out. The other less prevalent diseases found were osteoarthritis, obesity, hypertension, hypercholesterolemia, essential tremor, hypothyroidism, nephrolithiasis, pulmonary tuberculosis, bronchial asthma and sequelae of poliomyelitis.

Table I shows the clinical description of the headache using the items defining HC according to ICHD-II. All patients had daily continuous pain for more than three months, which was unilateral, without side shift, of moderate intensity and scoring five to seven in the 10-point visual scale. Exacerbations had score of 9-10 points (intense or severe). Conjunctival hyperemia or tearing was the most prevalent autonomic manifestation reported by 80% of patients. All subjects suffered daily crises of severe pain, with one to six exacerbations occurring per day.

Table I – Clinical Description of Headache According to ICHD-II

	Patients									
	1	2	3	4	5	6	7	8	9	10
Headache characteristics										
Unilateral pain without side shift	x	x	x	x	x	x	x	x	x	x
Moderate intensity, with exacerbations	x	x	x	x	x	x	x	x	x	x
Daily and continuous, no pain-free intervals	x	x	x	x	x	x	x	x	x	x
Autonomic symptoms during exacerbation										
Conjunctival hyperemia and/or tearing	x	x		x	x	x	x		x	x
Nasal congestion and/or rhinorrhea			x	x	x			x		
Ptosis and/or miosis	x	x					x		x	
Response to therapeutic test with indomethacin										
Complete response (pain remission)	x	x	x	x	x	x	x			
Partial response (pain improvement > 50%)								x	x	x

Table II – Supplementary Clinical Description of Headache: Location of Pain

	Patients									
	1	2	3	4	5	6	7	8	9	10
Location of continuous pain										
Right (R)	L	L	R	R	L	R	L	L	R	R
Left (L)										
Exacerbation										
Temporal region	X	X						X		I
Orbital region				I		I		I		X
Retro-orbital							I	I		
Frontal region	I		I		X	X			X	
Parietal region		I			I				I	
Occipital region		I		X					I	
V2 ear			X				X			

X: point of pain exacerbation; I: site of radiating pain.

Table III – Abortive Treatment

Medication	Daily dose (mg)	Patients (n)	Effective (%)	Ineffective (%)
Indomethacin	75 a 150	10	7 (70%)	3 (30%)
Ketoprofen	50	1	0 (0%)	1 (100%)
Piroxicam	20	1	1 (100%)	0 (0%)
Ergotamine	0.5 a 1	5	0 (0%)	5 (100%)
Sumatriptan	50	4	1 (25%)	3 (75%)
Dipyron	500	4	1 (25%)	3 (75%)
Paracetamol	500	1	0 (0%)	1 (100%)

Table IV – Prophylactic Treatment

Medication	Dose (mg.day ⁻¹)	Patients										
		1	2	3	4	5	6	7	8	9	10	
Indomethacin	150		x	x								x
Gabapentin	1,800 to 2,700	x					x					
Topiramate	50					x						
Amitriptyline	25 to 75	x	x	-	x		-	x	x	x		-
Propranolol	80											-
Carbamazepine	900	-										-
Valproic Acid	1000											-
Verapamil	160											-

X: complete remission of pain; -: persistency or partial remission of pain.

In this series 5 patients had exclusively right-side hemicrania and 5 had left-side hemicrania. The temporal (30%) and frontal (30%) regions were the most commonly listed as the site of severe pain during exacerbations. Laterality, location and radiation pattern of pain were summarized in Table II.

Half of patients described their pain as throbbing, 30% as a pressure-type headache and 30% reported a burning sensation. Physical activity was reported by 60% of cases as a worsening pain factor and sneeze was specified as an aggravating factor by one patient. There were no records of improvement factors, except for abortive medications (Table III). As the initial diagnosis was not of HC, more than one treatment option was used for each individual.

Long-term indomethacin was effective in three patients who received it, but all complained of epigastric pain despite the concomitant use of proton pump inhibitor (omeprazole 20 mg.day⁻¹). However, all participants included in this series underwent a prophylactic treatment alternative to indomethacin. According to the individual response and side effects, more than one therapeutic test was necessary until complete or nearly complete remission of pain. Amitriptyline (50 to 75 mg.day⁻¹) was effective in six (66.6%) of nine patients. Two other patients responded well to gabapentin (1,800 mg.day⁻¹) and one patient received topiramate (50 mg.day⁻¹). The other drugs tested were listed in Table IV.

Table V – Diagnostic Criteria: Hemicrania Continua

A.	Headache for > 3 months meeting criteria B to D
B.	All following characteristics: <ol style="list-style-type: none"> 1. Unilateral pain without side shift 2. Daily and continuous, without pain-free intervals 3. Moderate intensity, but with exacerbations of intense pain.
C.	At least one of the following autonomic features occurring during exacerbations and ipsilateral to the pain: <ol style="list-style-type: none"> 1. Conjunctival hyperemia and/or tearing 2. Nasal congestion and/or rhinorrhea 3. Ptosis and/or miosis
D.	Complete response to therapeutic doses of indomethacin.
E.	Not attributed to another disorder.

DISCUSSION

Classification

The International Classification of Headache Disorders (ICHD-II) defines HC as a persistent, strictly unilateral headache responsive to indomethacin. Chapter four of the ICHD-II named "Other Primary Headaches" contains the currently used diagnostic criteria (Table V) ⁵.

Chronic daily headache, as a clinical entity, was not included in the ICHD-II. Silberstein et al.⁶ classified primary chronic daily headaches as a group of disorders including HC, transformed migraine (chronic migraine), chronic tension-type headache and new daily-persistent headache^{6,7}.

The inclusion of HC among Chronic Daily Headache (CDH) has been criticized due to its very peculiar therapeutic characteristics sharing with other CDHs only the chronic nature⁸.

However, from a strictly practical perspective considering HC as one possible cause of CDH may be helpful. The early administration of indotest (diagnostic test to detect indomethacin-responsive headache) in all cases of chronic unilateral headache may abbreviate the identification of HC cases^{5,9}.

ETIOLOGY AND PATHOPHYSIOLOGY

HC is considered an idiopathic disorder. There are few published case reports showing secondary causes for patients with clinical diagnosis of HC. These reports include post-traumatic hemicrania, hemicrania associated with surgery, unruptured intracranial aneurysms, organ transplant, temporomandibular joint dysfunction, cervical disc herniation, intracranial tumors and HIV infection¹⁰⁻¹⁵.

Cittadini et al.¹⁶ investigated the pathophysiology of HC and secondary trigeminal autonomic cephalgias. They suggested the involvement of physical factors such as tumor size or cavernous sinus invasion. However, they were not sufficiently clear about how pituitary tumors resulted in HC. Nociceptive peptides produced in the pituitary adenoma could be partly responsible. It was demonstrated, however, that pituitary adenomas secrete substance P, vasoactive intestinal polypeptide, active neurotensin Y and pituitary adenylate cyclase activating protein¹⁶.

The clinical phenotype of HC overlaps the phenotype of Trigeminal Autonomic Cephalgia (TAC) and migraines and these entities probably share the same pathophysiological mechanism^{17,18}. Studies with functional MRI showed activation of the contra-lateral posterior hypothalamus and ipsilateral dorsal pons in cases of HC. Some authors suggest the occurrence of a disinhibition of the posterior hypothalamus with subsequent release of the trigeminal-autonomic reflex. This reflex exacerbation would be the triggering factor of headache¹⁹.

Amaral et al.¹⁰ described a higher prevalence of patent foramen ovale in patients with HC or TACs, suggesting a possible, but not yet clarified, pathophysiological relationship.

EPIDEMIOLOGY

Over 100 cases of HC have been described since it was first defined in 1984. However, the actual prevalence of HC is still unknown. The incidence is higher among female with a ratio of approximately 2:1 and can occur at any age^{20,21}.

In the epidemiological study of headache by Sjaastad et al.²² about 1% of 1,838 individuals tested had a clinical pic-

ture suggestive of HC, but the diagnosis could not be confirmed due to methodological problems. Similar to previously published data HC in this series represented 0.6% of patients evaluated and also revealed a similar rate of incidence between the sexes.

Thus, although initially perceived as an extremely rare disorder in outpatient clinics specialized in pain treatment, it can be said with reasonable assurance that HC is not as rare as it seems⁸.

CLINICAL FEATURES

Clinically HC presents itself as a mild or moderate continuous and unilateral headache in the temporal, periorbital, or ocular region. There are periods of pain exacerbation consisting of severe headache that lasts for hours or days (usually less than 180 minutes) with migraine and/or autonomic symptoms associated, which awaken the sleeping patient who becomes agitated and restless^{23,24}.

HC can be sub-classified into three temporal forms: chronic (53%), relapsing-remitting (15%) and progressive-remitting form that evolved into chronic (32%). There are reports on rare cases of chronic HC remission²⁵.

Autonomic symptoms are often conjunctival hyperemia, tearing, runny nose, nasal congestion, ptosis and miosis. Migraine symptoms may be nausea, vomiting, photophobia and phonophobia. Other typical symptoms are eyelid edema, stabbing headache (also known as "ice pick" or "jabs and jolts") and foreign body sensation in the eye. These autonomic symptoms are usually more subtle than those present in episodic TACs²⁶.

Bigal et al.²⁷ also described a series of ten patients, in which all patients had continuous, unilateral headache sensitive to indomethacin. Seventy percent had autonomic features and 30% migraine symptoms during exacerbations. Only 10% of patients responded to anti-migraine drugs.

In a recent study Cittadini et al.²⁰ described a cohort of 39 patients with HC. Six patients did not meet all ICHD-II criteria, 3 had a shift of the affected side and three had autonomic symptoms not included in the current definition of the ICHD-II. Other 20 patients with atypical symptoms (bilateral or alternating sides) have been mentioned, but there are authors who do not regard them as HC, because the symptoms do not fit the currently accepted classification (ICHD-II)^{28,29}.

DIAGNOSTIC EVALUATION

The diagnosis is clinical. The therapeutic test with indomethacin is considered a diagnostic criterion according to ICHD-II⁵. The scheme known as "Indotest" proposed by Antonaci et al.²⁶ consists of an application of indomethacin 50 mg intramuscularly and recording the time to complete pain relief. In this case it is expected a response within 1-2 hours of application with the effect lasting for approximately 13 hours. Baldacci et al.

reported atypical cases in which the good response favored the diagnosis of HC⁹.

"Indotest" was not applied in patients described in this series due to the unavailability of intramuscular indomethacin in the institution. Responsiveness to this medicine was tested using the drug orally with doses ranging from 75 mg to 150 mg.day⁻¹. The largest case series published to date used up to 225 mg per day in the test with oral indomethacin²⁰. It is possible that the three patients in our series could have had a complete response if they had received doses as high as 300 mg per day^{20,24}.

Currently the ICHD-II criteria have been reviewed and quite often have generated controversy between different authors. Some argue that HC can also respond to other drugs, although less efficiently³⁰. Marmura et al.³¹ reported in a retrospective study that most patients with clinical phenotype indicating a presumed diagnosis of HC do not respond to indomethacin. Another point of contention concerns the fact that HC cannot be diagnosed in patients who never received indomethacin⁷.

HC, as a relatively new entity, is a condition that often requires the expertise of a specialist. Rossi et al. investigated the history of 25 patients with HC and similarly to this study all patients had received an incorrect diagnosis before attending the outpatient headache clinic. The median time to diagnosis was five years, 85% of patients had visited a doctor within five months of symptom onset and 36.0% underwent unnecessary invasive and ineffective treatments³².

Additional assessment of patients with suspected HC should include brain Magnetic Resonance Imaging (MRI) to rule out secondary causes²⁴.

TREATMENT

As in most diseases of low incidence, there are no prospective controlled studies providing unequivocal evidence about the effectiveness of therapeutic options. Clinical management is therefore empirical and guided by the analysis of retrospective case series, expert opinion and clinical experience.

Indomethacin is the standard drug for treating HC. The mechanisms involved in the optimal response to indomethacin are not known; however, we recommend a therapeutic test to all patients who present with chronic, continuous and unilateral headache⁴.

In most cases indomethacin (100-150 mg daily) is sufficient for pain remission. It is recommended to start with 25 mg three times per day with gradual increase of the dose until complete relief. Treatment failure should only be considered if the patient is not responsive to a daily dose of 300 mg²⁴.

After several weeks of an established effective dosage, the dose should be reduced until determination of the lowest dose capable of producing complete remission of pain. To prevent unwanted gastrointestinal side effects, concomitant prescription of gastric protectors such as proton pump inhibitors is recommended²⁰.

Indomethacin is classically contraindicated in patients with renal failure, gastric ulcers, and bleeding disorders. The risks

associated with long-term use include gastrointestinal ulcers and kidney disorders. The first patient with HC described by Sjaastad and Spierings was followed-up for 19 years and developed hemorrhagic gastric ulcer, requiring surgical treatment. The adverse effects of indomethacin are the major cause of noncompliance with treatment¹. In this study treatment discontinuation was seen due to undesired effects in 100% of cases. These effects are usually gastrointestinal and dose-dependent, which confirms the importance of seeking the lowest effective dose.

Pareja et al.³³ showed that over time 42% of patients were able to decrease up to 60% the indomethacin dose necessary to keep them free of pain. Regarding tolerability of long-term indomethacin, out of 12 patients with HC followed-up for periods ranging from 1 to 11 years, 23% had minimal side effects, mainly gastrointestinal, which were relieved with gastric protectors.

In another study Pareja et al.³⁴ evaluated the age of onset of side effects related to the chronic use of indomethacin and found a linear relationship between increasing age and the incidence of side effects. The continued use of indomethacin, as well as other anti-inflammatory drugs, is not recommended especially in patients with comorbidities. However, it is noteworthy that no other drug has proved so consistently effective for treating HC⁴.

Recently, gabapentin has proven to be a good option in the treatment of HC. Gabapentin is an anticonvulsant used in the adjuvant treatment of epilepsy, neuropathic pain and other types of headache such as hypoxia-induced headache and headache after spinal anesthesia. The mechanism by which gabapentin exerts its analgesic effect is unknown, but in animal models gabapentin prevented allodynia and hyperalgesia³⁵. Prophylactic treatment of HC was successful with gabapentin (1,800 mg.day⁻¹) in a patient who previously failed to respond to amitriptyline (75 mg.day⁻¹) and carbamazepine (900 mg.day⁻¹).

Another patient reported being free from pain only with the combination of low-dose of amitriptyline (25 mg.day⁻¹) and gabapentin (2,700mg.dia⁻¹). Spears³⁵ reported the effectiveness of gabapentin at a daily dose of 600-3,600 mg in 7 of 9 patients with HC who developed side effects with indomethacin. Four patients achieved remission of pain with 600-1,800 mg.day⁻¹, 1 of them was on concomitant use of topiramate. Three patients reported a 50%-80% reduction of pain, 1 patient reported a 10% reduction of pain, and no change in pain was observed in another patient.

Reports of 5 cases demonstrated the benefit of topiramate (100-200 mg.day⁻¹) in cases in which indomethacin was not tolerated or contraindicated. Two patients also had atypical manifestations³⁶. Additionally we report a case of pain remission with topiramate (50 mg.day⁻¹). This antiepileptic drug has been used in the preventive treatment of migraine, chronic tension-type headache, and hypnic headache. Its multiple mechanisms of action include blockade of voltage-dependent sodium channels, calcium channel inhibition, increased conductance of potassium channel, incremental chloride current

mediated by aminobutyric-acid, inhibition of glutamate-mediated neurotransmission, and inhibition of carbonic anhydrase.

The prophylactic effect of topiramate on different pain syndromes is still unclear³⁶. Prakash et al.³⁷ recently reported two cases of successful treatment with topiramate, whose patients were also intolerant to indomethacin. Some authors suggest a revision of the diagnostic criteria in order to see the response to indomethacin as an adjuvant but not essential to the diagnosis^{30,37}.

Amitriptyline was here described as effective in 6 of 9 patients with HC – 1 intolerant to indomethacin. It is a tricyclic antidepressant widely used in the prophylaxis of migraine, tension-type headache, and chronic daily headache. It modulates serotonin receptors, increases synaptic levels of noradrenaline, and enhances the action of endogenous opioid receptors³⁸.

Reports on benefits of amitriptyline in HC were not found in literature. In contrast, authors report 24 cases of treatment failure with this drug²⁰. Such disparity can be explained by possible association with more than one type of headache in the same patient. There are authors who after seeing the responsiveness to different classes of drugs advocate the possibility that HC is not an isolated clinical entity but a combination of two different pain syndromes^{18,39}. In this sense, it is believed that patients with HC and migraine, for example, may obtain pain remission with a tricyclic antidepressant, but need indomethacin in eventual relapses or exacerbations.

Peres et al.⁴⁰ described 6 cases of patients responsive to selective cyclooxygenase (COX-2). Pain remission occurred in 3 of 9 patients who received rofecoxib (50 mg.day⁻¹), and in 3 of 5 patients who received celecoxib 200-400 mg.2.day⁻¹. At these doses and continuous use, the relative protection of gastrointestinal COX-2 is questioned. In September 2004, rofecoxib was withdrawn from the market by the manufacturer due to adverse cardiovascular effects⁴¹.

Sjaastad et al.⁴² reported complete response to piroxicam beta-cyclodextrin, derived from piroxicam, at the dose of 20-40 mg.day⁻¹, in 4 of 6 patients studied.

Melatonin is an indolamine synthesized from tryptophan and its chemical structure is similar to that of indomethacin. Its anti-inflammatory and analgesic mechanism is still unknown, but it is presumed that melatonin may increase the release of endogenous beta-endorphins, and its anti-hyperalgesic effect seems to involve nitric oxide pathways and endogenous opioids⁴³. Some case reports described patients who responded to melatonin at a dose of 7-15 mg daily. In one patient, it was possible to halve the total dose of associated indomethacin; while in other three cases, melatonin alone was sufficient to achieve pain remission^{44,45}.

Melatonin may be used as an alternative in patients with contraindications to indomethacin, as well as in combination therapy in attempt to reduce the dose of indomethacin used.

The use of *botulinum* toxin type A did not proved fully effective in reducing autonomic symptoms⁴⁶. Carbamazepine and oxygen were ineffective in the treatment of HC. Sumatriptan was cited as an option in the abortive treatment in some case

reports, although normally this drug has no effect on exacerbations of HC⁴.

Burns et al.⁴⁷ suggest the efficacy of occipital nerve stimulation in patients with intolerance to indomethacin. During long-term follow-up, 4 of 6 patients reported substantial improvement (80%-95%), 1 reported 30% improvement, and one reported a worsening of pain by 20%. However, the authors question the results due to the possibility of placebo effect⁴⁷.

Other drugs were described as effective in isolated cases, such as verapamil, ibuprofen, naproxen, acetylsalicylic acid, paracetamol with caffeine, and valproic acid, however most of these drugs are considered ineffective in other cases of HC⁴. Table VI summarizes and presents suggestions for therapeutic management of HC.

Table VI – Treatment of Hemicrania Continua

Medication	Dose (mg.day ⁻¹)
Abortive/therapeutic test	
Indometacin	50-300
Prophylactic	
Gabapentin	600-3,600
Topiramate	100-200
Celecoxib	400-600
Melatonin	7-15
Piroxicam-beta-cyclodextrin	20-60
Amitriptylin	25-75

DIFFERENTIAL DIAGNOSIS

Most cases of HC are primary (idiopathic), but all patients with abnormal symptoms require imaging test (brain MRI)²⁶.

Generally, the strictly unilateral primary headaches that may be confounded with HC are: supra-orbital neuralgia, cervicogenic headache, strictly unilateral migraine, post-traumatic headache with autonomic features, unilateral tension-type headache, atypical facial pain, and temporomandibular joint disorders. Note that all of them are indomethacin resistant³.

Paroxysmal hemicrania, cluster headache, primary cough headache, primary headache associated with sexual activity, and primary thunderclap headache are indomethacin-responsive disorders²⁶. A detailed history helps to identify the triggering factor and diagnostic classification.

Patients with HC by secondary causes also may respond favorably to indomethacin. Therefore, some authors recommend performing brain MRI in all patients with HC diagnosis⁴⁸.

The diagnosis of HC may be impaired by excess of symptomatic drugs used by patients. In this situation, the differential diagnosis between HC and, for example, chronic migraine, may be difficult. A detailed clinical history is useful because it can reveal a pre-existing primary, continuous, and unilateral headache. In any case, the abuse of analgesic medication should be discontinued and, if pain persists, the therapeutic test should be performed with indomethacin^{3,39}.

CONCLUSION

HC is quite often misguided due to diagnostic errors. There are symptoms common to the trigeminal autonomic cephalgias, migraine, and hemicrania continua, often making the diagnosis complex²⁷.

In this context, patients are medicated, mainly by inexpert doctors, with drugs indicated for migraine or cluster headache treatment that is ineffective for HC. Many also undergo unnecessary procedures such as tooth extraction, ENT surgery, and even cervical spine surgery before receiving the correct diagnosis³².

Hemicrania continua must therefore be considered among the diagnoses of patients with continuous unilateral headache, with no change in neurological examination and additional tests, regardless the age of onset. This is a chronic condition that requires long-term preventive treatment.

Literature review suggests that indomethacin may not be a good choice for continuous use, particularly if those involved are elderly with comorbidities, due to the incidence of side effects; recent studies now indicate possible therapeutic alternatives. Ethical and epidemiological principals explain the lack of controlled clinical trials in the treatment of hemicrania continua.

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