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Headache Medicine

Proceedings of the 38th Headache Brazilian Congress (2024)

With great satisfaction, we publish the abstracts of the 154 studies selected for presentation at the 38th Brazilian Headache Congress, Foz de Iguaçu, August 15-17, 2024. These studies represent the highest level of scientific interest, demonstrating the exceptional standard our members of the Brazilian Headache Society are achieving in knowledge production and significant advancements in the field of Headache Medicine.

Marcelo M. Valença
President
Brazilian Headache Society

Headache Medicine

Summary

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Local anesthetic infiltration and its points of application in the treatment of nummular headache: case report

Caroline Knak

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction
Nummular headache is a rare condition, and it is often difficult to control with therapies used to manage pain. It is known that the use of local anesthetic is a possibility as prophylaxis, but, until now, there is no description of which points should be infiltrated in the affected region.
Objective
In this case report we describe, for the first time, a possible technique to be used in the application of local anesthetic in patients with nummular headache, in the painful area.
Case Report
A 73-year-old woman came for evaluation due to a headache that had started four months ago. The pain was acute, of strong intensity, located in the right parieto-occipital region, rounded in shape and measuring 1,9685 inches in diameter. The attacks were interspersed with asymptomatic periods, lasted an average of 5 minutes, and were described as a burning sensation and shock, followed by pre-syncope or even syncope after intense pain. During physical examination, the patient reported a burning sensation when touched in the area of pain (dysesthesia), without other changes. Laboratory tests, cerebral magnetic resonance imaging and intracranial arterial angiography were requested, all with results within normal limits. After attempts to use gabapentin and indomethacin, drugs not tolerated by the patient even in subdoses due to adverse effects, blockage of greater and lesser occipital nerves ipsilateral to the pain, associated with the application of bupivacaine without vasoconstrictor (0.5 ml/point) in the affected region were done. The technique used in the coin-shaped area was carried out using five infiltration points, one in the central region and the others distributed in the periphery. The patient reported having no headaches at the first reassessment (carried out 2 weeks after the procedure), and remained headache-free for the 6-month period during which she was monitored.
Conclusion
Local anesthetic infiltration should be considered in patients with nummular headache. The technique described above is easily applicable, has a lower cost, as well as low potential for side effects.

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Correlation between sleep bruxism and headaches evaluated by polysomnography

Wagner Hummig[1], José Stechman-Neto[2], Aline Xavier Ferraz[2], Rodolfo Jorge Fortes Kubiak[2], Carla Fabiane da Costa Zonta[1], Flávio Magno Gonçalves[2], Reynaldo Todescan Júnior[3]

[1]Institute of Neurology of Curitiba, Curitiba, Paraná, Brazil
[2]Tuiuti University of Paraná, Curitiba, Paraná, Brazil
[3]University of Manitoba, Winnipeg, Manitoba, Canada

Objective
This aims to investigate a potential correlation between sleep bruxism (SB) and patients complaining of primary headaches whose previous diagnose was polysomnography (PSG) with electrodes positioned in the masseter region.

Background
Sleep bruxism is an abnormal repetitive activity of masticatory muscles. It occurs during sleep for short or long periods, with or without dental contact. Several studies have deemed it as possible causative and/or aggravating factors of primary headaches.

Method
The sample consisted of observing 91 electronic records of patients (65 females and 26 males) diagnosed with some type of primary headache. The adopted criteria were those of the International Classification of Headache Disorders, 3rd edition (ICHD-3 Beta). All patients underwent polysomnography with electrodes on the masseters to assess the presence of sleep bruxism. Data were analyzed using Chi-square test and Student t test, with a confidence interval of 95%, adopting $p < 0.05$ as level of significance. The JASP software, version 0.17.2.1, was used for analyses.

Results
There were no statistically significant differences regarding the correlation between different types of primary headaches and the presence of sleep bruxism.

Conclusion
The results suggest that the presence of sleep bruxism identified by polysomnography does not point to a significantly high incidence of primary headaches compared to individuals in whom the absence of bruxism was confirmed by the same method.

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Potential antinociceptive effects of cannabinoid compounds on migraine-associated responses in an experimental model in female rats

Fernanda Mariano Ribeiro da Luz[1], Darciane Favero Baggio[1], Alexandre Kaup[2], Flavio Rezende da Costa[3], Juliana Geremias Chichorro[1]

[1]Federal University of Paraná, Curitiba, Paraná, Brazil
[2]Hospital Israelita Albert Einstein, Sao Paulo, Sao Paulo, Brazil
[3]Health Meds Laboratories, Rio de Janeiro, Rio de Janeiro, Brazil

Introduction
Migraine is a painful and debilitating neurological disorder characterized by attacks of throbbing headache, frequently associated with photo and phonofobia, as well as nausea and vomiting. Despite advances in the pharmacological treatment of migraine, it is estimated that half of the patients do not achieve satisfactory pain control, highlighting the need for novel therapeutic options. In this context, cannabinoid compounds, including cannabidiol (CBD), cannabigerol (CBG), and tetrahydrocannabinol (THC), have demonstrated a potential for migraine treatment.
Objective
To assess the efficacy of different combinations of cannabinoid compounds in an animal migraine model.
Methods
Adult female Wistar rats were used, and protocols were approved by CEUA-BIO/UFPR #1589. The CBD "plus minor cannabinoid traces" (CBC, CBN, and CBG), CBD/CBG 2:1 ratio, CBD/THC, and CBD/CBG 2:1 Ratio/THC (CBD 30 mg/kg; THC 0.3%) or vehicle were administered systemically via intraperitoneal injection. Thirty minutes later, the animals received an intraganglionar injection (i.g.) of saline or calcitonin gene-related peptide (CGRP, 0.1 nmol/10 µL) into the trigeminal ganglion to induce cutaneous allodynia, which was evaluated by application of von Frey filaments (0.04 – 8g) to the periorbital area, from 0.5 to 6 hours after CGRP injection. The same animals were tested in the open field 1 hour after saline or CGRP injection to assess locomotion and anxiety-like behavior. In addition, 24 hours after i.g injections, the same animals were exposed to bright light for 1 hour to reactivate cutaneous allodynia, which was assessed from 0.5 to 4 hours.
Results
In female rats, treatment with CBD "plus minors traces," CBD/THC and CBD/CBG 2:1 prevented the development of cutaneous allodynia induced by CGRP, but CBD/THC showed long-lasting effects (up to 3 hours). CBD/CBG 2:1/THC did not change significantly the mechanical threshold compared to the control group. CBD plus minors and CBD/THC, but not CBD/CBG 2:1 and CBD/CBG 2:1/THC, prevented the development of photosensitivity. Data from the open field test are being analyzed, and ongoing experiments in male rats will be included in the final presentation.
Conclusion
CBD plus minor cannabinoids and CBD/THC exhibited promising antinociceptive and anti-hyperalgesia effects in a pre-clinical model of migraine, which remains to be validated in the clinical setting.

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Real-world effectiveness after initiating fremanezumab treatment in Brazilian patients with episodic and chronic migraine

Alexandre Kaup[1], João Jose Freitas de Carvalho[2]

[1]Hospital Israelita Albert Einstein, Sao Paulo, Sao Paulo, Brazil
[2]Christus University Center, Fortaleza, Ceará, Brazil

Background

Migraine is a debilitating condition, estimated to affect 30 million people in Brazil. Prevention may be considered for both episodic (EM) and chronic (CM) migraine and represents a real challenge in patient management. Fremanezumab, a fully humanized monoclonal antibody, is a specific migraine treatment directed against CGRP ligand. Regulatory approval for this molecule in Brazil occurred in December 2019, becoming an option of treatment in our country. Given the relatively recent approval, studies and publications that address real-world data on the use of Fremanezumab are needed, which we will refer to in this study.

Methods

This is real-world, retrospective chart review study that assessed demographic and clinical aspects of 170 Fremanezumab treated patients. The safety of the drug was evaluated to all patients who received at least 1 Fremanezumab treatment, and the effectiveness for EM and CM patients that completed 12 weeks of treatment based in monthly headache days (MHD) pre- and post-Fremanezumab. Data was obtained from two tertiary neurology services, in São Paulo, southeast region, and Fortaleza, northeast region of Brazil, between 2021 and 2022. Inclusion criteria were a physician diagnosis of EM or CM, age ≥ 18 years at the time of first Fremanezumab initiation, ≥ 1 dose of Fremanezumab treatment; ≥ 1 follow-up visit since first initiation; and measurement of monthly headache days (MHD at initiation and after 12 weeks of medication use). Efficacy measures were considered to patients that presented ≥ 50% improvement, ≥ 75% improvement or ≥ 100% after 12 weeks in MHD after Fremanezumab treatment initiation.

Results

There were no differences between of the two centers population. Of the total sample, women represent 76.5%, and the mean age was 46.04 (±13.94) years. The average age of migraine onset was 15.7 (± 9.28) years, and the mean age when receiving the first Fremanezumab treatment was 45.08 (±14.11) years. The time of CM in years before initiating Fremanezumab was 8.87 (± 7.65) years. All this sample had the medication monthly. The improvement analyses considered 102/170 patients, 60% of the sample, who have completed the 12 weeks follow-up visit. Overall, 65% of the patients showed an improvement after this period of treatment. The mean number of MHD at the initiation of the treatment was 19.31, falling to 8.89 at the first month and 6.94 at the third month. When considering the 12 weeks follow-up visit 81.4% of the sample improved ≥ 50%, 35.3% improved ≥ 75%, and 2.9% presented a 100% resolution of MHD. Side effects observed with Fremanezumab use were none to 65% of patients, limited local pain in 30.3%, site injection erythema in 9.9%, flu-like symptoms, and intestinal constipation 0.7% each. From the total patients of this sample only 3 patients interrupted the treatment because of side effects: 1 with local erythema, 1 with flu-like symptoms, and 1 with intestinal constipation.

Conclusion

For this Brazilian sample of EM or CM patients Fremanezumab proved to be a very efficient, safety, and well tolerated option for migraine treatment. Real-world evidence studies are valid and useful tools to understand the behavior of patients in many life scenarios. Our findings reassure the pattern of response to Fremanezumab in everyday migraine treatment worldwide.

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Risk of suicide in individuals with headache - preliminary data from a Brazilian cohort

Fabiola Dach, Marcelo de Almeida Pinheiro, Eloisa Bettiol, Viviane Cunha Cardoso, Marco Antônio Barbieri

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction

A meta-analysis demonstrated the increased risk of suicidal ideation and attempts in patients with migraine and neck/back pain, which could be explained by suicidal thoughts and behaviors leading to a modification in the opioid system.

Objective

To verify the prevalence of suicide risk in patients with headaches. To verify whether there is an association between suicide risk and headache, and an association between suicide risk and the type of headache (episodic or chronic).

Methods

An analytical and descriptive study from a cohort of live births (1978/79) in Ribeirao Preto/S.P. The variables of interest were the presence and frequency of headaches in the last 3 months. The Brazilian version of the Mini International Neuropsychiatric Interview questionnaire was applied. Suicide risk is determined as low risk (1-5 points), moderate risk (6-9 points) and high risk (≥10 points).

Results

1775 individuals attended this interview, with an average age of 38.13±0.579, 52.3% of whom were female. Sixty-three percent (n=1113) reported having had a headache in the last 3 months, with 16.3% of these having chronic headaches. Suicide risk was observed in 13.52% of individuals in general, with low risk in 66.5%, moderate risk in 5.4%, and high risk in 28% of individuals. Among individuals with headaches, the risk of suicide was observed in 16.3%, with low risk in 63%, moderate risk in 5.5%, and high risk in 31.5% of individuals. The risk of suicide occurred in 13.9% of individuals with episodic headaches and in 28.2% of individuals with chronic headaches. The association between suicide risk and headache [$X2(1)= 19.254$, $p< 0.001$], and between suicide risk and chronic headache [$X2(1)= 22.771$, $p< 0.001$] were observed. Considering individuals with headaches and suicide risk, an association was observed between moderate and high suicide risks and chronic headaches [$X2(2)= 6.552$, $p< 0.038$].

Conclusion

The prevalence of suicide risk in individuals with headaches and in those with chronic headaches was significantly higher than in the general sample, demonstrating an association between headache, chronic headache, and suicide risk. Among those with headaches and suicide risk, the presence of chronic headaches was associated with moderate and high risk of suicide.

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Prevalence of allergic diseases in individuals with headache - preliminary data from a Brazilian cohort

Fabiola Dach, Marcelo de Almeida Pinheiro, Eloisa Bettiol, Viviane Cunha Cardoso, Marco Antônio Barbieri

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction

The first description of the relationship between headaches and allergies dates back to 1927 when Vaughn reported that 36% of patients with migraines had allergic triggers. Another study showed that 58% of individuals with migraines had a history of allergies, and more than 50% of them had a family history of allergic diseases. Since then, contradictory data has been published.

Objective

To analyze the prevalence of allergic diseases in individuals with headaches. Verify whether these diseases are associated with headaches, and whether there is an association between these diseases and episodic/chronic headaches.

Methods

An analytical and descriptive study from a cohort of live births (1978/79) in Ribeirao Preto/SP. The questions of interest were: 1. The presence and frequency of headache in the last 3 months; 2. The history of medical diagnosis of asthma/bronchitis, allergic rhinitis, skin allergy/eczema, and allergic conjunctivitis.

Results

1775 individuals attended this interview, with an average age of 38.13±0.579, 52.3% of whom were female. Sixty-three percent (n=1113) reported having had a headache in the last three months, with 16.3% of these having chronic headaches. Among patients with headaches, the diagnosis of asthma/bronchitis was reported by 17.80%, allergic rhinitis by 39.35%, skin allergy by 13.32%, and allergic conjunctivitis by 13.84%. There was an association between headache and allergic rhinitis [X2(2)= 27.262, p=<0.001] and headache and allergic conjunctivitis [X2(2)= 7.859, p= 0.017]. No association was observed between headache and asthma/bronchitis [2(1)= 1.008, p= 0.327] or skin allergy [X2(2)= 1.243, p= 0.514]. An association between the presence of episodic headache and a diagnosis of asthma/bronchitis [X2(1)= 4.411, p= 0.043] and a diagnosis of allergic rhinitis [X2(2)= 6.110, p= 0.047] was observed. There was no association between episodic/chronic headache and skin allergy [X2(2)= 0.636, p= 0.728} or conjunctivitis [X2(2)= 8.828, p=0.661].

Conclusion

In patients with headaches in the last 3 months, the prevalence of asthma/bronchitis was 17.80%, allergic rhinitis 39.35%, skin allergy 13.32%, and allergic conjunctivitis 13.84%. Patients with headaches had more diagnoses of allergic rhinitis and allergic conjunctivitis. Those with episodic headaches had more diagnoses of asthma/bronchitis and allergic rhinitis when compared to those with chronic headaches.

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Sphenopalatine and occipital nerve blocks for chronic migraine

João Vitor Mortari Lisboa, Alberto David Fadul Filho, Andresa Braga Baiak, Alexandre Teodoro Döhler Beck, Pedro André Kowacs, Larissa Souza Borowski Mendes, Ivo José Monteiro Marchioro

Federal University of Paraná, Curitiba, Paraná, Brazil

Introduction

Headache is one of the most prevalent conditions in medicine, with migraine being the most common representative of primary headaches. Although it doesn't lead to high mortality, it carries with it great potential for incapacitation The therapeutic arsenal includes various classes of drugs, but when these drugs prove ineffective or are not tolerated, there is a need for other forms of treatment. Evaluating the functional anatomy of the sensory systems related to headache, sensory afferents are not only the result of the occipital nerves, but also of the trigemino-vascular system, represented by the sphenopalatine ganglion. These structures present a functional convergence, carrying sensory afferents and contributing to the phenomenon of sensitization.This model served as the basis for developing a protocol to block these fundamental structures in the pathophysiology of headache.

Objective

To evaluate the therapeutic response to serial blockade of the sphenopalatine ganglion and the greater and lesser occipital nerves in patients with chronic migraine at the headache clinic at HC UFPR. Quantifying the response after the blocks, assessing intensity, frequency of pain crises and adverse effects.

Methods

Blockades of the sphenopalatine ganglion and the greater and lesser occipital nerves. The solution used contained 0.2% Ropivacaine with 45mcg Clonidine, 2ml of which was applied bilaterally to the region adjacent to each occipital nerve, and 12ml of which was slowly instilled in gauze inserted with forceps into the lower nasal meatus bilaterally. These procedures were to be carried out five times in series.

Results

The blocks were performed on 21 patients with chronic migraine at the headache clinic of the HC UFPR after consent. The majority were female, with a higher proportion aged between 48 and 62.

After a series of 5 blocks, satisfactory results were seen in more than 60% of the sample. Adverse effects were rare, with dizziness being the most frequently reported, leading to discontinuation in only 1 patient.

Conclusion

The results were promising in terms of pain control and a low level of adverse effects, suggesting that the procedure was safe. Further studies should be carried out to assess the effectiveness and level of sustained improvement over time.

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Analysis of performance of physical activities in patients with headache - data from a Brazilian cohort

Fabiola Dach, Marcelo de Almeida Pinheiro, Eloisa Bettiol, Viviane Cunha Cardoso, Marco Antônio Barbieri

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction

Physical exercise is recommended to improve the pain pattern. However, some headaches worsen or are triggered during physical exercise. Studies show that patients with headaches perform less physical exercise than those without headaches, but the direction of this relationship has yet to be discovered.

Objective

to verify whether there is a relationship between the presence of headache and the performance of light, moderate, and vigorous physical activities; whether there is a correlation between headache frequency and intensity and the frequency of light, moderate, and vigorous physical activities, and whether there is a difference in the frequencies of physical activities between those with episodic/chronic headaches.

Methods

An analytical and descriptive study from a cohort of live births (1978/79) in Ribeirao Preto/SP. The variables of interest were: Presence, frequency, and headache intensity in the last 3 months. Days of continuous walking, moderate activities (cycling lightly, swimming, dancing, doing light aerobics, volleyball) and vigorous activities (running, playing football, cycling quickly, playing basketball, carrying heavy weights), for ≥10 continuous minutes, in the last week.

Results

1775 individuals (average age of 38.13±0.579, 52.3% female) participated. 63% reported headache in the last 3 months (16.3% with chronic headache). The proportions of individuals with and without headaches among those who performed walking (50.90% versus 51.07%; p=0.945) or moderate physical activities (50.72% versus 46.71%; p=0.104) were no different. Among those who performed vigorous physical activities, there was a lower proportion of individuals with headache (23% versus 31.9%, p<0.001). There was no correlation between headache frequency and frequency of light (rs=0.026; p=0.387), moderate (rs=0.045; p=0.137), or vigorous physical activity (rs=0.138; p<0.001). There was no correlation between headache intensity and frequency of light (rs=0.025; p=0.411), moderate (rs=0.030; p=0.319), or vigorous physical activity (rs=-0.079; p=0.008). There was no difference in the frequency of light (p=0.226), moderate (p=0.342), or vigorous physical activity (p=0.112) between patients with episodic/chronic headache.

Conclusion

Fewer individuals with headaches were observed performing vigorous physical activities. No correlation was observed between headache frequency and intensity and frequency of physical activities. There was no difference in the frequency of physical activities between those with chronic or episodic headaches.

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Assessment of Blood Pressure in patients with headache – preliminary data from a Brazilian cohort

Fabiola Dach, Marcelo de Almeida Pinheiro, Eloisa Bettiol, Viviane Cunha Cardoso, Marco Antônio Barbieri

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction

There is controversy in the literature regarding the relationship between headaches and blood pressure (BP) levels. Studies indicate that patients with headaches have higher, lower or similar BP than those without headaches. Furthermore, headache is widely considered a symptom of elevated BP among patients and physicians.

Objective

To evaluate the blood pressure parameters of patients with headaches in a Brazilian cohort. The secondary objectives are to verify whether there is a correlation between headache intensity and mean BP and whether there are differences in these measurements between those with episodic and chronic headaches.

Methods

This is an analytical and descriptive study from a cohort of live births from June 1, 1978, to May 31, 1979 (n=6748) in Ribeirão Preto/SP. This collection was carried out between 2016 and 2017 using a semi-structured questionnaire. The averages of 3 measurements taken according to the Brazilian Arterial Hypertension Guidelines were considered for the BP variables.

Results

1775 individuals attended the fourth interview, with an average age of 38.13±0.579, of which 929 (52.3%) were female and an average BMI of 28.75±5.72. Sixty-three percent (n=1113) reported having had a headache in the last three months, with 16.3% (n=181) reporting having chronic headaches (15 or more days of pain per month). Regarding mean systolic blood pressure (SBP), there were no differences between those with headache (122.19±15.24) and those without headache (124.23±14.18), p=0.15. Regarding mean diastolic blood pressure (DBP), no differences were observed between the groups (with headache 78.09±11.43, without headache 78.39±10.22, p=0.59). A negative but negligible correlation existed between mean SBP (r=-0.093, p=0.002) and pain intensity. There was no correlation between mean DBP (-.036, p=0.229) and pain intensity. we compared those with chronic headache (n=181) with those with episodic headache (n=927), there were no differences in mean SBP (121.62±15.72 versus 122.23±15.04, p=0.61) and DBP (78.98±12.37 versus 77.87±11.19, p=0.293).

Conclusion

There were no differences in the mean BP of patients with headaches compared to those without. There were no differences in mean SBP and DBP between individuals with episodic and chronic headaches. Moreover, there was no correlation between SBP or DBP averages and pain intensity.

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Prevalence of pain in other topographies in individuals with headache - preliminary data from a Brazilian cohort

Fabiola Dach, Marcelo de Almeida Pinheiro, Eloisa Bettiol, Viviane Cunha Cardoso, Marco Antônio Barbieri

University of Sao Paulo, Sao Paulo, Sao Paulo, Brazil

Introduction

Studies show the existence of comorbidity between headaches and other painful conditions. Patients with headaches are twice as likely to report musculoskeletal pain than those without headaches. Another study showed that 83% of headache patients have neck pain, with high frequency and moderate intensity. The factors involved in the comorbidity between painful conditions are obesity, physical inactivity, anxiety, depression, stress, occupational factors, and genetic factors.

Objective

To verify the prevalence of pain in another topographies (PAT) in individuals with headache, whether there is an association between PAT and the presence/frequency (episodic/chronic) of headache, and to check if there is correlation between the frequencies of headache and PAT.

Methods

An analytical and descriptive study from a cohort of live births (1978/79) in Ribeirao Preto/SP. The variables of interest were: presence/frequency of headache in the last three months. PAT and the place of greatest pain considering the last three months. The regions were separated: cervical, dorsal, lumbar, upper limbs, lower limbs, abdomen, thorax and pelvis.

Results

1775 individuals attended this interviewed (average age:38.13±0.579, 52.3% female). Sixty three percent reported headache in the last 3 months (16.3% chronic headaches). Among patients with headaches, 51% had PAT. Among patients with headache and PAT, pain in the cervical region was observed in 12.1%, dorsal region in 8.7%, lumbar region in 37.4%, upper limbs in 8.7%, lower limbs in 24.6%, abdomen in 3.2%, chest in 0.9% and pelvis in 4.4%. There was an association between headache and PAT [X2(1)= 21.743, p= 0.001], with the cervical (82.9% versus 17.1%) and dorsal (79% versus 21%) regions being more prevalent among individuals with headache [X2(7)=17.778, p=0.013]. There was an association between PAT and chronic headache [X2(1)= 5.079, p= 0.024]. There was no correlation between the frequencies of headache and PAT (rs= 0.165, p< 0.001).

Conclusion

In individuals with headaches in the last three months, the prevalence of PAT was 51%. An association was observed between headaches and chronic headaches with PAT. Pain in the cervical and dorsal regions was significantly more prevalent in individuals with headaches. There was no correlation between the frequencies of headache and PAT.

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Burning mouth syndrome: concurrent use of trigeminal and sphenopalatine rhizotomy

Letícia Borges Lagoa[1], Geilson Cunha da Silva[2], Geisy de Andrade Lima[3], Pedro Lucas Borges Souza[4], Franklin Reis[5]

[1]Penápolis Educational Foudation, Penápolis, São Paulo, Brazil
[2]Federal Fluminense University, Niterói, Rio de Janeiro, Brazil
[3]Federal University of Amazonas, Manaus, Amazonas, Brazil
[4]Goiatuba University Center – UNICERRADO, Goiânia, Goiás, Brazil
[5]SOS Cardio Hospital, Florianópolis, Santa Catarina, Brazil

Introduction
Burning Mouth Syndrome (BMS) is neuropathic pain resulting from injury or pathology affecting the peripheral or central somatosensory system. Its symptoms include intraoral burning, and it is important to rule out other conditions with similar manifestations. This pain may be localized to the tongue or its tip and may be related to dysesthesia, taste dysfunction, and the sensation of dry mouth. It can be episodic or continuous with variable duration, typically resembling an electric shock in the former case and a burning sensation in the latter. It predominantly affects postmenopausal women, and studies suggest that sensory neuropathy of the small fibers of the trigeminal nerve - ophthalmic (V1), maxillary (V2) and mandibular (V3) - is implicated in BMS.

Objective
To demonstrate the effectiveness of treatment with trigeminal rhizotomy in the V2 and V3 territories combined with sphenopalatine ganglion block in reducing chronic neuropathic pain in the oral cavity.

Case Report
Female patient, 55 years old, presented with a history of burning pain in the tongue and oral mucosa for two years. The pain occurred daily, lasting approximately 6 to 8 hours, without significant improvement with any medication. Clinical examination revealed no changes in the oral cavity. The patient underwent trigeminal rhizotomy in the V2 and V3 territories and sphenopalatine ganglion block, resulting in a 70% improvement in pain and an improvement in quality of life, which was maintained during six months of follow-up.

Conclusion
The combination of trigeminal rhizotomy in the V2 and V3 territories concurrently with sphenopalatine ganglion block appears to be effective in reducing chronic neuropathic pain in the oral cavity. Once other diseases or conditions of the oral mucosa related to mouth pain have been excluded and BMS has been diagnosed, the implemented therapy proves to be an effective approach in treating these patients refractory to drug treatment.

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Prevalence of orofacial pain attributed to temporomandibular dysfunction in professional dancers from Curitiba

Milena Novelli de Oliveira, Milena Sampaio Kuczera, Júlia Silva Geminiani, Glória Ravazzi, Wagner Humming, Flávio Magno Goncalves, José Stechman-Neto

Tuiuti University of Paraná, Curitiba, Paraná, Brazil

Introduction

Orofacial pain is a debilitating condition that can often be associated with temporomandibular dysfunction (TMD), a disorder affecting the temporomandibular joint and the masticatory muscles. Professional dancers, due to intense physical demands, poor posture, and stress, may be particularly susceptible to developing TMD and consequently orofacial pain. This study aims to investigate the prevalence of orofacial pain attributed to TMD in professional dancers from Curitiba, with the goal of identifying the need for preventive and therapeutic interventions.

Methods

This cross-sectional study analyzed 44 professional dancers, all with more than two years of professional experience, from three renowned ballet schools in Curitiba, PR. Data were collected through structured interviews and clinical examinations using the DC/TMD. Additionally, postural habits, injury history, and stress levels of the dancers were assessed to identify potential risk factors associated with TMD.

Results

The average age of the dancers was 27.7 years, with an age range from 18 to 42 years. Of the 44 dancers evaluated, 72.2% (32 dancers) reported at least some sign and symptom of orofacial pain, manifesting primarily as tension headaches, pain in the masseter and temporal muscles, and difficulty chewing. A correlation was also observed between orofacial pain and poor postural habits, as well as high stress levels among the dancers.

Conclusion

The high prevalence of orofacial pain among professional dancers in Curitiba suggests a strong association with temporomandibular dysfunction. These findings highlight the need for the implementation of prevention and treatment programs targeted at this specific group of professionals. Interventions such as physiotherapy, postural adjustments, relaxation techniques, and specialized dental follow-up may be effective in reducing the incidence of orofacial pain and improving the quality of life and professional performance of dancers.

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Idiopathic intracranial hypertension in a patient with a history of migraine: a case report

Christian Gonçalves[1], Leonardo José Kuhm[1], Alan Henrique De Lazari[1], Kassia Beatriz Valério Saibert De Lazari[1]; Sara Pessoa de Oliveira[2]; Barbara Evelin Gonçalves Barboza[3]

[1]Student of the medicine course at the integrated University Center, Campo Mourao, Paraná, Brazil
[2]Neurologist, Professor at the integrated University Center, Campo Mourao, Paraná, Brazil
[3]Ophthalmologist, Professor at the integrated University Center, Campo Mourao, Paraná, Brazil

Introduction
Idiopathic intracranial hypertension (IIH) is a condition whose cause is not well understood, characterized by increased pressure within the skull without evidence of brain mass or hydrocephalus. It mainly affects women of childbearing age and is associated with obesity.
Objective: Emphasize the importance of early diagnosis of IIH and the use of appropriate treatments.
Case Report
44-year-old woman with a long history of migraines with visual aura since menarche, characterized by intense unilateral pulsatile headache, accompanied by photophobia, phonophobia, osmophobia and occasionally nausea with vomiting. In the last three months before the consultation, there was an increase in the frequency of attacks, with pain occurring three times a week. His personal history includes congenital Dumping syndrome, history of smoking (29 years/pack) and presbyopia, initial weight of 76kg. After an initial period of treatment with topiramate and nortriptyline, which was effective, the patient showed a significant reduction in seizures. However, in January 2022, she was referred by an ophthalmologist due to bilateral papilledema, presenting atypical neurological symptoms such as retrocular pain, amaurosis fugax and holocranial headache. The initially normal imaging tests led to a lumbar puncture, which revealed elevated CSF pressure (32.5 cm of water), diagnosing idiopathic intracranial hypertension (IIH). Treatment was started with acetazolamide, resulting in partial improvement of headache symptoms, but with side effects such as nausea and tingling. The patient presented with a recurrence of symptoms in March 2023, after a stressful period at work, requiring acute treatment with prednisone. Over time, with adjustments in therapy and frequent monitoring, there was complete regression of papillary edema and partial resolution of visual symptoms, and the visual field was not damaged. Current weight of 70kg.
Conclusion
This case highlights the challenges in diagnosing and managing IIH in patients with a prior history of migraine, emphasizing the need for a multidisciplinary and adaptive approach. Effective management required body weight control and medication adjustments to control neurological and ophthalmological symptoms leading to complete regression of papillary edema and the visual field was undamaged.

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Migraine with periocular neuropathic component: a case report

Leonardo José Kuhn[1], Alan Henrique De Lazari[1], Christian Gonçalves[1], Kassia Beatriz Valério Saibert De Lazari[1], Giovana Iora[1], Sara Pessoa de Oliveira[2], Barbara Evelin Gonçalves Barboza[3]

[1]Student of the medicine course at the integrated University Center, Campo Mourao, Paraná, Brazil
[2]Neurologist, Professor at the integrated University Center, Campo Mourao, Paraná, Brazil
[3]Ophthalmologist, Professor at the integrated University Center, Campo Mourao, Paraná, Brazil

Introduction
Chronic migraine affects around 2% of the world's population, being more common in women and significantly impacting quality of life and being more disabling than episodic attacks, generating annual expenses exceeding 20 billion dollars.
Objective
To present a case report of migraine with periocular neuropathic component.
Case Report
Woman, 43 years old, has suffered from migraines since the age of 11, presenting with a hemicranial, pulsatile headache of moderate intensity, associated with photophobia and phonophobia. Attacks fonofobia, lasting 3 days, worsen with movement and occur twice a month. During attacks, use dipyrone or sumatriptan 50 mg. However, what bothers her most is nonspecific and continuous right eye pain, about three times a week. The identified triggers are lack of sleep, stress and sun exposure. Not related to the menstrual period. Personal history includes endometriosis, myopia, astigmatism, keratoconus spots and Wolff-Parkinson-White syndrome, underwent surgery in childhood to ablate an anomalous beam. Currently, he has been using gabapentin 300 mg/night for 4 months. She has already used riboflavin and topiramate without significant improvement or adverse effects. In the initial assessment, he reported non-refreshing sleep, anxiety, irritability and constipation, and normal BMI. Duloxetine 30 mg was prescribed in the morning and magnesium chelate 300 mg at night, and she was referred to an ophthalmologist who began fitting her with corrective lenses. After 30 days of treatment, he observed a good response with adaptation to the medication and improvement in sleep, with only 4 days of pain in the last month. Currently, he continues to use Velija 30 mg in the morning, gabapentin 300 mg in the evening and biomagnesium 300 mg in the evening. It was decided to maintain medications and joint monitoring with the ophthalmologist.
Conclusion
The reduction in the frequency and intensity of migraine attacks, as well as the positive response to treatment, highlight the importance of a multidisciplinary and individualized approach in the management of this complex condition, where the correction of astigmatism was fundamental as a factor in improving the attacks, resulting in a significant improvement in the patient's quality of life.

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Effects of orofacial pain on lip muscle strength: comparison with pain-free individuals

Milena Novelli de Oliveira, Milena Sampaio Kuczera, Júlia da Silva Geminiani, Glória Ravazzi, Wagner Humming, Flávio Magno Goncalves, José Stechman-Neto

Tuiuti University of Paraná, Curitiba, Paraná, Brazil

Introduction
The lip is a fundamental anatomical structure, playing a crucial role in facial aesthetics, oral function, and expression. Despite its importance, there is a significant gap in scientific knowledge about the impact of orofacial pain in this region.
Objective
This study aims to compare lip strength between individuals diagnosed with orofacial pain and temporomandibular dysfunction (TMD) and healthy individuals.
Methodology
The sample consisted of 50 individuals of both sexes, with an average age of 47.7 years. They were divided into two groups: one group diagnosed with orofacial pain and TMD, and a control group of healthy individuals. Lip strength measurements were obtained using the Biofeedback Pró-Fono device (PLL Pró-Fono). Data normality was verified using the Shapiro-Wilk test. The Mann-Whitney U test was used to compare lip strength between the groups, adopting a significance level of $p<0.05$.
Results
The results indicated that the control group exhibited significantly greater lip strength compared to individuals with orofacial pain ($p=0.042$). This suggests that the presence of orofacial pain and TMD is associated with a reduction in lip strength.
Conclusion
Orofacial pain and TMD have a negative impact on lip strength, resulting in a significant reduction in this strength compared to individuals without orofacial pain. These findings highlight the importance of considering the assessment and treatment of lip strength in patients with orofacial pain and TMD, contributing to a more comprehensive approach in the rehabilitation of these patients.

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Boundaries of headache medicine, the Charles Bonnet Syndrome. report of two cases

Carlos Alberto Bordini, Davy Henrique de Sousa Pelliciari

Franca Municipal University Center, Franca, Sao Paulo, Brazil

Introduction

Two patients were referred to a tertiary headache center due to complex visual phenomena that might be related to migraine aura. Eventually, it turned out that they were Charles Bonnet syndrome (CBS) patients. The syndrome is characterized by vivid visual hallucinations in the absence of other psychiatric symptoms, often in patients with optical morphophysiological disorders. The pathophysiology of CBS remains uncertain, and the syndrome lacks robust diagnostic criteria. So far, reports on CBS are scarce in Brazilian neurological literature, leading to challenges in identification and diagnosis. The condition is primarily recognized through anamnesis and clinical examination.

Objective

To report two cases of CBS in order to draw the attention of headache specialists about this syndrome.

Case reports

The first case involves a 93-year-old male patient, retired, who reported experiencing vivid hallucinations sometimes of an old white car and sometimes a group of children. Despite the clarity of these visions, the patient remained aware that they weren't real. In the second case, a 70-year-old male farmer began experiencing hallucinations involving scratches, scribbles, letters, stones, and women in his visions.

Conclusion

Here two cases of CBS were report concern to a not so rare condition, but for sure very uncommon to headache specialists.

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Magnitude of the founder effect for migraine in exomes of the Mennonite population

Luana Carvalho dos Santos[1], Tainah Dorado de Oliveira[1], Eduardo Delabio Auer[1]; Fabiana Leão Lopes[2], Francis McMahon[2], Alan Shuldiner[3], Elcio Juliatto Piovesan, Angelica Beate Winter Boldt[1]

[1]Federal University of Paraná, Curitiba, Paraná, Brazil
[2]National Institute of Mental Health, Bethesda, Maryland, United States
[3]Regeneron Genetics Center, Sleepy Hollow, New York, United States

The Mennonite population has been genetically isolated for about 500 years since the Anabaptist movement. Due to political-religious conflicts, the population has experienced three significant reductions in size (bottleneck events), leading to increased inbreeding, a small number of couples contributing to the next generation (founder effect), and susceptibility to chronic diseases such as migraine. In this study, we screened 325 exomes of South Brazilian Mennonites (SBM: 131 from Curitiba - PR and 194 from Colônia Nova - RS) for variants previously associated with migraine in genome-wide association studies (GWAS database). Among 244 headache-associated variants, we found 9 in SBM. We further compared their frequencies with those of the non-Finnish European population (EURO, N=589,961), the Amish (N=456), and the Brazilian population (BR, N=1,171), using the gnomAD v4.1.0 and ABraOM databases, correcting p-values for multiple testing using the False Discovery Rate method and evaluating possible associations with gene expression using GTEx portal. The nine variants occur in the HJURP, ANAPC4, IRAG1, CHRM4, and AMN genes, with four occurring in the RNF213 gene. The frequencies of three polymorphisms differed between SBM vs. EURO (founder effect), eight between SBM and Amish (genetic drift effect), and seven between SBM and BR (possible epidemiological relevance). The only protective variant was a benign aminoacid substitution (p.Arg465Gln), associated with lower expression of the ANAPC4 gene in several brain regions. Three RNF213 variants form a susceptibility haplotype, found more frequently in SBM than in Amish and BR (p=0.045). The benign p.Ser2383Asn (rs9674961) variant is among them, being also associated with lower RNF213 expression in the frontal cortex (p=0,03). Mutations in this gene further cause progressive cerebral angiopathy in the Moyamoya syndrome. In conclusion, we observed a founder and genetic drift effect for headache-associated variants among the Mennonite population. Further studies are needed to validate these genes' actions and the potential impact of these variants on migraine development.

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Chronic migraine after catamenial pneumothorax: a case report of headache associated with extra-abdominal endometriosis

Jovana Gobbi Marchesi Ciriaco[1], Lucas Grobério Moulim de Moraes[2], Laíssa Fiorotti Albertino[3], Bianca Garcia Sardi[3], Brenda Comper[3], Beatriz Gomes da Fonseca[3], Breno Sousa Paiva[3], Carlos Eduardo de Nadai[3]

[1]Professor of neurology at the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil
[2]Neurology residente a the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil
[3]Medical students at the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil

Introduction
Endometriosis is a chronic condition characterized by the presence of endometrial tissue outside the uterus, which can result in chronic pelvic pain and infertility. Its pulmonary form is rare and manifests with chest pain, hemoptysis, pneumothorax, and catamenial hemothorax. Migraine is a neurological disorder characterized by intense headache attacks associated with nausea, vomiting, and photophobia, more frequent in women of reproductive age.Migraines are more common in women with endometriosis, probably due to central sensitization and amplification of the pain response due to inflammation and chronic pain from endometriosis.

Objective
To report an atypical case of endometriosis with catamenial pneumothorax in a patient whose menstrual migraine worsened and became chronic after the pulmonary condition.

Case reports
A 35-year-old woman started having weekly episodes of headache and worsening related to the menstrual cycle. She suddenly presented with dyspnea and chest pain during her menstrual cycle, which progressed to pneumothorax, requiring two surgeries. Biopsy of the right upper lung lobe identified subpleural emphysema which, along with the clinical presentation and pelvic MRI, was presumptively diagnosed as catamenial pneumothorax. After the pneumothorax, the headache became daily, right temporo-occipital, intense (subjective pain scale 9/10), pulsating, radiating to the right hemiface, with intra and extracranial allodynia, aura with nausea, blurred vision, scotomas, photophobia and phonophobia. Post-crisis, mood swings and hyporexia. Dipyrone, sumatriptan and tromethamine do not provide relief. She denies consuming foods that trigger migraines. Currently, at 48 years, she is in the menopause and infertile.

Conclusion
Endometriosis-related migraine usually occurs during the menstrual period and tends to decrease in climacteric due to hormonal decline. In this case, however, the headaches worsened after menopause, suggesting anomalous foci of endometriosis, delaying the climacteric. Thoracic endometriosis is a rare presentation that manifests with right shoulder pain and hemoptysis during the menstrual period, consistent with this patient's presumptive diagnosis of deep thoracic endometriosis. Biopsy is a limited option as it may not detect endometrial tissue depending on the time of the menstrual cycle at which it is performed. The persistence of hormonal stimulation induced by endometriosis acts as a trigger for migraines, aggravated in the climacteric.

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Management of severe intracranial hypertension in a patient with cerebral venous thrombosis

Ana Carolina Montouro Storarri, Annelise Akemi Higa Lee, Renan Domingues

Neurology Department, Hospital Samaritano Paulista, Sao Paulo, Sao Paulo, Brazil

Introduction

Intracranial hypertension is a common complication of cerebral venous thrombosis. In the literature, recommendations regarding the management of intracranial hypertension in cerebral venous thrombosis are scarce due to the lack of controlled studies. The use of acetazolamide, corticosteroids, shunt and lumbar puncture have already been described. The shunt modalities most described in the literature are external ventricular, ventriculoperitoneal, ventriculoatrial and ventriculojugular shunts. There are few descriptions of lumboperitoneal shunts in the literature.

Goal

Our aimed to describe the case of management of intracranial hypertension secondary to cerebral venous thrombosis with lumboperitoneal shunt.

Case reports

We report the case of acute management of intracranial hypertension with lumboperitoneal shunt in a young, obese, smoker female patient, who presented with an acute case of intracranial hypertension, with headache, nausea, vomiting, diplopia, papilledema and severe bilateral visual loss (counting fingers less than 1 meter) secondary to extensive venous thrombosis involving the right sigmoid sinus and internal jugular vein.

Upon admission, the patient underwent neuroimaging with study of intracranial vessels (magnetic resonance imaging and magnetic resonance venography) in addition to a diagnostic lumbar puncture – the latter showing an opening pressure greater than 100 cm H2O.

The patient received acetazolamide 1000mg every 6 hours until a lumboperitoneal shunt was performed for the acute treatment of intracranial hypertension, followed by the introduction of anticoagulation with enoxaparin.

He presented progressive improvement in his headache and visual symptoms throughout the hospitalization period. Acetazolamide was reduced and discontinued due to mild metabolic acidosis. She was discharged with vitamin K antagonist and was reevaluated after 18 days, without papilledema and with improvement in visual function.

Discussion

Our patient underwent lumboperitoneal shunt to manage severe intracranial hypertension secondary to cerebral venous thrombosis with good clinical outcome – improvement in papilledema, headache and visual function. More studies are needed to evaluate this shunt modality in the management of intracranial hypertension in these patients.

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Identification of food triggers associated with migraine characteristics

Larissa Polverini Boeing[1], Giulia Eloah de Pádua Ribeiro[1], Regina Célia Poli Frederico[2], Carlos Eduardo Coral de Oliveira[2], Edna Maria Vissoci Reiche[2], Valéria Aparecida Bello[2], Adriano Torres Antonucci[3], Aline Vitali da Silva[2]

[1]Graduate of Medicine, Pontifícia Universidade Católica do Paraná Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.
[2]Professor, PhD, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.
[3]Professor, MSc, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.

Introduction
Food triggers are frequently reported by individuals with migraine; however, their clinical implications are still poorly understood.
Objective
To investigate the association between migraine characteristics and specific food triggers.
Methods
This cross-sectional study included individuals with migraine who reported at least one food as a migraine trigger, seen in an academic outpatient clinic in Londrina-PR, Brazil. Demographic, anthropometric, and clinical information were collected. Data on migraine classification, medication overuse, prophylactic treatment, and presence of osmophobia were recorded. Participants also completed validated self-administered questionnaires on disability, migraine impact, allodynia, anxiety, and depression. An exploratory analysis was conducted using Chi-square or Fisher's Exact tests as appropriate.
Results
A total of 524 individuals with migraine were evaluated, of whom 293 reported at least one food trigger. The majority of these participants were female (87.0%) with a median age of 33 years. The most frequently reported triggers were alcohol (44.0%), followed by chocolate (42.0%) and cheese (27.7%). Chocolate was associated with episodic migraine compared to chronic migraine (49.0% vs. 34.1%; p=0.010). Cheese was associated with females (30.2% vs. 10.5%; p=0.011), osmophobia (31.6% vs. 13.8%; p=0.005), and prodrome perception (30.9% vs. 17.8%; p=0.030). Excessive carbohydrates were associated with females (30.2% vs. 10.5%; p=0.011) and depression (41.5% vs. 25.7%; p=0.041). Monosodium glutamate was associated with the presence of osmophobia (9.2% vs. 1.5%; p=0.035) and abdominal obesity (13.4% vs. 5.1%; p=0.024). Citrus fruits were associated with migraine without aura (16.0% vs. 7.3%; p=0.022) and age ≥50 years (25.0% vs. 9.4%; p=0.002). Lastly, artificial sweeteners were associated with migraine without aura (p=0.029), and processed meats with osmophobia (p=0.038). There was no association of specific food triggers with migraine disability, impact, allodynia, anxiety, prophylactic medication, or medication overuse.
Results
A total of 524 individuals with migraine were evaluated, of whom 293 reported at least one food trigger. The majority of these participants were female (87.0%) with a median age of 33 years. The most frequently reported triggers were alcohol (44.0%), followed by chocolate (42.0%) and cheese (27.7%). Chocolate was associated with episodic migraine compared to chronic migraine (49.0% vs. 34.1%; p=0.010). Cheese was associated with females (30.2% vs. 10.5%; p=0.011), osmophobia (31.6% vs. 13.8%; p=0.005), and prodrome perception (30.9% vs. 17.8%; p=0.030). Excessive carbohydrates were associated with females (30.2% vs. 10.5%; p=0.011) and depression (41.5% vs. 25.7%; p=0.041). Monosodium glutamate was associated with the presence of osmophobia (9.2% vs. 1.5%; p=0.035) and abdominal obesity (13.4% vs. 5.1%; p=0.024). Citrus fruits were associated with migraine without aura (16.0% vs. 7.3%; p=0.022) and age ≥50 years (25.0% vs. 9.4%; p=0.002). Lastly, artificial sweeteners were associated with migraine without aura (p=0.029), and processed meats with osmophobia (p=0.038). There was no association of specific food triggers with migraine disability, impact, allodynia, anxiety, prophylactic medication, or medication overuse.
Conclusion
There is an association between migraine characteristics and the type of food perceived by patients as a trigger for migraine attacks.

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The a novel arthrocentesis technique with vacuum-assisted irrigation for tmj disc displacement without reduction: a case report: a novel arthrocentesis technique with vacuum-assisted irrigation

Eduardo Grossmann[1], Rodrigo Poluha[2]

[1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul
[2] Universidade Estadual de Maringá, Maringá, Paraná

Introduction
Arthrocentesis is an effective treatment to reduce or eliminate pain, increase maximal interincisal distance, and eliminate joint effusion in patients with disc displacement without reduction. This study aims to expose and discuss a new technique proposal of temporomandibular joint arthrocentesis applied in the treatment of a single case of disc displacement without reduction.

Objective
To present and evaluate the outcomes of a new arthrocentesis technique for the management of temporomandibular joint (TMJ) disc displacement without reduction.

Case Report
An 18-year-old female patient sought treatment due to joint pain and mouth opening limitation. The maximal interincisal distance was 30.28 mm. Magnetic resonance imaging confirmed the diagnosis of disc displacement without reduction with signs of joint effusion in the right TMJ. TMJ arthrocentesis was performed under selective sensory nerve block of the auriculotemporal, masseteric, and posterior deep temporal nerves. Two needles were inserted into the upper compartment of the TMJ. In the second needle, a transparent catheter was connected to a vacuum pump. Clinically, after the arthrocentesis, the maximal interincisal distance increased to 46.25 mm, and the patient reported no more pain. After six months, a magnetic resonance imaging was performed to observe the results, and there were no more signs of joint effusion.

Conclusion
TMJ arthrocentesis was an effective treatment for this patient with disc displacement without reduction. The aspect of this technique that is particularly relevant for clinical practice was the connection of a transparent catheter to a vacuum pump. This allowed the visualization of the solution fluidity and guided the flow of the solution used for joint washing, optimizing the irrigation. However, new studies are necessary to compare different protocols of irrigation with and without the associated use of a vacuum pump.

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The comparative effectiveness of double-puncture versus single-puncture type 2 arthrocentesis in long-term management of TMJ disc displacement without reduction

Eduardo Grossmann[1], Rodrigo Poluha[2]

[1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul
[2]Universidade Estadual de Maringá, Maringá, Paraná

Introduction
Temporomandibular joint (TMJ) disc displacement without reduction (DDWOR) is a prevalent condition causing significant pain and functional impairment. Arthrocentesis is a minimally invasive procedure frequently employed to manage this condition. This study aims to compare the clinical effectiveness of conventional double-puncture versus single-puncture type 2 arthrocentesis for the management of TMJ DDWOR after 3 years of follow-up.

Objective
To evaluate and compare the long-term outcomes of TMJ arthrocentesis using conventional double-puncture versus single-puncture type 2 techniques in patients with DDWOR.

Methods
A total of 26 patients diagnosed with DDWOR were randomly and blindly allocated into two treatment groups (n = 13 each). Group 1 underwent conventional double-puncture arthrocentesis, while Group 2 received single-puncture type 2 arthrocentesis. Data on gender, side of painful joint complaint, age (years), duration of joint pain (months), maximum interincisal distance (MID, mm), and pain intensity (self-reported using a 0–10 visual analog scale [VAS]) were collected. VAS scores and MID were measured before (baseline) and 3 years after (final) the arthrocentesis.

Results
Twenty-three patients completed the study (Group 1, n = 11; Group 2, n = 12). Both techniques resulted in significantly reduced VAS scores and increased MID ($P = .001$) after the 3 years of follow-up. However, there were no statistically significant differences between the two techniques ($P > 0.05$).

Conclusion
The findings indicate that both conventional double-puncture and single-puncture type 2 arthrocentesis are effective in reducing pain (as measured by VAS scores) and improving mouth opening (as measured by MID) in patients with TMJ DDWOR. Despite the lack of significant differences between the two techniques, both methods provided substantial clinical benefits over the 3-year follow-up period. This suggests that either technique can be successfully utilized for the long-term management of TMJ DDWOR, offering clinicians flexibility in treatment choices based on patient needs and clinical circumstances.

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Case report: Miller Fisher Syndrome associated with systemic lupus erythematosus activity

Caique Oliveira, Maiara Wiesentainer, Paulla Alflen, Karla Bisinotto, Douglas Corte

University Hospital of Western Paraná, Cascavel, Paraná, Brazil

Introduction

Miller Fisher Syndrome (MFS) is characterized by the classic triad of ophthalmoplegia, ataxia, and areflexia, representing a rare variant of Guillain-Barré Syndrome (GBS). Systemic lupus erythematosus (SLE) is a complex autoimmune disease that can affect multiple systems, including the nervous system. The coexistence of MFS and SLE is rare, posing significant diagnostic and therapeutical challenges.

Objective

To describe a case of MFS associated with SLE activity.

Case Report

A 33-year-old Caucasian woman diagnosed with SLE since 2019, with irregular treatment, was referred to University Hospital for investigation of ascending progressive muscle weakness without evidence of prior infections, occurring concurrently with SLE activity. Neurological examination revealed flaccid tetraparesis associated with right ophthalmoparesis, horizontal nystagmus, bilateral photoreactive mydriasis, trunk ataxia, and global hyporeflexia. Cerebrospinal fluid (CSF) analysis showed albuminocytological dissociation (protein 85 mg/dL and cells 6/mm^3). Cranial computed tomography and magnetic resonance imaging (brain and cervical spine) did not reveal acute lesions. She underwent a 5-day course of Intravenous Immunoglobulin (IVIG) and experienced complete recovery of neurological symptoms after two weeks.

Conclusion

This case highlights the rare coexistence of MFS during SLE activity, emphasizing complete remission of neurological symptoms following the early intervention with Intravenous Immunoglobulin (IVIG).

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Lifestyle factors in the evolution of cluster headache to fibromyalgia: a case report

Crislaine Freitas Petla Silva[1], Marcelo Rezende YoungBlood[1], Maria Ivone Oliveira Dantas[2], Suellen Abib[3], Narel Moita Carneiro Nogueira Falcão[4]

[1]Universidade Estadual de Ponta Grossa, Ponta Grossa, Parana
[2]Programa em Pós Graduação em Ciências Fisiológicas, Universidade Federal de Sergipe, Sao Cristovao, Sergipe, Brasil
[3]Universidade la Sapienza, Roma, Itália
[4]Universidade Estadual do Piauí, Teresina, Piauí

Introduction

Cluster headache is considered a male-dominated disorder, but female patients may display a more severe phenotype, with a greater extent diagnosed with the chronic cluster headache subtype and longer bouts compared with male participants.

The comorbidity of cluster headache, migraine and fibromyalgia does not seem to be infrequent and substantially increases the psychosocial burden and decreases overall quality of life of patients.

Objective

To promote reflections on possible lifestyle factors involved in the chronification of pain, specifically chronic headache and fibromyalgia.

Case Report

E.C.U.M, 58 years old, female, from Castro, Paraná, Brazil, former housekeeper, catholic, married. In April 2015, started severe, incapacitating headache located in the left supraorbital and temporal region, lasting four to five days, associated with conjunctival injection, ptosis, and ipsilateral eyelid edema. Comorbidities included systemic arterial hypertension and migraine without aura for 20 years, which had been controlled for the last 5 years. Former smoker since 35, denied alcohol consumption, sedentary, had non-restorative sleep, insomnia and regular diet. Complementary exams showed no significant alterations. Was diagnosed with probable cluster headache.

Patient remained under outpatient follow-up without pain remission despite several therapeutic attempts. Lifestyle modifications were advised but not adhered to. Continued non-restorative sleep and depressive/anxious symptoms. Progressed to chronic cluster headache and was diagnosed with fibromyalgia in September 2021, with Widespread Pain Index of 19 and Severity Symptoms Scale of 11.

The central sensitization process in these nociplastic pain syndromes explain part of evolving and generalization of pain, but lifestyle choices and systemic chronic inflammation (SCI) may offer additional explanations. SCI is a state of low-grade, persistent, non-infective inflammation and it has been associated with many chronic non-communicable diseases including chronic pain. Recent research has revealed that certain social, environmental and lifestyle factors can promote SCI.

Conclusion

Unhealthy lifestyle factors like smoking, alcohol overuse, sleep disturbances, psychological stress and high BMI seems to be more prevalent among patients with chronic pain. As these factors may contribute to SCI and central sensitization, it is key to inform patients early about the possible risks of their lifestyle choices.

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Predictors of fast visual recovery in idiopathic intracranial hypertension: a cohort study

Ana Carolina Montouro Storarri, Annelise Akemi Higa Lee, Bruno Pissolati Mattos Gonzaga, Luis Armando Sawada, Beatriz Marques dos Santos, Lorrane Campidelli Arthuzo, Thassia Cavalcante de Oliveira Moraes Marques, Renan Barros Domingues

Irmandade Santa Casa de Misericórdia de Sao Paulo, Sao Paulo, Brazil

Introduction

Idiopathic intracranial hypertension (IIH) is characterized by increased intracranial pressure without a discernible cause, often leading to visual impairment and papilledema. Understanding the factors influencing visual outcomes in IIH patients is crucial for improving management strategies. This study aimed to identify predictors of satisfactory visual outcome (SATISF) defined as the resolution of reduced visual acuity and/or disappearance of papilledema.

Objective

To evaluate the factors associated with satisfactory visual outcomes in female patients with IIH.

Methods

This retrospective cohort study included female patients diagnosed with IIH. The potential predictors of a satisfactory visual outcome evaluated were age, initial body mass index (BMI), cerebrospinal fluid (CSF) opening pressure (Pi), duration of symptoms, and the need to discontinue acetazolamide. Visual outcomes were categorized as SATISF or non-satisfactory (NAOSATISF). Independent sample t-tests were used for comparing means, and chi-square tests were employed for comparing proportions. The average interval between the first and second visual assessments was 55.4±48.4 days.

Results

The study involved the following comparative results:

- Age: NAOSATISF 32.2±12 years, SATISF 35.9±18.8 years, P=0.3
- BMI: NAOSATISF 33.4±4.3, SATISF 33.7±4.3, P=0.8
- Pi: NAOSATISF 41.7±12.5 cmH2O, SATISF 39.3±13.2 cmH2O, P=0.5
- Duration of symptoms: NAOSATISF 352.25±566.5 days, SATISF 317.2±815.7 days, P=0.9
- Acetazolamide discontinuation: NAOSATISF 4.7%, SATISF 15.7%, P=0.24

None of the evaluated factors showed a statistically significant association with satisfactory visual outcomes.

Conclusion

This study did not identify any significant predictors of satisfactory visual outcomes in IIH patients. The results suggest that age, BMI, CSF opening pressure, duration of symptoms, and the need for acetazolamide discontinuation do not significantly impact visual recovery. Further research is needed to better understand the factors contributing to the rapid neuro-ophthalmological recovery in IIH patients.

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Magnetic resonance imaging abnormalities in idiopathic intracranial hypertension: a study of 40 female patients

Ana Carolina Montouro Storarri, Annelise Akemi Higa Lee, Bruno Pissolati Mattos Gonzaga, Lorrane Campidelli Arthuzo, Luis Armando Sawada, Beatriz Marques dos Santos, Thassia Cavalcante de Oliveira Moraes Marques, Renan Barros Domingues

Irmandade Santa Casa de Misericórdia de Sao Paulo, Sao Paulo, Brazil

Introduction

Idiopathic intracranial hypertension (IIH) is a condition characterized by increased intracranial pressure with no detectable cause. MRI is an importat tool in diagnosing and understanding IIH, providing insights into the anatomical changes associated with this condition. This study aims to describe the MRI findings in a cohort of 40 female patients diagnosed with IIH.

Objective

To evaluate the frequency and type of abnormalities detected on MRI in female patients with IIH.

Methods

We conducted a retrospective analysis of MRI findings in 40 female patients diagnosed with IIH. The average age of the patients was 33.9 years (standard deviation of 11.5 years). The MRI abnormalities evaluated included sella turcica deformities, optic nerve abnormalities (including optic nerve tortuosity, distended optic nerve sheath, and optic nerve head protrusion), globe flattening, and transverse sinus stenosis. The data were analyzed to determine the prevalence of each abnormality. All the patients were evaluated at the Headache Outpatient Clinic of Santa Casa de Misericórdia de São Paulo.

Results

The analysis revealed the following abnormalities:

- Sella turcica deformities in 14 patients (35%)
- Optic nerve abnormalities in 35 patients (87.5%)
- Globe flattening in 8 patients (20%)
- Transverse sinus stenosis in 14 patients (35%)

Conclusion

Our study demonstrates that optic nerve abnormalities are the most frequent MRI finding in female patients with IIH, observed in 87.5% of cases. This is a higher frequency compared to sella turcica deformities, which were present in 35% of the patients. These findings differ from other series in the literature, where sella turcica abnormalities are often reported as more common. This highlights the variability in anatomical manifestations of IIH and underscores the importance of comprehensive MRI evaluation in these patients.

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Correlations between retinal and choroidal microvascular changes and disease duration, severity and cognitive impairment in episodic migraine patients

Lígia Barros Oliveira, Mauro Eduardo Jurno, Leonardo Provetti Cunha, Thiago Cunha Vale

Hospital Foundation of the State of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil

Introduction

Migraine is recognized as a neurovascular disorder resulting from dysfunction of hypothalamic and brain stem nuclei, with consequent changes in cortical excitability. The retina can be considered an extension of the central nervous system. Retinal and choroidal thickness, measured by optical coherence tomography (OCT), may reflect neurovascular changes in migraine.

Objective

To evaluate the relationship between the changes identified in OCT and optical coherence tomography angiography (OCTA) in patients with migraine with aura (MA) and migraine without aura (MWA) and the duration and severity of the disease using the Headache Impact Test-6 (HIT-6) questionnaire and cognitive assessment through the Montreal Cognitive Assessment (MoCA).

Methods

In this cross-sectional study, 32 eyes of 16 patients with MA and 30 eyes of 15 patients with MWA were compared with 32 eyes of 16 healthy age-matched controls. Measurements of the thickness of the peripapillary retinal nerve fiber layer (pRNFL), total macula, ganglion cell complex (GCC), and choroidal thickness were evaluated by OCT as well as the superficial vascular density of the macula by OCTA.

Results

Statistically significant differences between the groups in relation to the layers analyzed by OCT and OCTA of the macula were not found. Lower choroidal thickness values in the fovea and in the superior internal, superior external, external temporal and average thickness regions were found in individuals with migraine when compared to the control group ($p < 0.05$). The cognitive assessment of patients in relation to controls did not determine statistically significant differences. Statistically significant negative correlations were found between disease duration and total macular thickness ($p = 0.037$; in the average thickness of the MWA group), ganglion cell complex (GCC) thickness ($p = 0.017$; in the average thickness of the MWA group) and choroidal thickness ($p = 0.039$; in the average thickness of the MWA group), as well as the HIT-6 score and the peripapillary retinal nerve fiber layer (pRNFL) thickness ($p = 0.027$; in the average thickness of the MWA group).

Conclusion

Compared with controls, individuals with migraine showed a significant reduction in choroidal thickness. Our results showed that the longer the disease duration was, the thinner the total macula, GCC and choroidal thickness were. Additionally, the thickness of the pRNFL layer showed an inverse correlation with the disability caused by migraine. The results of this study contribute to the understanding of the vascular changes in migraine.

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Provision of pharmacological treatment for migraine in a health region of a Brazilian southern state: a comparative analysis

Paola Regina Mombach Lazzaron, Cesar Augusto da Silva, Giovanna Lourenço Cavagnoli, Danielle Rodrigues da Silva

Federal University of Paraná, Curitiba, Paraná, Brazil

Introduction

Migraine affects 15% of the Brazilian population and is a frequent reason for seeking medical care. Proper management requires specific pharmacological therapy. Therefore, analyzing the provision of adequate medications for migraine within the Sistema Único de Saúde (SUS) is crucial. Medication provision within SUS follows guidance from the National List of Essential Medicines (RENAME) and local adaptation through the Municipal List of Essential Medicines (REMUME).

Objective

To diagnose the availability of pharmacological prophylactic and abortive treatments for migraine within the SUS in a health region in the southern Brazilian state of Paraná, through analyzing the REMUMEs of each municipality.

Methods

A documentary research was carried out, consulting the REMUMEs of the municipalities in the 20th Regional Health Division of Paraná to identify the availability of medications for migraine treatment. Medications listed by UpToDate® with evidence levels 1A, 1B, 2A, 2B, and 2C were used as comparison parameters. An average availability index was calculated for prophylactic and abortive treatment medications.

Results

The average availability index for recommended medications was 76.85% for first-line prophylactic treatment, 40.55% for second-line prophylactic treatment, and 27.77% for medications intended for abortive treatment. Among the 18 municipalities analyzed, 4 (22%) provided topiramate, an important prophylactic medication for migraines. On average, 3.4 first-line preventive treatment medications are available per municipality, highlighting tricyclic antidepressants and beta-blockers. Second-line medications have greater availability, notably anticonvulsants (83%). For abortive treatment of migraine crises, each municipality provides an average of 7.4 medications, especially analgesics and non-steroidal anti-inflammatory drugs (67.66%), while classes with high efficacy and safety in migraine treatment, such as triptans, CGRP (Calcitonin Gene-Related Peptide) antagonists, and serotonin receptor agonists, are not available in any of the surveyed municipalities.

Conclusion

Numerous medication combinations are publicly available for the treatment of migraines in this health region. However, some first-line treatment drugs, particularly those with specific pharmacodynamics for migraines, are not widely accessible. These gaps require increased public health investment to ensure medication availability, crucial to provide effective, individualized, and safe treatment for migraines.

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Expression of the CGRP gene (calca) and its influence on the clinical phenotypes of migraine

Raphael Carvalho Lopes[1], Guilherme Aliano Gâmbaro[1], Aline Vitali da Silva[2], Valéria Aparecida Bello[2], Edna Maria Vissoci Reiche[2], Carlos Eduardo Coral de Oliveira[2], Regina Célia Poli- Frederico[2]

[1]Graduate of Medicine, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.
[2]Professor, PhD, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.

Background
Migraine is a disabling primary headache characterized by pulsatile and recurrent unilateral pain, whose pathophysiological mechanism involves the activation of the trigeminovascular system by calcitonin gene-related peptide (CGRP). The expression of the CGRP (CALCA) gene is influenced by epigenetic factors and genetic variation, playing a crucial role in promoting vasodilation of meningeal vessels and the release of inflammatory factors.

Objective
To evaluate the expression of mRNA transcripts from the CGRP gene in participants with and without migraine, as well as its association with clinical phenotypes of migraine.

Materials and Methods
This case-control study comprised 45 participants, including 31 migraine patients and 14 healthy controls, seen at the academic outpatient clinic of PUC-PR, Londrina-PR, Brazil. Clinical, demographic, and anthropometric data were collected. Participants also completed validated questionnaires on disability (MIDAS), migraine impact (HIT-6), and the presence of allodynia (ASC-12). For molecular analysis, RNA was extracted from peripheral blood, followed by cDNA synthesis using 1.5 µg of total RNA. Quantitative real-time polymerase chain reaction (RT--qPCR) was performed with SYBR Green and 200 nM of each primer for the two specific mRNA targets and normalized with the 18S ribosomal RNA as the reference gene. The relative expression of CGRP was evaluated using the $2^{-\Delta\Delta}$Ct method.

Results
The migraine and control groups were comparable in terms of sex, age, ethnicity, and BMI ($p>0.05$). Among migraine patients, 51.6% had the episodic form and 67.7% presented with aura. The gene transcripts of the CGRP gene was identified in the peripheral blood leukocytes of 3/14 patients (21.4%) in the control group and 6/31 (19.3%) in the migraine group. The control group had a median of 2 (1.5-4.8) Relative Quantification - RQ compared to the migraine group with 9 (1-20) RQ; $p=0.548$. There was no association between CGRP mRNA expression and migraine phenotype or correlation with headache days, disabling pain days, MIDAS, HIT-6, and ASC-12 scores.

Conclusion
There was a low yield in the quantification of CGRP mRNA expression in leukocytes from peripheral blood samples. Increasing the sample size and controlling for the presence or absence of pain at the time of collection are necessary.

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Experiences in seeking professional care for individuals with temporomandibular disorders: a qualitative study

Jene Caroline Silva Marçal[1], Luana Maria Ramos Mendes[1], Milena Dietrich Deitos Rosa[1], Luana Denadai Oliveira Menezes[1], Andrey Aparecido Dognani Neves[1], Lidiane Lima Florêncio[2], Domingo Palacios-Ceña[2], Débora Bevilaqua Grossi[1]

[1]Department of Health Science, Ribeirão Preto Medical School, University of São Paulo. Ribeirão Preto, Sao Paulo, Brazil
[2]Department of Physiotherapy, Occupational Therapy, Rehabilitation and Physical Medicine. Rey Juan Carlos University. Alcorcón Campus (Madrid), Spain

Background
Temporomandibular disorders (TMD) are a group of musculoskeletal and neuromuscular conditions that involve the temporomandibular joints, masticatory muscles and associated tissues. This condition affects approximately 10% of the population, and up to two-thirds seek professional care. However, it is common to encounter difficulties when looking for a specialist professional to obtain correct information and receive care promptly.

Objective
To report the experiences of individuals with TMD in the health service and understand their perceptions regarding the search for specialized professional care.

Methods
This is a qualitative, descriptive and exploratory study, following COREQ and SRQR, approved by the CEP (CAAE: 67213923.0.0000.5440), which interviewed 12 individuals aged between 18 and 40 years old, diagnosed with TMD according to DC/TMD. A semi-structured interview was carried out, recorded and transcribed. Thematic analysis and inductive modification were used.

Results
The interview data established two themes: 1) Experiences related to the health service and 2) Motivations for searching for a professional. Patients were told that they had doubts about which professional they should look for to report their signs and symptoms related to TMD, as well as the difficulty in finding professionals specialized in treating the dysfunction and the high cost of accessing these professionals when found. Patients also say they expect good care and treatment to resolve their problems. Professional conduct is also based on dialogue, guidance and explanation about the dysfunction and the partnership between professional and patient to create a better treatment plan.

Conclusion
The reports show the difficulty of finding a specialized professional to deal with complaints related to TMD and how much this dysfunction requires greater visibility regarding which professionals the patient should seek to investigate their signs and symptoms. Furthermore, patients described the importance of having care focused on dialogue and attention to the complaints raised, designing a treatment plan together considering their observations and preferences.

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Craniofacial and neck disability predict the presence of symptoms related to central sensitization in individuals with temporomandibular disorders

Luana Maria Ramos Mendes, Jene Caroline Silva Marçal, Luana Denadai Oliveira Menezes, Débora Bevilaqua Grossi

Department of Health Sciences – Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Sao Paulo, Brazil

Background

Temporomandibular disorders (TMD) are the major cause of non-dental pain in the orofacial region. Patients with TMD frequently report craniofacial disability and pain in other areas of the body, like neck pain. However, there is still a gap regarding the relationship between the presence of symptoms related to Central Sensitization (CS) and craniofacial and neck disability in patients with TMD.

Objective

To explore the relationship between the presence of symptoms related to CS, as measured by the CSI, and craniofacial and neck disability.

Methods

This study was a cross-sectional study conducted with 87 individuals diagnosed with painful and mixed TMD. They were assessed for the presence of central sensitization symptoms using the Central Sensitization Inventory (CSI), craniofacial pain and disability using the Craniofacial Pain and Disability Inventory (CF-PDI), and neck disability using the Neck Disability Index (NDI). A Multiple Linear Regression was used to assess the relationship between craniofacial and neck disability and the presence of symptoms related to CS. Also, the association between the craniofacial disability domains and the presence of these symptoms was analyzed by multiple linear regression. In addition, the Chi-squared Test ($P < 0.05$) was used to verify the association between CS-related symptoms and the level of neck disability. Finally, the Prevalence Ratio of CS symptoms about the level of neck disability was calculated.

Results

The presence of CS-related symptoms is predicted by craniofacial disability and neck disability in 36%. In addition, the pain domain and the frequency of comorbidities domain of craniofacial disability can predict the presence of these symptoms in 30%. Finally, individuals with neck disability (moderate and severe disability) have 1.84 times more symptoms related to CS than individuals without neck disability (no disability and mild disability).

Conclusion

The results of this study support that craniofacial disability and neck disability are predictors for the presence of symptoms related to CS. Furthermore, the pain domains and frequency of comorbidities domain of craniofacial disability are considered predictors of these symptoms. Finally, individuals with a neck disability have more symptoms related to CS than those without a neck disability.

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Individualized and structured guidance on sleep hygiene and water intake in migraine - partial analysis of results from the randomized clinical trial

Gabriela Terenzi Rizzi[1], Rubem Soter Neto[1], Rafael Guilherme Vrech da Silva[1], Giovana Specian Chaves[1], Regina Célia Poli Frederico[2], Carlos Eduardo Coral de Oliveira[2], Edna Maria Vissoci Reiche[2], Valéria Aparecida Bello[2], Aline Vitali da Silva[2]

[1]Graduate of Medicine, Pontifícia Universidade Católica do Paraná Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.
[2]Professor, PhD, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.

Introduction
Migraine is a prevalent and debilitating primary headache disorder deeply influenced by lifestyle. Sleep disturbances are the second major trigger for migraine attacks, and some studies suggest that behavioral changes in sleep can reduce the intensity and frequency of headaches. Proper water intake is widely recommended; however, there is scant clinical evidence of the benefit of this intervention.

Objective
To evaluate the effect of individualized and structured guidance on sleep hygiene and water intake on the disability and impact of migraine compared to the control group.

Method
This study is a randomized, controlled, non-blinded clinical trial in which participants were randomly assigned to one of three groups: (1) control, (2) sleep hygiene, and (3) water intake. Individuals with migraine aged between 18 and 59 years, treated at the Academic Headache Clinic of PUCPR, Londrina-PR, Brazil, were included. The control group participants received usual care, the sleep hygiene group received individualized and structured guidance on sleep hygiene, and the water intake group received a 900ml water bottle and were instructed to drink three or more bottles per day. Participants were evaluated at baseline (T0) and after 12 weeks (T12) through a structured interview and self-administered questionnaires: Migraine Disability Assessment (MIDAS), Headache Impact Test 6 (HIT-6), Allodynia Symptom Checklist (ASC-12), Generalized Anxiety Disorder 7-item (GAD-7), Beck Depression Inventory (BDI), Insomnia Severity Index (ISI), and Epworth Sleepiness Scale (ESS).

Results
Twenty-three participants completed 12 weeks of follow-up, with 8 in the control group, 6 in the water intake group, and 8 in the sleep hygiene group. The groups are comparable, with no differences in demographic and clinical characteristics ($p>0.05$). Within groups, there was an improvement in different parameters analyzed when comparing T0 and T12 ($p<0.05$). However, there was no better performance in the parameters evaluated when comparing the intervention groups with the control group, probably due to the small sample size so far.

Conclusion
The results demonstrate that lifestyle interventions related to sleep and water intake are feasible in the context of medical care in a specialized outpatient clinic.

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Phonatory characteristics in primary headaches: a systematic review

Helena Cysneiros[1], Taciana Maciel[2], Daniella Oliveira[1,2]

[1]Graduate Program in Neuropsychiatry and Behavioral Sciences, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[2]Graduate Program in Physiotherapy, Federal University of Pernambuco, Recife, Pernambuco, Brazil

Introduction
Primary headaches may be associated with phonatory manifestations, probably due to shared pathophysiological aspects with the vagus nerve, also responsible for innervating the larynx, the phonatory organ. Understanding these manifestations in such disorders is a growing and recent research area.
Objective
this study aims to discuss the phonatory characteristics in patients with primary headaches
Method
This is a systematic review (PROSPERO - CRD42024528242), covering research in the last 5 years, involving patients aged 18 and up, published in English and Portuguese, indexed in MEDLINE/Pubmed, Lilacs/Bireme, CINAHL/Ebsco, Web of Science e Scopus/Elsevier. Studies with simultaneous interventions, reviews, pilots and case reports were excluded, aiming for a homogeneous sample of patients with primary headaches (migraine, tension type headache and cluster headache).
Results
Of the initial 5340 articles found, only 2 met the criteria: one studying episodic migraine, and another, episodic cluster headache, and no publications studying phonatory characteristics in tension type headache patients were found. In the included articles, all participants were exposed to high frequency pain (at least 6 pain episodes per month) and had specific phonatory characteristics when compared to healthy controls. During the interictal phase, migraineurs exhibited lower speaking and articulation rates and higher average pitch. Cluster headache patients in cluster bout period showed a significantly lower difference between the amplitude of the first harmonic and the amplitude of the second harmonic, and laryngostroboscopic examinations showed a significantly higher prevalence of chordal edema in the headache group.
Conclusion
The selected studies provided insights on the intricate relationship between primary headache disorders and phonation, emphasizing the importance of objective assessment methods to comprehensively understand the phonatory characteristics in these patients, while highlighting the need of further research with larger sample sizes and more robust methodologies.

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Analysis of the profile of hospitalizations for treatment of migraine and other cephalic pain syndromes in Brazil, from 2013 to 2023

Giovanna Lourenço Cavagnoli[1], Vitor Dias Espindola[1], Emely Regina Messias[1], Bruno Dias Queiroz[2], Natalia Camila Correia Mendes[3], Marcelo Alves de Souza[1]

[1]Federal University of Paraná, Curitiba, Brazil
[2]Santa Casa de Misericórdia de Vitória Higher School of Sciences, Vitória, Espirito Santo, Brazil
[3]Cesumar University, Maringá, Paraná, Brazil

Introduction
Headache is one of the most common complaints in medical consultations and one of the most frequent diagnoses in general practice and neurology outpatient clinics.
Objectives
To analyze the profile of hospitalizations for migraine and other cephalic pain syndromes in Brazil from 2013 to 2023.
Method
Descriptive ecological study, through data collection by the SUS Hospital Information System (SIH/SUS), linked to the Department of Informatics of the Unified Health System (DATASUS) in may 2024. The numbers of hospital admissions for migraine and other cephalic pain syndromes in the Brazilian population from 2013 to 2023 were analyzed. The variables used were: Age group, gender, race, year of hospitalization, federation unit/region, average length of stay and average value.
Results
During the period analyzed, there were 102,882 hospitalizations for migraine and other cephalic pain syndromes, with 2019 having the highest number of cases (12,120). The Southeast region accounted for 33.2% of these cases (34,189) and the state of São Paulo alone accounted for 22,260 cases. A higher predominance of hospitalizations was observed in females (65.9% of cases, 67,783 women). Regarding race, white prevailed (40.1%, 41,334). The predominant age group was 20-59 years (66.4% of cases, 68,330 individuals). Regarding the average length of stay of hospitalizations and their costs, the Northeast region had the highest average, from 3 to 4 days, and also the highest value, 588.12 reais above the national average of 464.51 reais.
Conclusion
In view of the analysis, it was possible to observe that the epidemiological profile of hospitalizations in Brazil is in the age group between 20-59 years, most of them are white, female and residents of the state of São Paulo. Thus, the present study reveals that the prevalence of cases in these specific groups may be the result of vulnerability associated with socioeconomic, sociodemographic, and behavioral factors. Based on these conclusions, the formulation of public health policies in Brazil for the prevention and control of headache can be better implemented.

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Epidemiological analysis of hospitalizations for headache in women at menacme in Brazil, between 2019 and 2023

Giovanna Lourenço Cavagnoli[1], Natalia Camila Correia Mendes[2], Bruno Dias Queiroz[3], Vitor Dias Espindola[1], Emely Regina Messias[1], Marcelo Alves de Souza[1]

[1]Federal University of Paraná, Curitiba, Brazil
[2]Cesumar University, Maringá, Paraná, Brazil
[3]Santa Casa de Misericórdia de Vitória Higher School of Sciences, Vitória, Espirito Santo, Brazil

Introduction
Headache is considered the second most frequent type of pain worldwide, generating high costs for patients and health services as a whole. According to the Brazilian Academy of Neurology, women are more likely to develop headache compared to men, a reason attributed to hormonal cycles.

Objectives
To describe the number of hospitalizations due to headaches in women at menacme in Brazil between 2019 and 2023.

Method
This is a descriptive cross-sectional study, using data collection from the SUS Hospital Information System (SIH/SUS), linked to the Department of Informatics of the Unified Health System (DATASUS) in may 2024. The numbers of hospital admissions for migraine and other cephalic pain syndromes in women at menacme in the 2019-2023 period were analyzed. The variables used were: Age group, gender, year of hospitalization, race/color, average value of hospitalizations, and federation unit/region.

Results
During this period, 22,649 hospitalizations for headaches were recorded in women at menacme. Of this total, the Southeast region concentrated the highest number of hospitalizations (32.3%, 7,333), and the state of São Paulo accounted for 61.9% of the cases. The year 2019 had the highest number of records (5,333), followed by 2023, with 4,975 cases. It was observed that headaches predominated in brown races/skin color in the North, Northeast and Midwest regions, which corresponded to 43% of the cases in Brazil. The predominant age group was 30-39 years (28.7%, 6,504). The South region had the highest average hospitalization value (465.72 reais).

Conclusion
In view of the analysis, there was a drop in hospitalizations from 2019 onwards, with a new increase in 2023. It was observed that the highest epidemiological profile is related to the Southeast region, especially the state of São Paulo, with brown skin color and age group between 30 and 39 years. The South region was responsible for the highest average number of hospitalizations. Therefore, this conclusion will be valid for the creation of public policies aimed at the prevention and treatment of headache in women at menacme.

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Epidemiological analysis of hospitalizations for headaches in the regional health departments of Paraná, between 2019 and 2023

Giovanna Lourenço Cavagnoli[1], Emely Regina Messias[1], Vitor Dias Espindola[1], Bruno Dias Queiroz[2], Natalia Camila Correia Mendes[3], Marcelo Alves de Souza[1]

[1]Federal University of Paraná, Curitiba, Brazil
[2]Santa Casa de Misericórdia de Vitória Higher School of Sciences, Vitória, Espirito Santo, Brazil
[3]Cesumar University, Maringá, Paraná, Brazil

Introduction
Headache is one of the most common complaints in the medical practice of neurology outpatient clinics. The treatment of headaches is in outpatient clinics, however, sometimes emergency measures or even hospitalization of the patient are necessary.
Objectives
To analyze the profile of hospitalizations due to headaches in the regional health departments of Paraná in the last 5 years.
Method
Descriptive ecological study, through data collection by the SUS Hospital Information System (SIH/SUS), linked to the Department of Informatics of the Unified Health System (DATASUS) in may 2024. The number of hospital admissions due to headaches in the population of Paraná from 2019 to 2023 was analyzed. The variables used were: age group, gender, race, year of hospitalization, health region, municipality, average length of stay and average value.
Results
A total of 8,152 hospitalizations due to headaches were recorded in regional health departments of the state of Paraná between 2019 and 2023. Of this total, the second Metropolitan RS was the one with the highest number of hospitalizations (66.4%, 5,414), and the city of Campo Largo accounted for 3,659 cases. The year 2019 had the highest number of registrations (2,833), while in 2023, there was a drop of 50.7% compared to that year (1,397). There was a higher predominance of headaches in females (61.3%, 4,995) and white race/color prevailed (6,457). The predominant age group was 40-59 years (35%, 2,852). Regarding the average length of stay, the third RS Ponta Grossa had the highest average (4.8) and the 20th RS Toledo the lowest (1.5). Regarding the average value of hospitalizations, the second Metropolitan RS had the highest value, 706.16 reais.
Conclusion
In view of the analysis, it was possible to observe that the profile of hospitalizations in Paraná in the period is characterized by female, white, age group between 40 to 59 years, led mainly by the 2nd Metropolitan RS, which had the highest average hospitalization value. Thus, this conclusion will be important for the development of public health policies for the treatment and prevention of headaches in the state.

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Hospital admissions due to headaches in children and adolescents in Brazil: an ecological study from 2013 to 2023

Giovanna Lourenço Cavagnoli[1], Vitor Dias Espindola[1], Emely Regina Messias[1], Bruno Dias Queiroz[2], Natalia Camila Correia Mendes[3], Marcelo Alves de Souza[1]

[1]Federal University of Paraná, Curitiba, Brazil
[2]Santa Casa de Misericórdia de Vitória Higher School of Sciences, Vitória, Espirito Santo, Brazil
[3]Cesumar University, Maringá, Paraná, Brazil

Introduction
Headaches are among the most common pains in childhood and are one of the reasons why most parents seek specialized neurological care.
Objectives
To analyze the epidemiological profile of hospitalizations for headaches in children and adolescents in Brazil between 2013 and 2023.
Method
Descriptive ecological study, through data collection by the SUS Hospital Information System (SIH/SUS), linked to the Department of Informatics of the Unified Health System (DATASUS) in may 2024. The number of hospital admissions due to headaches in the pediatric population, aged 0 to 19 years, in the period 2013-2023 was analyzed. The variables used were: Age group, gender, race, year of hospitalization, region, average value and average length of stay.
Results
During the period analyzed, there were 17,924 children and adolescents hospitalized because of headaches. The Southeast region had the highest number of hospitalizations (35.8%, 6,423), and the year 2023 had the highest number of cases (2,092). Regarding sex/race, the analyses showed a higher prevalence of hospitalizations among females (62.3%, 11,166) with brown skin color (43.3%, 7,774) as the majority. The predominant age group was between 15-19 years (43.9%, 7,866). The average length of stay of hospitalizations was between 3 and 5 days, with a higher average for the age group under 1 year (5.9 days). The average value of hospitalizations was also higher in this population (1,833.84 reais), a value considered above the average of the pediatric age groups of around 691.39 reais. In relation to total expenditures, migraine in the pediatric population generated a total cost of 6,499,527.48 reais in the period analyzed.
Conclusion
In view of the analyses, the epidemiological profile of hospitalizations was led by the age group of 15-19 years. Most of them are female, brown and residents of the state of São Paulo. Finally, biological and behavioral factors may be linked to the occurrence of headaches in children and adolescents, and public policies aimed at the prevention and treatment of this condition need to be adequate and improved.

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Epidemiological profile and costs of hospitalizations for migraines in Paraná between 2014 and 2023

Paola Regina Mombach Lazzaron, Heitor Tadayuki Ishie, Sofia Mitsue Ishie, Thiago De Carvalho Iocohama, Jéssica Cristina Ruths, Sabrina Lima Machado

Federal University of Paraná, Curitiba, Paraná, Brazil

Introduction

Headaches represent common complaints in medical care and an important cause of morbidity worldwide, often resulting in hospital admissions. Headaches have significant repercussions for public health, according to the literature, affecting between 43% and 93% of the Brazilian population, potentially impairing quality of life. The most affected group comprises women, young adults, black, and brown people. The number of hospitalizations for this condition is higher in the Southeast, Northeast, and South regions.

Objectives

To identify the epidemiological profile and the cost of hospitalizations for headaches in Paraná from 2014 to 2023.

Methods

Observational, descriptive, quantitative, and cross-sectional study. Based on secondary data from the Sistema de Informações Hospitalares do Sistema Único de Saúde (SIH/SUS) of the Departamento de Informação e Informática do Sistema Único de Saúde (DATASUS). The analyzed variables were age, sex, color or race, total value, average value, and average length of stay.

Results

In Paraná, between 2014 and 2023, there were 14.578 hospitalizations for migraine and other headache syndromes. The year 2019 stands out with 2.833 hospitalizations. There was a prevalence of hospitalizations in women (9.068), in white individuals (11.488), and aged between 40 to 49 years (2.640 cases). The majority of hospitalizations were urgent (13.582). The total cost of hospitalizations was R$7.743,620.00 with an average annual cost of R$490.21 per hospitalization and an average duration of 2.7 days.

Conclusion

There was correspondence between the epidemiological profile found in the state of Paraná and what is observed in the current literature, showing a high number of hospitalizations for migraine and other headache syndromes, with significant expenditure on the public health system, requiring further investigation into the causality of these events, so that, the prevention of crises can be intensified within the most affected group.

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Enhanced tmj arthrocentesis for disc displacement without reduction: efficacy of vacuum-assisted technique versus conventional approach

Eduardo Grossmann[1], Rodrigo Lorenzi Poluha[2]

[1]Federal University of Rio Grande Do Sul, Porto Alegre, Rio Grande do Sul, Brazil,
[2]Department of Dentistry, State University of Maringa, Maringa, Parana, Brazil

Introduction
Temporomandibular joint (TMJ) disorders, such as disc displacement without reduction (DDWOR), pose significant clinical challenges due to the associated pain and functional limitations. Arthrocentesis is a minimally invasive technique employed to manage these conditions. This study aims to compare the effectiveness of two different techniques of double puncture arthrocentesis—with and without the addition of catheters and a vacuum pump—in managing TMJ DDWOR.

Objectives
The primary objective of this study was to evaluate and compare the clinical outcomes of TMJ arthrocentesis performed with the addition of catheters and a vacuum pump versus without any additional devices. This comparison aims to identify the technique that provides superior symptomatic relief and functional improvement.

Methods
A total of 48 patients diagnosed with DDWOR were randomly and blindly allocated into two treatment groups (N = 24 each). Group 1 underwent TMJ arthrocentesis with the addition of catheters and a vacuum pump to the second needle, while Group 2 received TMJ arthrocentesis without any additional devices. The variables recorded and compared between the groups included: patient's pain perception (measured using the visual analogue scale [VAS; 0–10]), maximal interincisal distance (MID; measured in millimeters), joint effusion (JE; noted as presence or absence), facial edema (FE; noted as presence or absence), and operation duration (OP; recorded in minutes).

Results
Patients in Group 1, who received TMJ arthrocentesis with the addition of catheters and a vacuum pump, presented significantly lower VAS scores ($p < 0.001$) and a reduced presence of FE ($p = 0.03$) in the postoperative period. Furthermore, these patients demonstrated an increase in MID values ($p = 0.026$) and a reduction in JE ($p = 0.022$) after 3 months. Additionally, the procedure in Group 1 was performed significantly faster ($p < 0.001$).

Conclusion
The results indicate that performing arthrocentesis with the addition of a vacuum pump enhances the efficiency of the procedure, yielding better outcomes in terms of pain reduction, facial swelling mitigation, improved mouth opening, and decreased joint effusion. This technique, therefore, offers a superior approach for managing TMJ DDWOR, improving both immediate and long-term patient outcomes.

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Treatment of refractory migraine in the emergency unit of the Barbacena Hospital Complex - REDE FHEMIG

Priscilla Garcia de Andrade

Hospital Geral de Nova Iguaçu, Rio de Janeiro, Rio de Janeiro

Headache is one of the primary neurological complaints in emergency departments. It is not uncommon for headaches to persist even with appropriate treatment. The initial evaluation should differentiate between primary and secondary headaches, determine the need for further investigation, and treat the acute pain. Migraines, in particular, are among the most disabling primary headches, affecting quality of life and burdening the healthcare system. Refractory migraine is characterized by the lack of response to standard preventive and acute treatment, requiring a more aggressive therapeutic approach.

The objective of the study is to evaluate the therapeutic response in the treatment of refractory migraine at the Emergency Department of the Barbacena Hospital Complex, two hours after the administration of a combination of 5 mg of intravenous or oral haloperidol and intravenous or oral dexamethasone in patients classified as refractory to initial treatment.

The study was conducted as a prospective observational study with patients considered refractory to initial migraine treatment. Patients who did not respond to at least three adequate dose medications were included. After obtaining consent, demographic data and medical histories were collected, and patients completed the Visual Analog Scale (VAS) to quantify pain. They received 5 mg of haloperidol (oral or intravenous) and 4 mg of dexamethasone (oral or intravenous). After two hours, pain intensity was reassessed and quantified.

The study is ongoing, with data collection from August 1, 2023, to July 31, 2024. However, with the end approaching, it is now possible to evaluate the results and clarify the proposed objective. Currently, there are 16 patients, 15 females and 1 male, with an average age of 28 years. The results are favorable, showing improvement after therapy by at least 2 points on the VAS and a maximum of 10 points, with only one result indifferent to the treatment.

The combination of haloperidol and dexamethasone appears promising in treating patients who do not respond to conventional therapy, providing significant pain relief. This approach can reduce patient morbidity and healthcare costs. Additional studies are needed to optimize the doses and combinations of these medications to maximize efficacy and minimize risks.

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Association between plasma levels of interleukin 1β and clinical aspects of migraine

Ana Clara Oliver Machado[1], Carlos Eduardo Coral de Oliveira[1], Valéria Aparecida Bello[1], Regina Célia Poli Frederico[1], Andrea Name Colado Simão[2], Marcell Alysson Batisti Lozovoy[2], Aline Vitali da Silva[1], Lara Schiavão de Carvalho[1], Adriano Torres Antonucci[1], Edna Maria Vissoci Reiche[2]

[1]Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.
[2]Universidade Estadual de Londrina, Londrina, Paraná, Brazil

Introduction
Migraine is a highly prevalent and relevant disease, significantly impacting the quality of life of its sufferers. Its etiology involves interactions among genetic, immunological, and environmental factors; however, the mechanisms underlying its pathophysiology remain poorly understood. Studies indicate an association of inflammatory cytokines with specific stages of the disease. interleukin (IL)-1 is known to activate various inflammatory pathways, which are important in the pathogenesis of migraine.

Objectives
This study aims to evaluate the association between plasma IL-1 levels and clinical aspects of migraine.

Methods
A case-control study was carried out with individuals diagnosed with migraine and treated at the Headache Clinic of Pontifical Catholic University of Paraná, Campus Londrina, Paraná, Brazil. Peripheral blood samples were collected from patients with migraine (case group) and healthy individuals (control group). Structured interviews and self-administered questionnaires were used to obtain epidemiological, clinical, and therapeutic data. IL-1 levels were measured using the immunofluorimetric assay.

Results
A total of 176 individuals were included, including 80 patients with migraine (case group) and 96 controls. Among the 80 patients, 62 (77.5%) were female, and among the 96 controls, 68 (70.8%) were female. There were no significant differences in sex, age, or ethnicity between patients and controls ($p>0.05$). Of the 80 patients, 32 (40.0%) reported the presence of aura, 71 (88.7%) reported photophobia, 65 (81.2%) phonophobia, and 46 (58.2%) reported osmophobia. The IL-1 values ranged from non-detectable (<9.0 pg/mL) to 116.8 pg/mL, with a median of 9.0 pg/mL (interquartile range of 90.51 pg/mL). Patients with migraine had an average IL-1 levels of 10.38±12.25 pg/mL, while controls had an average of 10.10±6.46 pg/mL ($p=0.855$). Significant associations were found between higher IL-1 levels and chronic migraine ($p=0.015$) and migraine with aura ($p=0.026$), while other variables did not show significant differences (>0.05). A marginal association was observed between IL-1 levels and migraine disability evaluated using the MIDAS questionnaire ($p=0.059$).

Conclusion
This study contributes to a better understanding of migraine management by considering IL-1 levels in relation to specific clinical characteristics, as well as suggests IL-1 as a possible biomarker for the disease and/or new target for specific medications.

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Relationship between central sensitization, headache impact and neck disability in migraine

Felipe Daniel Sambini[1], Luana Maria Ramos Mendes[1], Gabriella de Almeida Tolentino[1], Juliana Pradela[1], Adrila de Cassia Cabral Norato[1], Fabiola Dach[2], Debora Bevilaqua Grossi[1]

[1]Department of Health Sciences – Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Sao Paulo, Brazil.
[2]Department of Neurosciences and Behavioral Sciences – Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Sao Paulo, Brazil

Introduction
Neck pain is a frequent symptom of migraine. The presence of neck pain is associated with more severe headache symptoms. Central sensitization (CS) is a feature of migraine and may be related to the development of neck pain and the process of migraine chronification. There's no gold standard tool to access CS, but the Central Sensitization Inventory (CSI) has been suggested. However, the relation between CSI and other assessment tools, such as the headache impact and neck pain disability, is still unclear.

Objectives
To evaluate the correlation between CS, measured by CSI and headache impact, measured by Headache Impact Test (HIT-6) and neck disability, measured by Neck Disability Index (NDI).

Methods
The local Research Ethics Committee (5,253,045/2022) approved this cross-sectional study. One hundred individuals diagnosed with migraine, according to the third edition of the International Classification of Headache Disorders, were recruited. Sociodemographic data were collected, plus the CSI, HIT-6 and NDI questionnaires. Clinic and demographic data were analyzed by mean and standard deviation. The Shapiro-Wilk test was performed to verify data distribution, and Pearson's correlation was used to verify the association between CSI and the HIT-6. A posteriori, the correlation between the CSI and NDI was performed. The correlation was interpreted using a range of -1 to 1, considering <0.3 as a weak correlation, between 0.3 and 0.7 as a moderate correlation and >0.7 as a strong correlation.

Results
The evaluated individuals had a mean age of 36.6 years (SD= 9.7), with a mean body mass index of 26.1 (SD= 4.2). The mean illness duration was 17.1 (SD=10.1), with a mean frequency of 13.8 (SD=8.8) headache days per month, with a mean intensity of 7.9 (SD= 1.8). The mean score of the CSI questionnaire was 50 points (SD=15.8), from HIT-6 was 63 points (SD=9) and from NDI was 13 points (SD= 8). A positive and moderate correlation was found between CSI and HIT-6 (r= 0,43; p<0,001) and between CSI and NDI (r= 0,42; p<0,001).

Conclusion
The CSI correlates moderately with HIT-6 and NDI, two validated assessment tools for migraine. Therefore, we can suggest the use of CSI to evaluate migraineurs.

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Relationships between craniofacial pain and disability, neck disability, and orofacial myofunctional condition in patients with temporomandibular dysfunction

Gesseany Joice Rodrigues dos Santos, Luana Maria Ramos Mendes, Luana Denadai Oliveira Menezes, Debora Bevilaqua Grossi, Gislaine Aparecida Folha

Department of Health Sciences – Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Sao Paulo, Brazil.

Introduction

Temporomandibular dysfunction (TMD) is a restrictive condition affecting the muscles used for chewing, the temporomandibular joint, and related structures, which impairs orofacial and cervical functions.

Objective

To investigate the presence of craniofacial and mandibular pain and disability, and to correlate these with orofacial myofunctional status in patients with temporomandibular disorders (TMD).

Methods

A cross-sectional study was conducted with a sample of 52 individuals diagnosed with TMD, aged between 18 and 40 years, of both genders. Exclusion criteria included edentulous individuals not using prostheses, those with systemic diseases, neurological disorders, recent head or neck trauma or surgery within the past year, and those unable to cooperate. Diagnosis was based on Axis I of the Diagnostic Criteria for Temporomandibular Disorders (DC/TMD). The Orofacial Myofunctional Evaluation with Scores Protocol (OMES), validated for TMD patients, assessed orofacial myofunctional conditions such as appearance, posture, mobility, and functions. Additionally, self-administered instruments included the Craniofacial Pain and Disability Inventory (CF-PDI) and the Neck Disability Index (NDI), which measures self-reported pain intensity and limitations in daily activities related or unrelated to work. Data were analyzed using mean, standard deviation, frequency, Spearman correlation for instrument scores, and simple linear regression to assess the influence of orofacial myofunctional disorder (OMES) on CF-PDI and NDI.

Results

Based on mean scores obtained (OMES: 79.45±5.95, CF-PDI: 23.65±23.60, NDI: 12.77±6.32), patients showed values above the cutoff for orofacial myofunctional disorder, exceeding the Minimal Detectable Change for CF-PDI, and indicating mild to moderate disability according to NDI. There was no correlation between orofacial myofunctional status measured by OMES and CF-PDI (-0.08), but there was negative correlation between OMES and NDI (-0.31), suggesting worse orofacial myofunctional status associated with greater neck disability. Linear regression indicated no significant influence of OMES on CF-PDI but showed a significant influence on NDI (P=0.015).

Conclusion

Patients with TMD demonstrated poorer orofacial myofunctional status, functional limitations, and craniofacial pain. There association between orofacial myofunctional status and neck disability.

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National campaign "Bordeaux May" 2024 to raise awareness and combat headaches: event report

Daniella Araújo[1], Juliana Andrade[1], Helena Cysneiros[1], Taciana Maciel[1], Hugo Feitosa[1], Poliana Candido[1], Emanuel Reis[1], Maria Clara Sampaio[1], José Luiz Severo[1], Davi de Almeida[1], Ernandes de Souza Neto[1], Maria Vitória Ramos[1], Nathalya Soares[1], Alejandra dos Santos[2], Aline Serrano[2], Ewellyn de Almeida[1], Letícia Moreira[1], Vinícius Luiz[1], Iasmin Mesquita[1], Laura Barbosa[1], Luana Ribeiro[1], Laudiceia Luna[1], Izabela da Cruz[1], Marcelo Valença[1]

[1]Federal University of Pernambuco, Recife, Pernambuco, Brazil
[2]Mauricio de Nassau University Center, Recife, Pernambuco, Brazil

Introduction
The Global Burden of Disease 2021 study ranks headache disorders as the third leading cause of years lived with disability, however, they are still under-recognized, under-diagnosed and under-treated globally. The Brazilian Headache Society, through its "Bordeaux May " campaign, aims to raise awareness about headaches among the general population and health care professionals.

Objective
To describe the sociodemographic profile and clinical characteristics of the headaches of those interviewed during the event.

Methods
This is a cross-sectional study, conducted by the Federal University of Pernambuco in partnership with the Brazilian Headache Society. The event took place on May 19th, 2024, in the Jaqueira Park, Recife, and 157 volunteers were interviewed (60.9% women, 39.1% men). Data regarding age, sex, presence of headache, visits to the emergency room due to headache, medication administered in such visits and whether they were resolutive or not, as well as self-medication habits, proper health care access and its efficiency were collected.

Results
Headaches were referred in 77.1% of the sample (n=121/157, 75 women, 45 men), and led to emergency room visits up to 3 times within the last year for 26 individuals (15 women, 5 men). The medications most administered on these occasions were analgesics, being resolutive in 69,2% of the patients. Self-medication was reported by 82.5% of the sample, while 78.3% are not undergoing any treatment for their condition. The main triggering factors were stress (62.5%), sleep deprivation (54.1%), and menstrual cycle (53.3% of the women).

Conclusion
There was a high prevalence of headache in the sample, and women were more affected than men. Over half of the volunteers experiencing headaches did not seek medical help, likely leading to the high rate of self-medication observed. These findings highlight the urgent need to educate the population about headaches, as well as expanding access to proper health care.

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Frequency of primary headaches associated with pain related to disability in the cervical spine

Ryan Pinheiro Castro[1], Daniele Da Silva Da Paz[1], Camila Vitória de Moraes Costa[1], Matheus Rafael Feques Ferreira Nogueira[1], Geovanna Cristina Pereira Alves[1], Thayllane Costa Cardoso[1], Rodrigo Sousa Andrade[1], Guilherme Gonçalves Silva Pinto[2], Louise Aline Romao Gondim[3], Bruna Katarine Beserra Paz[4], Maria Claudia Gonçalves[5]

[1]Physiotheraphy Undergraduate course, Ceuma University, São Luís, Maranhão, Brazil
[2]Graduted in medicine, UNICEPLAC and Postgraduate in Intensive Care UNINTER, Curitiba, Paraná, Brazil
[3]Physiotheraphy student of the Postgraduate Master´s Program in Environment, Ceuma University, São Luís, Maranhão, Brazil
[4]Student of the undergraduate medicine course and coordinator of th school clinic Ana Lúcia Chaves Fecury, Ceuma University São Luis, Maranhão, Brazil
[5]Professor of the Postgraduate Environmental Program and the Undergraduate course in Phisiotherapy

Introduction
The literature indicates that individuals with headache have reduced range of motion (ROM) and neck pain, but it is not yet well established whether these conditions reflects on functionality of the cervical spine in young adults.
Objective
To evaluate the frequency of disability-related pain in the cervical spine in individuals with and without headache.
Materials and Methods
Cross-sectional study, young adult individuals with and without primary headaches of both sexes, aged between 18 and 30 years old, were included; those who had secondary headaches and cognitive impairment that made it impossible to complete the questionnaire were excluded. The Visual Numerical Scale (VNS) was used to indicate the intensity of neck pain; the Headache Screening Questionnaire (HSQ) for headache screening and the Neck Disability Index (NDI) to indicate disability related to the cervical spine. The difference between groups was compared using analysis of variance (ANOVA). The level of statistical significance was p≤ 0.05.
Results
89 individuals were evaluated, divided into a headache group (GCC) n=45, with a mean neck pain, age, weight and height of 3.58±3.00, 22.49 years, 64.27kg and 1 62m2 respectively, and control group (CG) n=44 with an average age, weight and height of 22.7 years, 68.41kg and 1.66m2 respectively. There was no significant difference in the levels of disability related to cervical spine pain between the groups.
Conclusion
We observed that individuals with tension-type or migraine headaches have mild disability in the cervical spine, and these do not present a significant difference when compared to individuals without headache.

Research Ethics Committee of CEUMA University process no. 2.627.609

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Relationship between the increase in temperature and cases of headache – un sustainable development goals – SDGs 3 and 13

Camila Vitória de Moraes Costa[1], Dheyse Moreira dos Santos[2], Geovanna Cristina Pereira Alves[1], Thayllane Costa Cardoso[1], Rodrigo de Sousa Andrade[1], Adriana Sousa Rêgo[3], Daniela Bassi Dibai[4], Fabrício Brito Silva[3], Maria Letícia Vale Figueiredo[5], Maria Claudia Gonçalves[3]

[1]Student Physiotherapy Undergraduate course, Ceuma University, Sao Luís, Maranhão, Brazil
[2]Master´s student, Posgraduate Program in the environment and undergraduate course in Physiotherapy, Ceuma University, Sao Luís, Maranhão, Brazil
[3]Professor, Postgraduate Program in Environment and Undergraduate course in Physiotherapy
[4]Postgraduate Program in Program Management and Health Services, Ceuma University, São Luís, Maranhão, BRazil
[5]Neurologist, Federal University of Maranhão, Sao Luís, Maranhão, Brazil

Introduction
There appears to be a positive relationship between climate change and headache, but the literature remains scarce regarding the trend towards an increase in headache cases in conjunction with an increase in temperature.
Objective
To evaluate the annual trend of headache cases in relation to climatic variation in environmental temperature.
Materials and Methods
This is an ecological research, with a time series from the years 2014 to 2023, which was carried out through a search for secondary data from the cities of São Luís/MA and Porto Alegre/RS, chosen due to the differences in climate. Headache data were obtained from the Department of Informatics of the Unified Health System (DATASUS) and environmental temperature data were collected from the National Institute of Meteorology (INMET). The data was filtered from the systems, organized in Excel spreadsheets, after removing the lines with values, the Mann-Kendall test was used to check the monthly trends of climate change in relation to headache cases.
Result
In São Luís- MA the sample was composed of n=125 cases, female n=88 (70%) aged 30 to 39 years; 2018 was the year with the highest frequency of notifications, with a prevalence rate of 2.1 (n=23) per 100,000 inhabitants, in Porto Alegre the sample was n=1,009 patients, the majority being female n=752 (75%), in the age group from 50 to 59 years old, 2022 was the year with the highest frequency of notification, with a prevalence rate of 8.63 per 100,000 inhabitants, the average, maximum and minimum monthly temperature in São Luís- MA it was 28ºC, 32.14±0.97ºC and 25.29±0.76ºC and for Porto Alegre it was 26ºC, 25.99±17ºC and 16.27±3.75 respectively. An increasing trend in maximum and minimum temperatures ($p<0.001$) was observed for both cities, with a tendency for headache cases to increase as the temperature increased ($p=0.001$).
Conclusion
There was a tendency for headache cases to increase as monthly temperatures increased, pointing to the need for strategies to mitigate temperature changes and future planning in several areas, including environmental policies and health.

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Reduction in neck strength in young people with and without headache

Matheus Rafael Feques Ferreira Nogueira[1], Izabela Alves Brito[1], Geovanna Cristina Pereira Alves[1], Thayllane Costa Cardoso[1], Camila Vitória de Moraes Costa[1], Rodrigo Sousa Andrade[1], Ryan Pinheiro Castro[1], Nathália Hanna Costa Nascimento[1], Pedro Leonardo Pinto[2], Maria Claudia Gonçalves[3]

[1]Physiotherapy Undergraduate course, Ceuma University, Sao Luís, Maranhão, Brazil
[2]Physiotherapist, Ceuma University, Sao Luís, Maranhão, Brazil
[3]Professor of the Postgraduate program in the environment and the undergraduate course in Physiotherapy, Ceuma University, Sao Luís, Maranhão,Brazil

Individuals with headache have reduced isometric flexion and extension muscle strength, but it is not known whether this reduction is already present in the early years of the disease. To evaluate the strength of the flexor and extensor muscles of the cervical spine in young adults with and without headache. This study included young adults of both sexes, aged between 18 and 30, with and without a diagnosis of headache and excluded those with a history of cervical trauma; pregnancy; herniated or bulging cervical disc and joint pathologies; cervical and facial tumors. A pre-prepared questionnaire was used to assess general data, the Headache Screening Questionnaire (HSQ) to screen for headache and the Neck Disability Index (NDI) was used to assess the level of disability related to neck pain. Flexor and extensor muscle strength was measured using a portable dynamometer (Lafayette Instrument Company). The normality of the data was tested using the Shapiro-Wilk test, the data was summarized by means and standard deviation, analysis of variance (ANOVA) was used to verify the difference between the groups, the level of statistical significance adopted was p≤ 0.05. We assessed n=60 individuals, n=30 with headache and n=30 from the control group, with a mean age, height and weight of 23.33±6.28 years, 1.64±0.09m2 and 64±12.14 kg and 22.07± 2 years, 1.62±2m2 and 64.54±14.11 respectively (p=0.34), mean time, frequency, duration and intensity of headache of 3.26±2.4 years 10.9±8.20 days, 18±8 hours, 8.82± 1.07 VAS. Mild neck pain was the most common in both groups. A significant difference was observed between the groups for the extensor muscles (p=0.043). Young adults with headache showed reduced strength in the flexor muscles of the cervical spine when compared to controls.
Ethics Committee for Research with Human Beings of CEUMA University - UNICEUMA opinion no. 4.874.439

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"I also feel sad, because I can see that it's getting worse and worse": migraine patients' perception of neck pain

Milena Dietrich Deitos Rosa[1], Jene Caroline Silva Marçal[1], Maria Luiza Santana Barros[1], João Vitor Penteado Costa[1], Ana Beatriz Barbosa[1], Lidiane Lima Florencio[3], Domingo Palacios-Ceña[3], Fabiola Dach[3], Débora Bevilaqua Grossi[1]

[1]Department of Health Science, Ribeirão Preto Medical School, University of São Paulo. Ribeirão Preto, Brazil
[2]Department of Physiotherapy, Occupational Therapy, Rehabilitation and Physical Medicine. Domingo Palacios Ceña University. Alcorcón Campus (Madrid), Spain
[3]Department of Neurosciences and Behavioral Sciences, Ribeirão Preto Medical School, University of São Paulo. Ribeirão Preto, Brazil

Introduction
There is a high prevalence of neck pain in patients with migraine, which when reported can show a worse clinical presentation of the disease, such as more prominent signs and symptoms and a worse psychological burden, reinforcing its impact. However, the way it is interpreted by patients is still little explored and known.Objective: To understand the relevance of neck pain for patients with migraine, observing their perception, beliefs and strategies for dealing with this symptom.

Methods
This is a qualitative, descriptive and exploratory study, developed in accordance with the COREQ and SRQR, approved by the CEP (CAAE: 58915822.1.0000.5440). Twenty-four individuals aged between 18 and 55 diagnosed with migraine according to the 3rd edition of the International Classification of Headache Disorders and with self-reported neck pain took part in a semi-structured interview. The transcripts were subjected to thematic analysis and inductive coding.

Results
Four themes emerged from the analysis: 1) Pain characteristics; 2) Pain beliefs; 3) Coping strategies; 4) Emotional aspects. Patients describe their pain as something rigid and locking, being an uncomfortable and very painful sensation. There is a diversity of opinions on the cause, some relating it directly to migraine and others to emotions and their body positioning. With regard to management, as the main prevention strategy, patients reported stretching and exercising. The coping strategies mentioned were active movements, self-massage and medication, such as common painkillers and muscle relaxants when the pain is strongest. These patients also reported not allowing neck pain to affect their routine activities. Emotions such as anxiety, sadness and frustration were mentioned.

Conclusion
This study provides important insights into the views of patients with migraine regarding neck pain and their management strategies, but there is still a diversity of opinions regarding the understanding of the cause of neck pain. Professionals should include this condition in their clinical assessments, giving due attention to the craniocervical system, so that they can individually advise patients about this condition and how it should be managed, thus encouraging better choices.

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Migraine and tinnitus: implications for multidisciplinary management

Vitória Carolina Leonel, Juliana Pradela, Nelma Ellen Zamberlan-Amorim, Amanda Rodrigues, Ana Cláudia Mirândola Barbosa Reis, Fabiola Dach, Debora Bevilaqua Grossi

Faculty of medicine of Ribeirão Preto, University of Sao Paulo, Ribeirão Preto Sao Paulo, Brazil

Introduction

Patients with migraines often experience vestibular and audiological symptoms, especially tinnitus. Both conditions are linked to vertigo, neck pain, and depression, which can affect the disease burden.

Objective

To examine the correlation between tinnitus characteristics and disability with measures of disability, central sensitization, and depression in migraine patients.

Methods

Forty-six women with migraine and tinnitus (aged 18-55 years) were recruited. All participants underwent audiological evaluations to exclude hearing loss and acuphenometry assessments to determine tinnitus intensity (dB) and frequency (Hz). Questionnaires administered included the Tinnitus Handicap Inventory (THI), Headache Impact Test (HIT-6), Central Sensitization Inventory (CSI), Neck Disability Index (NDI), Patient Depression Questionnaire (PHQ-9), and Dizziness Handicap Inventory (DHI). Spearman correlations were classified as weak (rho<0.3), moderate (0.3<rho<0.6), and strong (rho>0.7).

Results

Moderate, significant correlations were observed between tinnitus intensity in the right ear (RE) and left ear (LE) with THI (RE: rho=0.335, p=0.037; LE: rho=0.373, p=0.025), HIT-6 (RE: rho=0.371, p=0.020; LE: rho=0.344, p=0.040), CSI (RE: rho=0.385, p=0.015; LE: rho=0.432, p=0.008), NDI (RE: rho=0.347, p=0.030; LE: rho=0.386, p=0.020), and PHQ-9 (RE: rho=0.377, p=0.018; LE: rho=0.397, p=0.016). Negative, moderate, significant correlations were found between tinnitus frequency and NDI (RE: rho=-0.402, p=0.011; LE: rho=-0.491, p=0.002), and between LE tinnitus frequency and THI (rho=-0.437, p=0.008), CSI (rho=-0.357, p=0.032), and PHQ-9 (rho=-0.383, p=0.021). Positive, moderate, significant correlations were noted between THI and PHQ-9 (rho=0.483, p=0.001), CSI (rho=0.543, p=0.000), NDI (rho=0.568, p=0.000), and HIT-6 (rho=0.344, p=0.019). A strong, significant correlation was found between THI and DHI (rho=0.768, p=0.000).

Conclusion

The perception of low-pitched and loud tinnitus, indicated by lower frequency and higher intensity sounds, and tinnitus-related disability correlate with greater disability related to headaches, neck pain, and dizziness, alongside increased central sensitization and depressive symptoms in migraine patients. These results emphasize the need for a multidisciplinary approach in audiological, psychological, and functional evaluations for better management of migraines and tinnitus.

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Characterization of facial pain in individuals with hemifacial spasm

Míriam Carvalho Soares[1], Mariana de Almeida Cruz Silva[2], João Augusto de Macedo Cavalcanti de Albuquerque[2], Clélia Maria Ribeiro Franco[1,3], Pedro Augusto Sampaio Rocha Filho[1,3]

[1]Clinical Hospital, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[2]Center for Medical Sciences, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[3]Oswaldo Cruz University Hospital, Recife, Pernambuco, Brazil

Background
Hemifacial spasm (HFS) is defined by involuntary facial contractions. Facial pain associated with HFS is observed in practice, although there is still little research on the subject.
Objective
To characterize facial pain in HFS patients and to analyze if pain was associated with clinical spasm severity, quality of life (QoL), anxiety, depression and insomnia.
Methods
Cross-sectional study involving 59 patients of a public hospital. Cognitive impairment, use of botulinum toxin in the last three months and other movement disorders were exclusion criteria. Data were obtained using the following instruments: sociodemographic questionnaire; structured questionnaire of facial pain characteristics (intensity in a visual analog scale: VAS, frequency, location); McGill pain questionnaire; hemifacial spasm grading questionnaire (HFS-Score) for clinical severity and QoL; hospital anxiety and depression scale (HADS); and insomnia severity index (ISI).
Results
Among 59 patients, 39 (66.1%) were female and mean age was 65.9 years (SD: 12.9). Average diagnosis time was 15.5 years (SD: 8.5) and time to pain onset was 5.5 years (IQR: 15.7). Most common spasm side was left: 36 patients (61%). 26 patients (44.1%) reported facial pain, mean intensity was 6.1 (SD: 2) in VAS and frequency of 5 (IQR: 12) days/month. The facial pain locations were: periorbital in 21 cases (80.7%), maxillary in 5 (19.2%) and mandibular in 2 (7.6%). Auricular and whole hemiface were mentioned in 1 case (3.8%) each. 25 patients (96.1%) described pain ipsilaterally to spasm, and 1 (3.9%) described pain bilaterally. Most common descriptors for pain were: pulling (11 patients), itchy (10 patients) and annoying (10 patients). Association between facial pain and worse QoL was found (p: 0.038; Mann-Whitney test). Facial pain was also related to insomnia (p: 0.037; Fisher exact test). No association was found between facial pain and clinical spasm severity, age, anxiety or depression.
Conclusion
Facial pain is common in patients with hemifacial spasm and generally occurs on the same side, is moderate in intensity and is associated with a worse quality of life and insomnia.

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Temporomandibular dysfunction is correlated with central sensitization in individuals with headache

Thayllane Costa Cardoso[1], Geovanna Cristina Pereira Alves[1]; Camila Vitória de Moraes Costa[1], Ryan Pinheiro Castro[1], Carlos Alberto Bezerra Tomaz[2], Carolina Vitória de Moraes Costa[3], Maria Letícia vale Figueiredo[4], Greice Emanuele De Sousa Santos[5], Francisco Fleury Uchoa Santos Júnior[6], Maria Claudia Gonçalves[2]

[1]Graduate in Physiotherapy, CEUMA University, Sao Luís, Maranhão, Brazil
[2]Professor of the postgraduate environmental program and the Undergraduate course in Physiotherapy at CEUMA Univesrsity, Sao Luís, Maranhão, Brazil
[3]Biomedicine student at CEUMA Unoversity, Sao Luís, Maranhão, Brazil
[4]Neurologist, Federal University of Maranhão, Sao Luís, Maranhão, Brazil
[5]Master´s student, postgraduate program in environment, CEUMA University, Sao Luís, Maranhão, Brazil
[6]Physiotherapist at Le Santé Institute, Fortaleza, Ceará, Brazil

Introduction
Temporomandibular dysfunction (TMD) is associated with chronic pain such as headaches, a condition correlated with cutaneous allodynia (CA) and central sensitization. However, it is not yet well established in the literature whether individuals with TMD and headaches have a correlation with CA and central sensitization.

Objectives
To correlate the severity of CA and central sensitization with TMD.

Materials and Methods
The study included young adults aged 18 to 40 years, of both genders, excluding those with other chronic diseases such as fibromyalgia and those undergoing treatment for TMD. The diagnosis and severity of TMD were evaluated using the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD), CA using the 12-item Allodynia Symptom Checklist/Brazil (ASC-12/Brazil), central sensitization using the Central Sensitization Inventory (CSI), and headaches using the Headache Screening Questionnaire. The Shapiro-Wilk test was used for normality, Pearson's correlation for correlation analysis, and the ROC curve to establish a cutoff point for the CA score, with a significance level of $p \leq 0.05$.

Results
A total of 163 individuals were evaluated, with 113 having TMD and headaches (GCDTM) and 50 without TMD but with headaches (control group, GC), homogeneous in terms of age, height, body mass index, and sex ($p>0.05$), except for weight ($p=0.023$). A significant positive correlation was observed for GCDTM with CA ($r=0.875$) and central sensitization ($r=0.911$, $p<0.001$) compared to GC. In the ROC curve analysis, the cutoff point for CA was determined to be 1 point.

Conclusion
Individuals with TMD and headaches have a significant positive correlation with CA and central sensitization compared to individuals with headaches but without TMD, highlighting the importance of evaluating TMD in individuals with headaches to establish better treatment strategies and prognosis.

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Temporomandibular disorder changes cervical muscle strength in young adults?

Geovanna Cristina Pereira Alves[1], Josmayara da Silva Caldas[1]; Thayllane Costa Cardoso[1], Camila Vitória de Moraes Costa[1], Rodrigo Sousa Andrade[1], Matheus Rafael Feques Ferreira Nogueira[1], Ryan Pinheiro Castro[1], João Pedro da Fonseca de Paula[1], Gustavo Weyber Pereira Alves[2], Maria Claudia Gonçalves[3]

[1]Student of the Physiotherapy course at CEUMA, University, Sao Luís, Maranhão, Brazil
[2]Doctor graduated from the Federal University of Maranhão, Sao Luís, Maranhão, Brazil
[3]Professor of the postgraduate Program in Environment and the Undergraduate course in Physiotherapy at CEUMA University, Sao Luís, Maranhão, Brazil

Introduction
Literature indicates relationships between temporomandibular disorder (TMD) pain and disability related to the cervical spine, but studies evaluating the strength of cervical muscles, especially in young adults, are still scarce.
Objectives
To evaluate cervical muscle strength in young adults with and without temporomandibular disorder.
Materials and Methods
This study included young adults aged 18 to 25 years from a private university, both with and without a diagnosis of TMD, and in generally good health. Individuals with neck/head trauma; disc herniation and degeneration; systemic diseases such as fibromyalgia, lupus; pregnancy; or anesthetic block in the last 3 months were excluded. Those scoring >50 points on the Fonseca Anamnestic Index questionnaire were considered to have TMD. The Neck Disability Index was used to assess the level of disability related to cervical spine pain. Cervical muscle strength of the flexors and extensors was measured by maximum isometric voluntary contraction using a handheld dynamometer, model 2201163, Lafayette, IN, USA. A significance level of <0.05 was adopted.
Results
A total of n=64 individuals were evaluated, with n=30 in the TMD group, averaging 20 to 22 years of age, with moderate TMD being the most observed (n=34, 53%). A reduction in muscle strength was identified in the TMD group compared to the non-TMD group for all movements, with a significant difference for the flexion movement ($p<0.05$).
Conclusion
Individuals with TMD show lower muscle strength for all cervical spine movements compared to those without the condition, with this difference being significant for the flexion movement.

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Worsening of cluster headache pattern associated with glioblastoma multiforme: a case report

Bruna Maria Cristino Oliveira[1], Beatriz Bagatim Bossa[1], Jean Carlos Bofi Rodrigues[1], Bruna Bobato Cortez[1], Marla Tahana Thompson[1], Luiz Henrique Parra Fenato[1], Camilla Stringuetta Galo[1], Joao Felipe Hermann Costa Scheidt[1], Aline Vitali da Silva[2]

[1]Neurology resident, Hospital Evangélico de Londrina, Londrina, Paraná, Brazil.
[2]Professor, PhD, Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.

Introduction
Cluster headache is the most common trigeminal autonomic cephalalgia, characterized by intense, unilateral headache accompanied by autonomic symptoms1. The recommended investigation includes Brain Magnetic Resonance Imaging (MRI), which is expected to show no abnormalities. On the other hand, glioblastoma multiforme (GBM) is the most common and aggressive primary tumor in adults2, with headache being an unusual presentation.

Objective
To present an unusual case of worsening cluster headache associated with the onset of GBM.

Case Report
An 88-year-old male patient attended the headache clinic at PUC-PR, Londrina-PR, complaining of very severe, right-sided, pulsating headaches, associated with facial flushing, tearing, and ipsilateral rhinorrhea, lasting between 15-20 minutes and occurring 2-3 times a day. The events were more frequent in the late afternoon and early morning and did not improve with common analgesics. He had been experiencing this pain for over 20 years; however, in the past year, it had become more frequent and unremitting. At the time of consultation, his neurological examination and fundoscopy examination were unremarkable. A brain MRI was requested, and an occipital anesthetic block was performed. Before the MRI was performed, the patient suffered a fall with head trauma and began to exhibit mental confusion. The MRI showed an expansive lesion located in the right occipito-temporal region with invasion of the splenium of the corpus callosum and water diffusion restriction measuring 4.5x2.7x4.0 cm, suggestive of GBM. The same examination also identified a subdural hematoma with a thickness of 2 cm. The patient subsequently underwent hematoma drainage. The family chose not to address the tumor lesion. After 4 months, the patient returned to the headache clinic, with his daughter reporting that since the anesthetic block, the patient had not experienced any headache episodes. Finally, 8 months after the initial consultation, the patient died.

Conclusion
Imaging studies are essential in trigeminal autonomic cephalalgias and should not be neglected despite long disease evolution and favorable response to implemented therapy.

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Individuals with headache present increased peripheral cefhalica and extracephalic sensitivity

Rodrigo Sousa Andrade, Matheus Rafael Feques Ferreira Nogueira, Ryan Pinheiro Castro, Ana Lourdes Avelar Nascimento, Sarah Tarcicia Rebelo Ferreira de Carvalho, Pedro Leonardo Pinho, Thiago Rafael Lima Costa, Daniela Bassi Dibai, Almir Vieira Dibai Filho, Maria Claudia Gonçalves

Ceuma University, Sao Luís, Maranhão, Brazil

Introduction

Individuals with headache present changes in the pain threshold due to pressure in the cervical region, however the literature remains controversial regarding the reduction of this parameter in the masticatory muscles.

Objective

To evaluate peripheral sensitization of cephalic and extracephalic regions in individuals with and without headache.

Materials and methods

Case-control study, with young adult individuals with and without headache, aged between 18 and 30 years old and excluding those with other chronic pain such as fibromyalgia, temporomandibular disorder and who had undergone previous orthognathic surgery, treatment for TMD or suffered trauma on the face. The Headache Screening Questionnaire was used to assess the frequency, intensity and duration of attacks and possible diagnosis of headache, and the Fonseca Anamnestic Index was used to verify the presence of temporomandibular disorder, considered as without TMD those who obtained <45 points, which pressure pain threshold was used to verify peripheral sensitization, using the digital algometer (Kratos®, model A-30), in the temporal muscles, masseter, tibialis anterior and thenar region,in a randomized way, three measurements were collected and the average was used.The difference between groups was compared using analysis of variance (ANOVA). The level of statistical significance was p≤ 0.05.

Result

The sample consisted of 79 volunteers, n=45 belonging to the headache group (GCC), with n=13 (28.8%) diagnosed with episodic migraine and n= 32 (71.1%) tension-type headache en= 34 for the control group (CG). homogeneous values were observed regarding age, sex and height p=0.67, except for weight, which was higher in the GCC p=0.053. A significant difference was observed between the groups, for the cephalic, temporal (p=0.001) and masseter (p=0.04) and extracephalic anterior tibial muscles (p=0.002).

Conclusion

Individuals with headache have a reduced pain threshold in the cephalic and extracephalic regions, especially those with migraine, pointing to the need for evaluation and treatment of this condition in patients with headache.

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Epidemiological study of migraine in the state of São Paulo between 2019-2023 and the interference of oral contraceptives

Maria Clara Calixto Caetano[1], Brenda Lopes Brandão[2], Hugo Berdejo Boreggio[3], Júlia Esteca da Silva[4], Karolina Lemos Schuch[5], Letícia Loreta Roque Stetter[6], Lorena Pedro de Oliveira[7], Nicolas França Mota[8]

[1]Medical student at the University of Ribeirão Preto, Ribeirão Preto, Sao Paulo, Brazil
[2]Doctor graduated from Faculdade Dinâmica do Vale do Piranga (FADIP), Ponte Nova, Minas Gerais, Brazil
[3]Graduating from the medicine course at University Center of Ribeirão Preto (IDOMED), Ribeirão Preto, São Paulo, Brazil
[4]Medical student at the Faculty of medicine of Marília (FAMEMA), Marília, Sao Paulo, Brazil
[5]Medical student at the University of Southern Santa (UNISUL), Tubarão, Santa Catarina, Brazil
[6]Medical student at Fundación Héctor Alejandro Barceló, Buenos Aires, Argentina
[7]Medical student at the Faculty Santa Marcelina (FASM), São Paulo, Sao Paulo, Brazil
[8]Graduanting from the medicine course at the Italian University Institute of Rosario (IUNIR), Rosário, Argentina

Introduction
Migraine, a chronic neurovascular disease, manifests as a primary headache disorder with varying degrees of severity. During menstruation, a rapid decrease in estrogen levels often triggers migraine attacks without aura, affecting approximately 50-60% of women. Conversely, high estrogen levels can lead to migraine attacks with aura. Women with a history of migraine with aura are advised not to use combined oral contraceptives (COCs) due to the increased risk of stroke and thromboembolic events. Additionally, those who develop migraines while on medication are recommended to discontinue its use.

Objectives
This study aims to analyze the epidemiological patterns of migraine-related hospitalizations in the state of São Paulo and investigate the influence of oral contraceptives in patients with a prior history of migraine.

Methodology
Conducted as an ecological, retrospective, and descriptive study from DATASUS regarding the epidemiology of migraine in the state of São Paulo from 2019 to 2023, focusing on variables such as hospitalizations, age groups, race/ethnicity, and year of treatment. Articles from the past 10 years in english and portuguese were selected, and a comprehensive literature review on the interference of oral contraceptive use was conducted using the databases PubMed, Scielo, and Electronic Journal Collection Health.

Results
There were a total of 9,316 hospitalizations due to migraine in the state of São Paulo between 2019-2023, with a total of 2,101 in 2023, and the lowest rate in 2021, with 1,517 hospitalizations. There was a predominance of females and white individuals, corresponding to 68.9% (N=6,424) and 58.7% (N=5,476) of cases, respectively. Additionally, research found that around 70% of women in Brazil use some form of contraceptive method, with 23% corresponding to COCs and female sterilization.

Conclusion
The epidemiological profile highlighted a higher prevalence among women and white individuals. The use of combined oral contraceptives emerged as a contributing factor to the occurrence of migraines in women, attributed to estrogen-induced vasoconstriction triggering migraine attacks. Consequently, women with this medical history face a risk of stroke, necessitating careful consideration of contraceptive options.

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RT-qPCR application for analysis of *IL1B* expression in migraine

Vitória Lumi Ogatta[1], Valéria Aparecida Bello[2], Carlos Eduardo Coral de Oliveira[2], Edna Maria Vissoci Reiche[2], Aline Vitali da Silva[2], Regina Célia Poli-Frederico[2]

[1]Medical student PUCPR, Londrina, Paraná, Brazil
[2]Professor of the medicine course PUCPR, Londrina, Paraná, Brazil

Introduction

Migraine is a disabling chronic neurological disease, and its pathophysiology is still unclear. Interleukin (IL) 1β, a pro-inflammatory cytokine, influences migraine pathophysiology by affecting nociceptors and pain sensitivity. Elevated plasma levels of IL-1β in migraine patients have been reported previously. Thus, studying cytokine gene expression in migraine could promove the identification of diagnostic and therapeutic targets for the disease, particularly in relation to inflammation and vascular response modulation.

Objectives

This study aimed to design primers and standardize a method for comparative analysis of IL1B expression based on reverse transcription coupled to real-time polymerase chain reaction (RT-qPCR), in patients with migraine and control patients.

Methods

A pair of sense and antisense primers complementary to the human IL1B gene were designed based on a consensus sequence generated after analysis of nucleotide sequences deposited in GenBank, and PickPrimer software. Subsequently, the primers were assessed for specificity using BLASTn tool and dimer formation with DinaMelt tool. Standardized cDNA and primer concentrations were used for RT-qPCR validation on migraine patient leukocytes obtained from the peripheral blood. RNA extraction from clinical samples was performed using the Trizol®. A comparative analysis of the relative expression of IL1B transcripts was conducted on clinical samples obtained from 50 individuals (32 migraine patients and 18 controls). RT-qPCR was utilized to analyze IL1B gene expression.

Results

Median IL1B expression was 10.7 times higher in migraine patients and 3.4 times in controls, though not statistically significant.

Conclusion

The study identified no significant difference in IL1B transcript levels between migraine patients and controls. Nevertheless, this investigation is pioneering in its approach. RT-qPCR proved to be specific for the detection of IL1B transcripts and can be standardized for the study of other modulators. Future research involving samples from migraine patients during an acute migraine attack could further elucidate the role of IL-1β in migraine pathophysiology.

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Trigeminal neuralgia in a young woman preceding multiple sclerosis

Felipe Cenicio Juliatti[1], Luiza Mansur Braga[1], José Lopes de Vasconcelos Júnior[2], Lorrane Campidelli Arthuzo[3]

[1]Hospital Santa Marcelina, São paulo, São Paulo
[2]Universidade de São Paulo, São Paulo, São Paulo
[3]Irmandade da Santa Casa de Misericórdia de São Paulo, São Paulo, BR

Introduction
Trigeminal neuralgia (TN), a facial pain that is usually unilateral and severe, can be managed with oral drugs or surgical procedures. Its etiology remains uncertain but it may be a manifestation of a demyelinating disease with a 20-fold higher prevalence of TN in this group of patients.
Objective
Demonstrate the presence of trigeminal neuralgia as an initial manifestation of multiple sclerosis.
Case Report
In 2009, a woman 27-year-old started pain in her lower right dental arch, refractory to the use of analgesics, prompting her to see a dentist on two occasions, being informed that there was no change in her teeth. The pain was of strong intensity, in shock, triggered by wind, touch and chewing, lasting 5 to 10 minutes, in the topography of V2 and V3 on the right. She had more than 10 attacks a day, interspersed with periods of remission of up to 6 months without pain.
In 2012, after seeing several specialists, she was diagnosed with trigeminal neuralgia by a neurologist who recommended the use of carbamazepine, which the patient used for 6 months with partial improvement.
Between 2012 and 2015 she presented with weakness and progressive paresthesia in the lower limbs and imbalance. On neurological examination, she had bilateral vertical nystagmus and right hemiface hypoesthesia in V2 and V3. Proximal strenght was grade III and distal grade IV in the lower limbs, with hyperactive reflexes.
The brain MRI showed lesions with hypersignal on T2 and FLAIR in the periventricular white matter, middle cerebellar peduncles and brain stem. Some black holes in T1. There was no contrast uptake. MRI of the cervical spine showed multiple lesions smaller than two vertebral bodies.
Given this, the hypothesis of primarily progressive Multiple Sclerosis with initial manifestation of trigeminal neuralgia was raised.
Conclusion
Patients with Multiple Sclerosis have a prevalence of approximately 3.8% associated with Trigeminal Neuralgia, which may appear as an initial manifestation 5 to 10 years before the first symptom of MS. Trigeminal neuralgia is one of the main causes of neuropathic pain, and in patients with Multiple Sclerosis it can increase rates of anxiety, depression and sleep disorders.

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Treatment of refractory migraine in the emergency unit of the Barbacena Hospital – REDE FHEMIG

Sara Luiza Ronzani da Cunha[1], Mauro Eduardo Jurno[2], Priscilla Garcia de Andrade[3]

[1]Hospital Regional de Barbacena, Barbacena, Minas Gerais
[2] Hospital Foundation of the State of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil
[3]Hospital Geral de Nova Iguaçu, Rio de Janeiro, Rio de janeiro

Headache is one of the primary neurological complaints in emergency departments. It is not uncommon for headaches to persist even with appropriate treatment. The initial evaluation should differentiate between primary and secondary headaches, determine the need for further investigation, and treat the acute pain. Migraines, in particular, are among the most disabling primary headches, affecting quality of life and burdening the healthcare system. Refractory migraine is characterized by the lack of response to standard preventive and acute treatment, requiring a more aggressive therapeutic approach.

The objective of the study is to evaluate the therapeutic response in the treatment of refractory migraine at the Emergency Department of the Barbacena Hospital Complex, two hours after the administration of a combination of 5 mg of intravenous or oral haloperidol and intravenous or oral dexamethasone in patients classified as refractory to initial treatment.

The study was conducted as a prospective observational study with patients considered refractory to initial migraine treatment. Patients who did not respond to at least three adequate dose medications were included. After obtaining consent, demographic data and medical histories were collected, and patients completed the Visual Analog Scale (VAS) to quantify pain. They received 5 mg of haloperidol (oral or intravenous) and 4 mg of dexamethasone (oral or intravenous). After two hours, pain intensity was reassessed and quantified.

The study is ongoing, with data collection from August 1, 2023, to July 31, 2024. However, with the end approaching, it is now possible to evaluate the results and clarify the proposed objective. Currently, there are 16 patients, 15 females and 1 male, with an average age of 28 years. The results are favorable, showing improvement after therapy by at least 2 points on the VAS and a maximum of 10 points, with only one result indifferent to the treatment.

The combination of haloperidol and dexamethasone appears promising in treating patients who do not respond to conventional therapy, providing significant pain relief. This approach can reduce patient morbidity and healthcare costs. Additional studies are needed to optimize the doses and combinations of these medications to maximize efficacy and minimize risks.

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Impact of the implementation of a headache protocol on cost reduction in a private hospital network: a cost-effectiveness assessment

Evelyn Pacheco[1], Saulo Ribeiro, Mariana Okada, José Luís Carneiro, Marcio Nattan Portes Souza[2], Carlos Eduardo Brandão

[1]AMIL Assitencia Medical Internacional S.A., Sao Paulo, Sao Paulo, Brazil.
[2]Hospital das clínicas da Faculdade de Medicina de Universidade de Sao Paulo, Sao Paulo, São Paulo, Brazil

Introduction

The impact of headaches is a problem of enormous proportions, both for the individual and for society. Medical literature has evaluated its individual effects with the prevalence, distribution, frequency and duration of crises and their effects on society, analyzing the socioeconomic burden. (1) And because they are highly prevalent, headaches have a significant impact on the healthcare system, whether public or private. (2)

Objective

The present study aims to evaluate the cost reduction (avoidable cost) involved in emergency care for patients with headache in a private network, after establishing a care protocol and training the teams involved.

Method

Data from 13 private hospitals in the southeastern region of Brazil were retrospectively compared, from January to December 2023, with the same period in 2022 (year of implementation of the institutional protocol and training of the units' teams). The tomography rate, hospitalization conversion rate and rate of use of opioid medications were evaluated, in addition to the analysis of avoidable costs between periods.

Results

There were 45,453 patients treated in 2022 and 58,936 in 2023, with a reduction in the evaluated rates, being 20.6% in the rate of request for imaging exams, 20.3% in the hospitalization conversion rate and 56.3% in the rate of use of opioids in the periods compared.

The avoidable cost related to requesting imaging tests was R$288,692.35 and the total avoidable cost was R$362,941.87.

Conclusion

Given the social relevance of headaches, it is important to establish clear care protocols with training and qualification of teams, this results in better financial and care results.

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Headache: a multifaceted public health challenge

Claudionor Antônio dos Santos Filho[1], Athyrson de Castro Ferreira[1], Ana Flávia de Sousa Barberino[1], Maíra Marçal dos Anjos[1], Paula Katherine Marques dos Santos[2], Marcus Vinicius Matos dos Santos[2], Ana Paula de Sousa Barberino[3], Gleiciele de Castro Ferreira[4]

[1]Medicine student at Faculty Ages, Bahia, Brazil
[2]Medicine student at University Brazil, Sao Paulo, Brazil,
[3]Medicine student at Faculty of Petrolina, Petrolina, Pernambuco, Brazil
[4]Preceptor at Faculty Ages, Bahia, Brazil

Background

Headaches pose a significant public health concern, affecting the quality of life of the global population and ranking among the top medical complaints. They manifest as symptoms of underlying structural or organic alterations, resulting from lifestyle factors, or as primary headaches with unknown etiopathogenesis. This multifaceted nature drives the problematic issue of self-medication, a practice that can lead to dependency and mask underlying conditions.

Objectives

To understand the importance of addressing headaches to prevent exacerbations, mitigate public health burdens in Brazil, and preserve the well-being of patients presenting with this complaint.

Methods

A search was conducted using the BVS (Virtual Health Library) with the descriptors "headache" and "symptom." Exclusion criteria included: (1) studies conducted in other countries; (2) articles that treated headache as a secondary topic; (3) non-article publications. Eight articles were selected after analyzing the results.

Results

Six articles highlight the prevalence of headaches in medical practice, affecting up to 90% of the global population at some point in their lives and requiring urgent care in at least one episode. Thorough investigation is warranted when associated with meningitis, focal neurological symptoms of oculomotor paresis, cranial nerve palsy, hemiparesis, or loss of consciousness. The personal impact on academic performance, lost workdays, and public health consequences, such as healthcare costs and self-medication, are also discussed. Two additional articles address the inconclusive correlation between headache and temporomandibular joint dysfunction (TMJ), while acknowledging it as a common symptom. Finally, the importance of identifying red flags to rule out serious illnesses is emphasized.

Conclusions

This study aimed to underscore the importance of attention to patients presenting with headache complaints. It concludes that due to the diversity of causes and effects, a comprehensive clinical examination should be performed for early detection of treatable conditions and to rule out serious illnesses. Non-pharmacological approaches are valuable allies in achieving favorable outcomes, and encouraging appropriate treatment seeking should be promoted to reduce self-medication practices associated with this condition.

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Epigenetic modulators of migraine: lncRNAs as possible new therapeutic targets

Tainah Dorado de Oliveira[1], Luana Carvalho dos Santos[1], Renan Cassiano Ratis[2], Elcio Juliatto Piovesan[1], Angelica Beate Winter Boldt[1]

[1]Federal University of Paraná, Curitiba, Brazil
[2]Laboratory of Neurosciences and Behavior, Department of phamacy, UNICENTRO, Paraná, Brazil

Long non-coding RNAs (lncRNA) are major epigenetic regulators of genome expression. They interfere in the development of multiple pathologies, including migraine, which affects 14% of the world's population. This systematic review started in June 2024, following the PRISMA protocol with registration in PROSPERO (CRD42024559621) of the following questions: "Which lncRNAs are involved in the development of migraine? What is their role in the disease?" and using the descriptors "lncRNA" and "migraine" in EMBASE, Scopus, Web of Science and Pubmed. After removing duplicates with the Rayan QRCL platform, 38 out of 66 articles remained. After reading the titles, abstracts and full text, three articles were included. We found eight lncRNAs differentially expressed in migraine: PVT1, MEG3, LINC-ROR, SPRY4-IT1, ADINR, DICER1-AS1, NKILA, uc.48+. The first four act on neuropathic pain pathways in nervous tissue, while the next three interact with NF- B (increased NF- B activity probably induces migraine attacks). The last one up-regulates CGPR (a peptide involved in inflammatory pathways that act on migraine, probably through purinergic activation). Patients having migraine with aura present overexpression of PVT1, MEG3, LINC-ROR, and DICER1-AS1, whereas those having migraine without aura overexpress SPRY4-IT and ADINR. Furthermore, migraine patients without aura have lower DICER1-AS1 expression than controls. In addition, we identified eight articles in the Genome-wide Association Studies catalog, reporting associations between headache and genetic variants in 18 other lncRNAs. Among these, five were associated with migraine (LINC01752, ASTN2-AS1, LINC01985, ADAMTSL4-AS2 and UFL1-AS1), but none was mentioned in the articles of the systematic review. They are indeed poorly known, and their roles are best inferred by the neighboring genes whose transcription they probably regulate. The Astrotactin gene (ASTN2-AS1-regulated), presents variants associated with migraine in both European and Asian populations. UFM1-specific ligase 1, regulated by UFL1-AS1, is also associated with migraine both in transcriptomic and proteomic studies. In conclusion, we propose a set of lncRNAs that are possibly involved in regulating the production of migraine-associated genes, as potential targets for therapeutic intervention, also suggesting their inclusion in new experimental designs to elucidate their possible pathophysiological mechanisms in migraine.

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The effect of age and sex on volume and fractional anisotropy values of the trigeminal nerve in healthy young adults

Eduardo Rocha Arruda[1], Carlos Ernesto Garrido Salmon[2,3], Hohana Gabriela Konell[4], Antonio Carlos dos Santos[3]

[1]Department of Neurosciences and Behavioral Sciences, Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil
[2]Department of Physics, Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil
[3]Department of Medical Imaging, Hematology and Clinical Oncology, Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, São Paulo, Brazil
[4]Center for Imaging and Physics Sciences, Department of Medical Imaging, Hematology and Clinical Oncology, Faculty of Medicine of Ribeirão Preto, University of São Paulo Centro de Ciências da Imagem e Física, Ribeirão Preto, São Paulo, Brazil

Introduction
Some chronic orofacial pain diseases have a well-defined etiology, such as classic trigeminal nerve (TN) neuralgia. However, in idiopathic neuralgia, symptoms suggest problems directly in the TN. Studies that evaluate the volume in different regions of interest (ROIs) of the TN in healthy young adults (HYA) contribute to defining a standard of normality, being scarce in the current literature. Additionally, Diffusion Tensor Imaging (DTI) allows white matter integrity to be assessed using diffusion metrics such as fractional anisotropy (FA).

Objective
To evaluate the absolute volume (AV), determine the relationship AV/total brain size (RV), in different ROIs of the TN in HYA. Check the effect of AV, RV, age and sex on FA values in a General Linear Model (GLM).

Method
Structural and diffusion MRI data from 300 HYA, 150 men and 150 women (22 to 35 years old), were obtained from the Human Connectome Project (HCP) database, separated into 3 groups considering age and sex. T1w images were used for bilateral marking of the ROIs: total NT, root entry zone, middle portion of the cistern and Merckel's cave. Marking of ROIs, maps and calculation of FA, VA of ROIs and brain size were done using MRTrix3 software. The results were analyzed using the Kurskal-Wallis test ($p<0.05$) and correlations using GLM.

Results
The effects of sex on AV (male > female) disappear considering RV in relation to total brain size, except for the total volume of the right NT where the effect of larger AV persists in men, regardless of age. In relation to age: in the right Cistern we have an increase and reduction in AV and RV; in Root we have bilateral reduction of AV and RV; in the cave on the right we increase AV and RV. The GLM showed that the variation in FA values is explained by the effect of AV and sex, with the effect of sex being stronger for the model.

Conclusion
AV and FA values are more affected by sex. There is spatial heterogeneity in relation to the evolution of volume with age, affecting more the right side.

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Status migrainosus: an underrecognized and undertreated condition in the emergency department

Taianara Sampaio Reis, Amauri Pereira da Silva Filho, Danielle Cortellazzi Colonna Romano, Gabriela Yumi Nakamura, Melissa Fernandes Vilela de Freitas, Natália Rebeca Alves de Araújo Karpejany, Sabrina Borges Batista

Piaui University Hospital, Teresina, Piauí, Brazil

Introduction

Status migrainosus is a severe, debilitating condition that, if left untreated, can lead to serious complications such as ischemic stroke, dehydration, and electrolyte imbalances. This condition's inflammatory nature can progress to vasculitis of small and medium cerebral vessels, causing ischemic stroke.

Objective

To describe the importance of recognizing status migrainosus for prompt and appropriate treatment to alleviate pain and prevent further complications.

Case Report

A 45-year-old female industrial worker from Campina Grande with a history of migraine since the age of 12 presented to the emergency department for the fourth time in seven days. She experienced severe, continuous, pulsatile hemicranial headache associated with intense nausea, vomiting, phonophobia, and photophobia. Intravenous analgesics, anti-inflammatory drugs, oral triptans, and opioids were prescribed during each visit, but her symptoms persisted, consistent with a migraine. Physical examination revealed poor general condition, dehydration, hypoactivity, intense photophobia, and multiple episodes of uncontrollable vomiting. Neurological examination, cranial CT scan, and cerebrospinal fluid analysis were normal. A diagnosis of status migrainosus was made, prompting urgent investigation and treatment. The patient received intravenous hydration, antiemetics, electrolyte replacement, a high-dose corticosteroid, an antipsychotic, simple analgesics, and a triptan, while avoiding morphine and its derivatives. She showed significant improvement within 36 hours, was discharged with a prophylactic regimen of tricyclic antidepressants, and scheduled for re-evaluation in 15 days.

Conclusion

Status migrainosus represents a severe and debilitating form of migraine that requires immediate medical attention. Recognizing this condition is crucial to ensure patients receive timely and appropriate treatment, preventing complications and improving their quality of life.

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Epidemiological insights into Hospital Admissions for Migraines and Other Headache Disorders in a Central-West City of Paraná

Livia Hoyer Garcia Miranda[1], Catharina Delazari Valério[2], Gustavo Henrique Tomasi[1]

[1]State University of Central-Western Paraná, Cascavel, Paraná, Brazil
[2]Assis Gurgacz Foundation, Cascavel, Paraná, Brazil

Introduction
According to WHO, half of the world's population experiences headaches at some point. Understanding the epidemiology of such a prevalent and debilitating disease is essential for developing policies, organizing healthcare services, identifying associated factors, and assessing public health impacts. Therefore, knowing the epidemiology of headaches in Guarapuava, Paraná is crucial for devising effective clinical management and prevention strategies.

Objectives
Analyze the epidemiological profile of migraines and headaches in Guarapuava, Paraná, from 2009 to 2023.

Methodology
Analytical and retrospective study using data from the SUS Hospital Information System on hospitalizations for migraines and other headaches, without specifying differential diagnoses among pain syndromes, in Guarapuava, Paraná (2009-2023). The study included male and female individuals aged 5 to 80 years or older.

Results
During the period assessed, 178 hospitalizations were reported, with 6 (3.37%) elective and 172 (96.62%) emergency cases. Average stay was 3.2 days, with a total cost of R$ 40,608.63. Of the patients, 52 (29.2%) were male and 126 (70.8%) female, including 2 (1.12%) aged 5-9 years, 16 (8.98%) aged 10-14 years, 15 (8.42%) aged 15-19 years, 28 (15.73%) aged 20-29 years, 35 (19.66%) aged 30-39 years, 31 (17.41%) aged 40-49 years, 24 (13.48%) aged 50-59 years, 15 (8.42%) aged 60-69 years, 9 (5.05%) aged 70-79 years, and 3 (1.68%) aged 80 years or older.

Conclusion
Analysis of data on hospitalizations for headaches in Guarapuava provides insights into epidemiology, economic impact, and demographic characteristics. Most hospitalizations were among females, possibly due to hormonal, genetic, and social factors. The age distribution shows a peak between ages 30 to 49, comprising 37% of cases. A notable number of hospitalizations were also seen among adolescents (17.4%), underscoring headaches as a public health concern across age groups. The high percentage of emergency admissions (96.62%) suggests urgent hospital care needs, reflecting symptom severity or inadequate outpatient management. Understanding specific diagnoses within painful syndromes is crucial. Strategies to improve clinical management and reduce hospitalization costs are necessary for effective health policies addressing prevention and treatment of headaches.

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Hypnic headache in a young patient (35 years old): a rare entity

Sabrina Borges Batista[1], Amauri Pereira da Silva Filho[2], Danielle Cortellazzi Colonna Romano[1], Gabriela Yumi Nakamura[1], Melissa Viledela Fernandes Freitas[1], Natália Rebeca Alves de Araújo Karpejany[3], Taianara Sampaio Reis[3]

[1]University Ninth of July, São Paulo, Brazil
[2]Dom Luiz Gonzaga Fernandes Emergency and Trauma Hospital, Campina Grande, Paraiba, Brazil
[3]Federal University of Piaui, Piaui, Teresina, Brazil

Introduction

Hypnic Headache (HH), known as "Alarm Clock Headache," is a rare primary headache disorder characterized by recurrent episodes that predominantly occur during nighttime sleep. Initially described by Raskin, who reported six cases over nine years, the condition was initially noted to be more prevalent in men. However, current evidence suggests a higher prevalence in women. Though typically associated with patients over 50, there are reports of its occurrence in younger individuals.

Objective

This case report aims to document and describe the clinical presentation, management, and treatment response of a young patient with HH.

Case Report

A 35-year-old female smoker with mild depression has experienced recurrent episodes of headache awakening her from sleep for approximately 14 months. The headaches are diffuse, non-pulsatile, moderate to severe in intensity, lasting 30 to 45 minutes, and resolve spontaneously. There are no associated autonomic changes or focal neurological signs on general, neurological, or imaging examinations (MRI and CT). Treatment with lithium carbonate and melatonin resulted in a significant improvement of approximately 90% in pain intensity within 4 weeks.

Conclusion

This case underscores the importance of recognizing and managing HH in younger patients, where the condition may be less common but equally impactful on quality of life. Further studies are essential to expand our understanding of this rare neurological condition and explore additional therapeutic options. This report aims to provide valuable insights into the clinical presentation and effective management of HH in younger patients.

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Concomitance of migraine and occipital neuralgia: importance of recognition and treatment for the control of both

Taianara Sampaio Reis, Gabriela Yumi Nakamura, Danielle Romano, Sabrina Borges, Melissa Fernandes, Natália Karperjany, Amauri PS Filho

Federal University of Piaui, Piaui, Teresina, Brazil

Introduction

The concomitance of migraine and occipital neuralgia is a rare but significant clinical challenge. Occipital neuralgia often presents with intense, continuous pain that can be mistaken for other headache disorders, complicating diagnosis and treatment.The rarity and complexity of these conditions demand careful diagnostic and therapeutic strategies to achieve optimal outcomes. Effective pain management strategies, including nerve blocks and nerve stimulation, have proven beneficial for many patients, highlighting the critical need for accurate diagnosis and tailored treatment plans.

Objective

Recognize this complex clinical condition early for appropriate treatment.

Case Report

Patient: Female, 32-year-old, diagnosed 5 years ago with partially controlled Chronic Migraine, developed a refractory condition after the sudden onset of a lancinating pain in the right occipital region, of short duration, radiating to the vertex. The migraine, characterized by right hemicrania of moderate intensity, nausea, vomiting, phonophobia, and photophobia, worsened significantly. Imaging studies (CT and MRI of the brain) and neurological examination were normal, except for pain on palpation at the base of the right occipital region (Tinel sign), leading to a diagnosis of Right Occipital Neuralgia. In addition to treatment with Topiramate, a block of the greater and lesser occipital nerves was performed and Gabapentin was introduced, resulting in substantial improvement of both pains. The occipital nerve block was repeated at any sign of worsening occipital pain. Occipital neuralgia, rare and concomitant with other headaches, tends to exacerbate pain and complicate the control of primary headache.

Conclusion

Occipital neuralgia, rare and concomitant with other headaches, tends to exacerbate pain and complicate the control of primary headache. In this case, the coexistence of chronic migraine and occipital neuralgia required a multifaceted treatment approach. Evidence-based interventions such as occipital nerve stimulation and peripheral nerve blocks played a crucial role in managing the patient's symptoms and improving her quality of life. This case underscores the importance of accurate diagnosis and individualized treatment plans in managing complex headache disorders, emphasizing the need for continued research and clinical awareness of such rare conditions to enhance patient outcomes.

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A Scientometric analysis of CGRP and CGRP receptors in migraine research: trends, impact, and therapeutic potential

Gabriela Faria de Oliveira[1], Marcos Vinicius Pupo[2], Kádima Nayara Teixeira[1], Ana Paula Carneiro Brandalize[1]

[1]Federal University of Paraná, Toledo, Paraná, Brazil
[2]Federal Technological University of Paraná, Toledo, Paraná, Brazil

Calcitonin gene-related peptide (CGRP) and CGRP receptors, present in the trigeminovascular system, are found in high concentrations in the jugular plasma during headache attacks. Therefore, the use of CGRP antagonists is being evaluated as a treatment for migraines. In this context, this study aimed to outline information on the state of the art about the relationship between CGRP and CGRP receptors with headaches, as well as the therapeutic approaches that explore this relationship through a scientometric analysis. Published literature from Web of Science database (webofscience.com/wos) was screened following the PRISMA protocol, and 1127 publications that matched the descriptors "headache" or "migraine" and "calcitonin gene-related peptide" in their title and/or abstract were selected. We excluded all review papers, all studies prior to 2014, and those that were not in English or outside this research's scope, leaving 314 original articles. For the analysis of the information, the number of publications in the last decade, country, research areas, journal of publication, and the journal's impact factor were evaluated. In this perspective, there has been an increase in relevance on the subject since 2020, as 215 out of the 314 selected articles, representing 68.5% of the publications in the last 10 years, were published during this period. Additionally, of 166 articles that provided the first author's institutional address, 62 were published in the USA (19.7% of the total publications). This finding suggests a special contribution of this country in this subject, followed by Italy and Denmark, the second and third largest producers, respectively. The research areas most interested in the relationship between CGRP and headache are neuroscience and pharmacology, with 54.1% and 17.9% of the studies, respectively. The average impact factor of all journals analyzed was 8.346, ranging from 0,20 to 202.73, indicating the significance of the CGRP receptors in further knowledge and development of new treatments for migraines.

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Decadal epidemiological profile of hospital admissions for migraines and headaches in Paraná

Catharina Delazari Valério[1], Livia Hoyer Garcia Miranda[2], Gustavo Henrique Tomasi[2]

[1]Assis Gurgacz Foundation, Cascavel, Paraná, Brazil
[2]State University of Central-Western- Paraná, Cascavel, Paraná, Brazil

Introduction
Understanding the epidemiology of a prevalent and disabling disease is essential for shaping healthcare policies and service organizations, identifying associated factors, and assessing the health impacts on the population. Therefore, understanding the epidemiology of headaches in Paraná is crucial for developing strategies and public policies for clinical management and prevention of these conditions.

Objectives
To outline the epidemiological profile of hospital admissions for migraines and other headache disorders in Paraná from 2014 to 2023.

Methodology
This retrospective and analytical study utilized data from the Brazilian Unified Health System's Hospital Information System concerning hospitalizations due to migraines and other headache disorders in Paraná from 2014 to 2023, having no difference between diagnostic categories of painful syndromes. The study included individuals of both genders, aged 15 to 79 years.

Results
13,287 hospitalizations were reported during the study period. Of these, 12,305 (92.6%) were urgent admissions and 982 (7.39%) were elective, with an average length of stay of 2.6 days, totaling R$7,222,753.27 in healthcare costs. Regarding the demographic profile of hospitalized patients, 8,319 (62.61%) were female and 4,968 (37.38%) were male.
Among female patients, 574 (6.9%) were aged 15 to 19 years, 1,556 (18.7%) were aged 20 to 29 years, 1,497 (18%) were aged 30 to 39 years, 1,705 (20.5%) were aged 40 to 49 years, 1,443 (17.35%) were aged 50 to 59 years, 1,022 (12.3%) were aged 60 to 69 years, and 522 (6.3%) were aged 70 to 79 years. For male patients, 265 (5.3%) were aged 15 to 19 years, 741 (14.9%) were aged 20 to 29 years, 844 (17%) were aged 30 to 39 years, 935 (18.8%) were aged 40 to 49 years, 950 (19%) were aged 50 to 59 years, 826 (16.6%) were aged 60 to 69 years, and 407 (8.2%) were aged 70 to 79 years.

Conclusion
This study provides a comprehensive overview of hospitalizations due to migraines and headaches in Paraná, highlighting the gender and age distribution of affected individuals over a nine-year period. These findings are crucial for developing targeted healthcare interventions and policies aimed at improving clinical management and prevention strategies for these conditions.

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Epidemiological profile of women admitted for migraine and other headache syndromes in the southern region of Brazil, between 2018 and 2023

Maria Clara Calixto Caetano[1], Brenda Lopes Brandão[2], Hugo Berdejo Boreggio[3], Júlia Esteca da Silva[4], Karolina Lemos Schuch[5], Letícia Loreta Roque Stetter[6], Lorena Pedro de Oliveira[7], Nicolas França Mota[8]

[1]Medical student at the University of Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[2]Doctor graduated from Faculdade Dinâmica do Vale do Piranga, Ponte Nova, Minas Gerais, Brazil
[3]Graduating from the medicine course at Centro Universitário Estácio de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[4]Medical student at the Faculty of Medicine of Marília, Marília, São Paulo, Brazil
[5]Medical student at the University of Southern Santa Catarina, Tubarão, Santa Catarina, Brazil
[6]Medical student at Fundación Héctor Alejandro Barceló, Buenos Aires, Argentina
[7]Medical student at Faculdade Santa Marcelina, São Paulo, São Paulo, Brazil
[8]Graduating from the medicine course at the Italian University Institute of Rosario Rosário, Argentina

Introduction
Migraine is a chronic neurological disorder that negatively influences personal, economic, and social aspects of individuals' lives, as well as reducing health-related quality of life. Its highest incidence occurs among middle-aged individuals, with women being the most affected. Regarding monthly headache days, about one-third of migraine sufferers experience four or more days, and approximately 7% have 15 or more days. Acute therapy aims to alleviate pain and restore function during attacks, while preventive treatment aims to reduce the frequency and severity of episodes. Disease progression can occur in some individuals, underscoring the importance for physicians to identify modifiable risk factors to enhance patients' quality of life. The majority of migraine sufferers seek medical care in primary healthcare settings, highlighting the critical need for these professionals to be prepared to manage the condition.

Objective
To identify the epidemiological profile of women hospitalized for migraine and other headache syndromes in the Southern region of Brazil between 2018 and 2023.

Methods
Ecological, cross-sectional, retrospective, and descriptive study conducted through data collection from the Hospital Information System of the Unified Health System (SIH/SUS), linked to DATASUS, focusing on variables such as age, race/ethnicity, type of care, and hospital service costs.

Results
A total of 16,488 women were hospitalized for migraine and other headache syndromes. The year 2019 had the highest number of admissions (4,052), while 2021 had the lowest (1,820). Of these, 17.3% (2,907) were women aged 40-49 years, 16.8% were aged 30-39 years, 15.4% were aged 20-29 years, and the least affected age group was under 1 year (0.1% - 18 cases). Regarding race/ethnicity, 81.6% (13,449) were White, 8.8% (1,450) were Mixed Race, 2.5% (418) were Black, 0.7% (117) were Yellow, 0.02% (4) were Indigenous, and 6.3% (1,050) did not have race information available. 93.5% of admissions were for urgent care, while only 6.5% were elective. The total hospital service costs during this period amounted to R$ 7,755,801.34, with 2019 having the highest cost (R$ 2,100,630.40) and 2021 the lowest (R$ 762,862.42). The age group with the highest costs was 40-49 years (R$ 1,467,777.68), while the lowest was under 1 year (R$ 2,820.53).

Conclusion
This study reveals, through the epidemiological profile of women hospitalized for migraine and other headache syndromes in the Southern region of Brazil between 2018 and 2023, that 2019 had the highest number of admissions and highest costs. The most affected age group, and consequently the most costly, was 40-49 years old. White individuals were the most affected by race, and the majority of admissions were for urgent care. Therefore, understanding the specific epidemiological patterns of this condition in these patients is crucial for providing adequate and personalized healthcare.

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Epidemiological analysis of hospitalizations for migraine and other headache syndromes in southern Brazil between 2019 - 2023

Maria Clara Calixto Caetano[1], Brenda Lopes Brandão[2], Hugo Berdejo Boreggio[3], Júlia Esteca da Silva[4], Karolina Lemos Schuch[5], Letícia Loreta Roque Stetter[6], Lorena Pedro de Oliveira[7], Nicolas França Mota[8], Ceilijane Almeida Silva[9]

[1]Medical student at the University of Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[2]Doctor graduated from Faculdade Dinâmica do Vale do Piranga, Ponte Nova, Minas Gerais, Brazil
[3]Graduating from the medicine course at Centro Universitário Estácio de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[4]Medical student at the Faculty of Medicine of Marília, Marília, São Paulo, Brazil
[5]Medical student at the University of Southern Santa Catarina, Tubarão, Santa Catarina, Brazil
[6]Medical student at Fundación Héctor Alejandro Barceló, Buenos Aires, Argentina
[7]Medical student at Faculdade Santa Marcelina, São Paulo, São Paulo, Brazil
[8]Graduating from the medicine course at the Italian University Institute of Rosario Rosário, Argentina
[9] Universidade Facisa, Campina Grande, Paraiba, Brazil

Introduction
Migraine is a disease primarily characterized by pulsating headaches of moderate to severe intensity, often accompanied by other symptoms such as nausea, vomiting, and sensitivity to light and sound. Migraine is a common complaint, with Brazil reporting a total of 51,269 hospitalizations due to migraines and other headache syndromes. The Southern region of Brazil accounted for 25.86% of the recorded cases, totaling 13,260 hospitalizations from 2019 to December 2023.

Objective
To map the epidemiological profile of hospitalizations in the Southern region of Brazil from 2020 to 2023.

Methodology
This ecological, descriptive, retrospective study utilized data from the Department of Informatics of the Unified Health System (DATASUS) of the Ministry of Health, collected from January 2019 to December 2023.

Results
The total number of individuals hospitalized for migraine and other headache syndromes in the Southern region was 13,260, with 2019 having the highest number of hospitalizations (4,017) and 2021 the lowest (1,771). Women were the most affected, representing 65% (8,566) of cases, while men accounted for 35.4% (4,694). The predominant age group was 40 to 49 years, with 17.37% (2,303) of cases reported, and the least affected age group was under 1 year, with 0.13% (17) cases reported. The white race accounted for 81.25% of reported cases.

Conclusion
Analyzing the epidemiological profile of the population residing in the Southern region of Brazil hospitalized for migraine and other headache syndromes between 2019 and 2023 reveals that 2019 had the highest number of hospitalizations. The most affected age group was 40 to 49 years, and women were the most impacted gender. The most affected ethnicity was white. Therefore, elucidating the specific epidemiological patterns of this region is vital for implementing appropriate and individualized healthcare measures.

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Analysis of hospitalizations of individuals aged 20 to 59 years for migraines and other headache syndromes in the southeastern region of Brazil from 2019 to 2023

Hugo Berdejo Boreggio[1], Karolina Lemos Schuch[2], Maria Clara Calixto Caetano[3], Letícia Loreta Roque Stetter[4], Lorena Pedro de Oliveira[5], Brenda Lopes Brandão[6], Nicolas França Mota[7], Celijane Almeida Silva[8], Júlia Esteca da Silva[9]

[1]Graduating from the medicine course at Centro Universitário Estácio de Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[2]Medical student at the University of Southern Santa Catarina, Tubarão, Santa Catarina, Brazil
[3]Medical student at the University of Ribeirão Preto, Ribeirão Preto, São Paulo, Brazil
[4]Medical student at Fundación Héctor Alejandro Barceló, Buenos Aires, Argentina
[5]Medical student at Faculdade Santa Marcelina, São Paulo, São Paulo, Brazil
[6]Doctor graduated from Faculdade Dinâmica do Vale do Piranga, Ponte Nova, Minas Gerais, Brazil
[7]Graduating from the medicine course at the Italian University Institute of Rosario Rosário, Argentina
[8]Student of the medicine course at Centro Universitário Unifacisa, Campina Grande, Paraíba, Brazil
[9]Medical student at the Faculty of Medicine of Marília, Marília, São Paulo, Brazil

Introduction
Migraines and headaches are neurological conditions that impact quality of life and can require hospitalizations. This study analyzes hospitalizations for these conditions in individuals aged 20 to 59 years in the southeastern region of Brazil from 2019 to 2023, using data from the SIH/SUS of DATASUS.

Objective
To analyze the profile of hospitalizations for migraines and other headache syndromes in the southeastern region of Brazil, among individuals aged 20 to 59 years, from 2019 to 2023.

Method
This is an ecological, descriptive study with a quantitative approach. It was conducted using data from the Hospital Information System of SUS (SIH/SUS) from DATASUS, focusing on the panel "Migraines and Other Headache Syndromes" (ICD G43 and G44). The variables used were sex, race/color, and age group (20 to 59 years), specifically in the southeastern region of Brazil, from January 2019 to December 2023.

Results
During the analyzed period, it was found that hospitalizations of individuals aged 20 to 59 years for migraines and other headache syndromes totaled 33,656 cases. In the southeastern region, 30.18% of this total (N=10,159) were concentrated. Within the southeastern region, the year 2023 had the highest percentage, with 22.63% (N=2,299), and 2021 had the lowest, with 16.39% (N=1,665). There was a predominance among females, white individuals, and those aged 35 to 39 years, accounting for 72.04% (N=7,319), 46.96% (N=4,771), and 14.47% (N=1,470), respectively.

Conclusion
Hospitalizations for migraines and headaches in southeastern Brazil show a higher incidence among women, white individuals, and those aged 35 to 39 years. These results highlight the need for targeted health policies for the prevention and proper treatment of these conditions.

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Characterization of headache in individuals with hemifacial spasm

Míriam Carvalho Soares[1], Mariana de Almeida Cruz Silva[2], João Augusto de Macedo Cavalcanti de Albuquerque[2], Clélia Maria Ribeiro Franco[1,3], Pedro Augusto Sampaio Rocha Filho[1,3]

[1]Hospital das Clínicas, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[2]Medical Sciences Center, Federal University of Pernambuco, Recife, Pernambuco, Brazil
[3]Oswaldo Cruz University Hospital, Recife, Pernambuco, Brazil

Background
Hemifacial spasm (HFS) is defined by involuntary facial contractions. There is little research about headache in HFS patients, although it is commonly observed in practice.
Objective
To characterize headache in HFS patients and its associations.
Methods
Cross-sectional study of 59 HFS patients. Patients with cognitive impairment, use of botulinum toxin in last three months or headache prophylactic drugs and other movement disorders were excluded. Following instruments were used: questionnaire of headache (intensity in visual analog scale: VAS, frequency and location), hemifacial spasm grading questionnaire (HFS-Score) for clinical severity and quality of life; hospital anxiety and depression scale (HADS), headache impact test (HIT-6) and insomnia severity index (ISI).
Results
Among 59 patients, 39 (66.1%) were female, mean age was 65.9 years (SD: 12.9). Average diagnosis time was 15.5 years (SD: 8.5) and most common side was left: 36 (61%). 31 patients (52.5%) mentioned headache and its time of onset was 18.1 years (IQR: 12.9). 14 (45.1%) patients mentioned that headache started or worsened after spasm onset. Headache intensity was 6 (IQR: 3.4), frequency 2.8 (IQR: 3,4) days/month and HIT-6 score was 52 (IQR: 24). Most frequent headache locations were: frontal: 14 patients (45.1%), parietal: 11 (35.4%), holocranial: 4 (12.9) and temporal: 2 (6.4%). Headache was bilateral in 19 patients (61.2%), alternating between right and left in 5 (16.1%), left-sided in 4 (12.9%) and right-sided in 3 (9.6%). Headaches types were: migraine without aura: 11 patients (35.4%), migraine with aura: 9 (29%), episodic tension-type: 8 (25.8%), chronic tension-type and chronic migraine in 1 case (3.2%) each. Patients with insomnia had higher frequency of headache (p: 0.045, Mann-Whitney test). No association was found between headache and spasm laterality, or between headache severity (intensity, HIT-6 or frequency) and spasm severity. No relations between headache and anxiety/depression were identified.
Conclusion
This study showed a considerable frequency of headache in HFS. No association between the laterality of headaches and the laterality of hemifacial spasm was observed. Although a large number of patients reported a worsening of their headaches after hemifacial spasm, there was no association between headache severity and the severity of hemifacial spasm.

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Neuralgia do trigêmeo secundária: relato de caso de espessamento da dura-máterno cavum do trigêmeo por doença relacionada à IgG4

Laura Marina Beccaluva, Maria Virginia Borras, Daiana Magalí Micucci, Ana Karina Guevara, Federico Anrriquez, Fiorella Bertuzzi, Daniel Eduardo Doctorovich, Manuel Pérez Akly

[1]Hospital Italiano de Buenos Aires. Sección Cefaleas y Algias Craneales.

Introdução

A neuralgia do trigêmeo é caracterizada por episódios breves e recorrentes de dor unilateral semelhante a choques elétricos, de início e término abruptos, na distribuição de uma ou mais divisões dos três ramos (V1, V2, V3) do quinto nervo craniano (nervo trigêmeo), que normalmente são desencadeadas por estímulos inócuos (critério diagnóstico). Considera-se que pode ter diversas causas: típica (conflito neurovascular), secundária (lesões do sistema nervoso central) e idiopática (não foi possível identificar a causa). Embora as causas secundárias sejam as menos comuns, todo paciente com suspeita de neuralgia do trigêmeo deve ser submetido a uma imagem cerebral para identificar as causas e determinar o tratamento. Neste relato de caso, um paciente apresenta uma patologia imunomediada rara que levou ao envolvimento do trigêmeo, responsivo aos corticosteróides (algo não comum na neuralgia do trigêmeo).

Objetivo

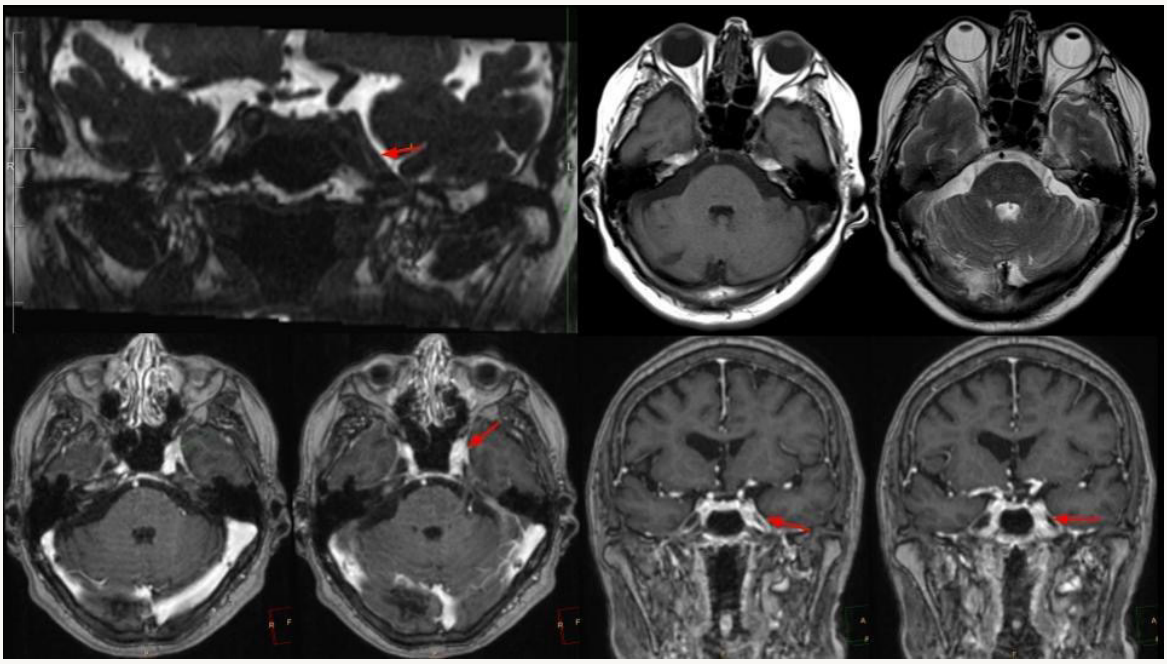
Apresentação de um caso clínico de neuralgia do trigêmeo secundária ao espessamento da dura-máter no cavum do trigêmeo por doença relacionada à IgG4.

Caso

Paciente imunocompetente, 87 anos, consultado por dor facial esquerda há dois anos nos ramos V1, V2 e V3. Embora inicialmente os episódios tenham sido isolados, nos últimos meses tornaram-se muito mais frequentes e dolorosos diante de estímulos sensoriais de mastigação, fala e faciais. Ele nunca havia feito tratamento, nem consultado prontamente por causa dessa dor facial. Características da dor: episódios elétricos paroxísticos com duração de segundos (entre 20/30 episódios por dia). Diante da suspeita de neuralgia do trigêmeo, foi iniciada carbamazepina como primeira linha de tratamento, com resposta inicial parcial, e solicitada ressonância magnética cerebral com angiores-sonância magnética com protocolo CISS/FIESTA. A ressonância magnética relatou: espessamento da dura-máter no setor anterior do cavum trigêmeo esquerdo, com realce pós-contraste. Dentre os diagnósticos diferenciais, foi sugerido considerar a possibilidade de envolvimento por doença inflamatória idiopática (eventualmente relacionada à IgG4). Diante deste achado, o paciente foi avaliado pela equipe HIBA IgG4, que solicitou todos os exames laboratoriais correspondentes para confirmar o diagnóstico. O paciente obteve controle completo das crises com carbamazepina 100 mg a cada 8 horas e dose baixa de dexametasona.

Conclusão

A baixa frequência destas patologias imunomediadas que podem levar ao comprometimento do nervo trigêmeo nos obriga a considerar trabalhar com uma equipe multidisciplinar e a avaliar outras alternativas terapêuticas não convencionais.



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Cefalea por abuso de analgésicos - reporte de un caso: ¿rimegepant como alternativa para la deshabituación de analgésicos?

Daiana Magali Micucci, Laura Beccaluva, Ana Karina Guevara, Fiorella Martin Bertuzzi, Frederico Anrriquez, Maria Virginia Borras, Daniel Eduardo Doctorovich

Hospital Italiano de Buenos Aires. Sección Cefaleas y Algias Craneales.

Introducción

la cefalea por abuso de analgésicos (CAA) es un desafío terapéutico en pacientes con cefalea crónica. Este reporte presenta un caso en el que rimegepant, un antagonista del receptor de CGRP aprobado para la migraña episódica, fue eficaz en el tratamiento de la CAA. Se discutirán los detalles clínicos y las implicaciones de este tratamiento.

Objetivo

uso de nuevas terapias preventivas para la migraña como estragiq para la deshabituación de analgésicos.

Caso clínico

paciente de sexo de 62 años de edad, con antecedente de migraña crónica sin aura y cefalea por abuso de analgésicos (ergotamina) de larga data. Otros AP: HTA, ex TBQ, DLP y depresión.

Preventivos previos

topiramato, amitriptilina y toxina botulínica. Respuesta nula según relato. Realizó en múltiples oportunidades deshabituación con corticoides. Alta dependencia a ergotamina. Al interrogatorio dirigido refiere: dolor diario, de diferentes características y una dependencia psicológica (trabajada en conjunto con psiquiatría) al consumo de ergotamina como medicación habitual. También usaba ergotamina de rescate. Consumo aproximado: 35/50 comprimidos de compuestos con ergotamina por mes. La paciente afirmó ausencia de respuesta a otros analgésicos/Medicación psiquiátrica: lamotrigina, olanzapina y venlafaxina. La paciente refiere necesidad imperiosa de tomar migrañal para evitar "dolor basal". Se le propuso a la paciente reemplazar un comprimido de ergotamina por rimegepant (ya que el rimegepant se toma día por medio). Después de 6 meses de tratamiento la paciente disminuyó el consumo de ergotamina a 10/15 comprimidos al mes. Refiere tener hasta 8/10 días libres de dolor.

Conclusión

este caso demuestra que el rimegepant, un antagonista del receptor de CGRP aprobado para la migraña episódica, puede ser una opción terapéutica efectiva en pacientes con cefalea por abuso de analgésicos. La paciente, con una larga historia de dependencia a la ergotamina y migraña crónica sin aura, experimentó una notable reducción en el consumo de ergotamina y un aumento en los días sin dolor tras 6 meses de tratamiento con rimegepant. Estos hallazgos sugieren que el rimegepant podría ofrecer una alternativa viable para el manejo de la cefalea por abuso de analgésicos, aunque se requieren más estudios para confirmar su eficacia y seguridad en esta población específica.

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Persistent post-traumatic headache in a pediatric patient with cerebral venous thrombosis: a case report

Assia Jihad Jomaa, Ana Francisca de Barros Brandalise, Renato Endler Iachinski, Gabriel Angelo Garute Zenatti, Ivo Marcos Darella Lorenzin Fernandes Neto

Assis Gurgacz Foundation University Center, Cascavel, Paraná, Brazil

Introduction

The most common symptom of post-traumatic headache (PTH) is a significant overlap with the symptoms of migraine or tension-type headache. The clinical of cerebral venous thrombosis (CVT) includes isolated headache or increased intracranial pressure, focal neurological presentations, subacute encephalopathy and cavernous sinus syndrome with multiple cranial neuropathies. CVT resulting from TBI processes in pediatrics is considered rare. Only 4% of the cases with TVC are associated with TBI.

Objective

This presentation aims to demonstrate an atypical case of CVT following TBI in a pediatric patient, associated with persistent headaches. Therefore, discusses the importance of an early differential diagnosis between PTH and headache related to CVT in order to reduce the risk of unfavorable outcomes.

Case presentation

Male, 5 years, manifesting persistent headache 48 hours after the TBI to the occipital region. In addition, on neurological admission he presented with inconsolable crying and 2 episodes of emesis, not preceded by nausea. Physical examination showed no focal deficits. A non-contrasted computed tomography (CT) scan of the skull was performed to better investigate the condition, which revealed a diastasis of the occipitomastoid suture on the left, with no other alterations. Was discharged with symptomatic treatment and monitored. After 48 hours, he was readmitted to the service due to a new sudden episode of headache, associated with episodes of emesis. A new skull CT scan showed hyperdensity in the region of the left transverse sinus. Was followed up with venous angiography of the skull, which showed a failure of the flow signal in the left transverse and sigmoid sinus, extending to the distal internal jugular vein, compatible with cerebral venous thrombosis. After diagnosis, full anticoagulation and strict neurological observation were initiated. Discharged without any neurological deficits and complete resolution.

Conclusion

This is an atypical case in pediatric patient of persistent PTH related to CVT. Treatment of the condition must be individualized according to each case. Currently, there are no specific guidelines on therapeutic resources for resolving cases of persistent headache related to trauma.

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Análise cienciométrica dos anticorpos monoclonais utilizados no tratamento da enxaqueca disponíveis no Brasil

Allan Cezar Faria Araujo Júnior, Davi Diniz e Souza Santa Rosa, Gabriel Souza da Rosa, Jayme Euclydes Picasky da Silveira Freitas, Alcântara Ramos de Assis César, Kádima Nayara Teixeira

Federal University of Paraná, Toledo, Paraná, Brazil

Introdução

Os anticorpos monoclonais (mAb) anti-CGRP (Calcitonin Gene-Related Peptide) responsáveis por bloquear a ação do CGRP, um neuropeptídeo crucial na fisiopatologia da enxaqueca que causa vasodilatação e inflamação neurogênica, têm se apresentado como uma opção terapêutica adicional para o tratamento preventivo da enxaqueca crônica. No Brasil, estão disponíveis os mAb Galcanezumab, Fremanezumab, Eptinezumab e Erenumab.

Objetivo

Mensurar a produção científica sobre mAb para prevenção de enxaqueca crônica, avaliar seu interesse mundial e opções no Brasil.

Métodos

A coleta de dados foi realizada no banco de dados Web of Science utilizando os descritores "monoclonal antibody" e "migraine" com o operador booleano AND, abrangendo um período de 10 anos (2014-2024). A estratégia de pesquisa seguiu o protocolo PRISMA (Preferred Reporting Items in Systematic Reviews and Meta-Analyses). Inicialmente, foram identificados 1.192 artigos. Os critérios de inclusão consideraram apenas artigos científicos originais, redigidos em inglês. Foram excluídos ensaios clínicos, pesquisas fora do tema, cartas, editoriais, "meeting abstracts", revisões, artigos duplicados, análises "post-hoc", relatos de caso, meta-análises, diretrizes e análises retrospectivas. Por fim, 243 artigos foram avaliados. As variáveis analisadas incluíram a data, o número de publicações por ano e o mAb utilizado. Para a estratificação dos dados, análise estatística e análise cienciométrica, foram empregados os programas Zotero, Microsoft Office Excel e VOSviewer, respectivamente.

Resultados

Os resultados revelaram publicações sobre os mAb anti-CGRP, Onabotulinumtoxin-A, Tonabersat, Botulinum toxin type A. O maior número de publicações foi sobre o mAb Erenumab (197), seguido do Galcanezumab (90), do Fremanezumab (81) e do Eptinezumab (9). O número de publicações sobre os mAb utilizados no tratamento da cefaleia aumentou gradativamente nos últimos 10 anos, com um crescimento significativo a partir de 2020 e atingindo seu pico máximo em 2024.

Conclusão

Os mAb anti-CGRP são uma opção terapêutica crescente no tratamento preventivo da enxaqueca crônica, com aumento de estudos e interesse devido à sua eficácia clínica. No Brasil, o Erenumab se destaca entre as opções disponíveis. Este estudo oferece um panorama sobre os mAb anti-CGRP, destacando suas posições na literatura científica e orientando estratégias terapêuticas mais eficazes para cefaleia.

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Sphenopalatine ganglion block in refractory cluster headache: a case report

Luis Armando Sawada, Beatriz Marques dos Santos, Lorrane Campidelli Arthuzo, Thasssia Cavalcante Moraes de Oliveira, Ana Carolina Storarri, Annelise Akemi Higa Lee, Bruno Pissolati Mattos Gonzaga, Renan Barros Domingues

Santa Casa de Misericórdia Hospital in São Paulo, São Paulo, Brazil

Introduction

Cluster headache is a severe and debilitating trigeminal-autonomic headache. It is often underdiagnosed, has few therapeutic options, and in 10-20% of cases, patients can be refractory to acute and prophylactic medications.

Objective

To describe a difficult to manage cluster headache responsive only to sphenopalatine block

Case Report

A 58-year-old woman presented with intense, right-sided orbital pain, with 60-minute duration attacks occurring 1-2 times a day, mostly at night. These were associated with right-sided ptosis, conjunctival hyperemia, lacrimation, and rhinorrhea. The patient had previously tried prophylactic treatment with verapamil 320 mg/day, achieving only partial reduction in attacks. Valproic acid and lithium were added at different times to optimize treatment but were discontinued due to adverse reactions. Initially, the cluster headache responded to prednisone 1 mg/kg; however, due to long-term effects, the medication was tapered off, leading to a return of attacks shortly after.

Acute treatment with sumatriptan (oral and subcutaneous) resulted in poor responses, providing only mild relief. In most cases, complete relief was achieved only with oxygen therapy in the emergency department. Due to the refractory nature of the condition, bilateral occipital nerve block with lidocaine and dexamethasone was performed while maintaining verapamil at 320 mg/day. However, the patient still experienced severe headaches, responsive only to oxygen therapy.

Finally, an alternative approach using a sphenopalatine ganglion block was performed. The patient showed significant improvement on the same day of the procedure, with complete resolution of attacks and no need for any medications. This improvement was maintained in the subsequent days, allowing her to return to normal daily activities.

This case highlights the complexity of cluster headaches management and underscores the importance of an individualized approach in treatment. Although occipital nerve block is evidenced to be effective for many patients, therapeutic response can vary. In this case, the sphenopalatine ganglion block proved to be a safe and effective alternative, providing complete symptom relief.

Conclusion

Thus, it is crucial to consider individual characteristics when choosing treatment, recognizing that the sphenopalatine ganglion block can be a viable and highly effective option for patients with refractory cluster headaches.

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Physiopathology of peripheral sensitization and mechanism of action of gabapentin in occipital neuralgia

Letícia Pereira Arce, Carolina Muller Dias, Cristiane Ribeiro, Giselle Hech, Matheus Freitas Macorim, Naiara Fabiana De Larmelin, Pablo Guarisco Ferreira, Sara Pessoa de Oliveira, Alcântaa Ramos de Assis César

Federal University of Paraná

Introduction

Peripheral sensitization (PS) characterized by hypersensitivity of nociceptors is a key process in the pathophysiology of occipital neuralgia (ON). PS amplifies neuronal excitability and pain perception due to upregulation of ion channels and receptors. Gabapentin seems to treat ON by mitigating PS and providing analgesic relief in neuropathic pain.

Objectives

This study aims to summarize the literature regarding the physiopathology of PS in ON and to comprehend gabapentin's mechanism of action in ON.

Methods

In May 2024, three searches were conducted in MEDLINE, LILACS, and PubMed databases. Using the descriptors "peripheral sensitization" AND "Physiology" 227 results were obtained; "Gabapentin" AND "Pharmacology" OR "Neuralgia" yielded 756 results; and "Occipital Neuralgia" AND "Physiology" OR "Physiopathology" 380 results. After applying inclusion criteria for analysis, 33 articles were analyzed, resulting in 4, 14, and 15 articles for each subtheme respectively.

Results

ON is characterized by severe paroxysmal attacks of headaches, throbbing or stabbing in quality, at the suboccipital region. Other symptoms include scalp tenderness and trigger points. The pronociceptive functions involved in the pathogenesis of pain result from damage to the occipital nerves causing PS, where primary inflamed afferent neurons become hyperresponsive. Inflammatory mediators like prostaglandins and cytokines sensitize nociceptors, while nerve injuries alter ion channels, increasing neuronal excitability. The inflammatory-sensitive receptor TRPV1 upregulates, and damaged nerve fibers release nerve growth factor (NFG), further amplifying sensitivity. Underlying mechanisms of ON include the role of calcitonin gene-related peptide (CGRP) in maintaining hypersensitivity and contributing to pain perception. Gabapentin's efficacy in ON is attributed to its interaction with the 2 subunit of voltage-gated calcium channels, reducing the influx of calcium and diminishing neurotransmitter release. As a result, it reduces neuronal excitability and mitigates pain.

Conclusion

PS is crucial to understanding ON's pathophysiology. The hypersensitivity and increased pain perception are influenced by inflammatory mediators and receptors, such as TRPV1 and CGRP. Gabapentin indirectly manages ON and provides analgesic relief by modulating calcium channels and reducing neuronal excitability. Further research is needed into gabapentin's mechanisms and potential applications in ON to enhance therapeutic strategies.

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Spontaneous intracranial hypotension secondary to CSF-venous fistula: a case report

Maria Julia de Souza Padulla, Mohamad Ali Hussein, Milena Amandine Odorizzi, Carolina Brun Ferrarini, Karen Arissa Iwase, Pedro André Kowacs, Camila Carneiro Ferreira, Guilherme Ramina Montibeller, Kristofer Ramina

Introduction

Spontaneous cerebrospinal fluid hypotension (CSFH) is characterized by an abnormal reduction in cerebrospinal fluid (CSF) pressure, which commonly leads to secondary orthostatic headache and incapacitating symptoms such as nausea, vomiting, pulsatile tinnitus, neck pain, and dizziness. The etiologies are challenging for neurologists, neurosurgeons, and radiologists, especially when dealing with CSFH due to a CSF-venous fistula (CVF); a recent discovery that requires a meticulous approach and detailed imaging studies, such as ultrafast dynamic CT myelography.

Objective

To highlight the importance of early diagnosis of CSFH due to CVF using ultrafast dynamic CT myelography, in comparison to conventional CT myelography, for an accurate and effective approach.

Case Report

A 59-year-old male patient sought specialized care at a hospital in southern Paraná in May 2022, with complaints of orthostatic headache, sudden bilateral tinnitus, continuous and worse in silence. Cranial CT and MRI revealed bilateral subdural collections and pachymeningeal enhancement, raising suspicion of spontaneous cerebrospinal fluid hypotension. A non-guided blood patch was performed as a treatment. After the procedure, there was no clinical improvement, and the patient returned to the hospital after seventeen days. These sequential events led to the performance of neuroaxis MRI and conventional CT myelography, which reinforced the diagnosis of CSFH, with a new blood patch being requested. One month later, the patient was admitted with signs of mental confusion and slight motor coordination loss due to the worsening of the subdural collection. An ultrafast dynamic CT myelography was then performed, revealing a right posterolateral T8-T9 level CSF--venous fistula. With the definitive CSF-venous fistula localization, the patient underwent subdural fluid drainage and CVF surgical correction.

Conclusion

Ultrafast dynamic CT myelography for CVF cases has a high positive predictive value, capable of identifying the exact location of the leak. Therefore, it should be considered in CSFH cases with orthostatic headache patterns and therapeutic failures.

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Association between global climate changes and headache hospitalizations in Brazil

Vinícius Ryan de Melo Ferreira[1]; Otávio da Cunha Ferreira Neto[2]; Guilherme Nobre Nogueira[3], Victor Egypto Pereira[4], Erlene Roberta Ribeiro dos Santos[5], Luiz Severo Bem Junior[6], Hildo Rocha Cirne de Azevedo Filho[7], Marcelo Moraes Valença[8]

[1]Unifacisa – University Center, Medicine Department, Campina Grande, Paraíba, Brazil
[2]Catholic University of Pernambuco, Medicine Department, Recife, Pernambuco, Brazil
[3]Federal University of Ceará, Medicine Department, Fortaleza, Ceará, Brazil
[4]MD, Anesthesia and Pain, Department of Orthopedics and Anesthesiology, University of São Paulo, Ribeirão Preto, SP, Brazil
[5]PhD, Neuropsychiatry and Behavioral Sciences, Federal University of Pernambuco, PE, Brazil
[6]MD, Neurosurgery Department, Hospital da Restauração, College of Medical Sciences, Unifacisa University Center, Campina Grande, PB, Brazil
[7]MD, PhD, Neurosurgeon, Neurosurgery Department, Hospital da Restauração, Recife, PE, Brazil
[8]MD, PhD neurosurgeon, Neurosurgery Department, Federal University of Pernambuco, PE, Brazil

Introduction
Headache is one of the most common medical complaints and can affect all ages and lifestyles. This complaint is old and as it was studied it became clear that it varies in intensity and duration. Currently, it is clear how environmental factors can influence the frequency and severity of headaches. Studies suggests that climate changes, such as an increase in the planet's temperature and changes in the atmosphere can worsen headache episodes and this is visible in the increase in the number of hospitalizations for headache over the years.

Objective
To analyze the incidence of hospitalization cases due to headache associated with climate change in Brazil between 2000 and 2022.

Methods
Descriptive, cross-sectional study with a quantitative approach to time series analysis. Data from DATASUS/TABNET were selected, considering records of hospitalizations resulting from migraine and headache attacks, which occurred in all states of Brazil, from January 2000 to December 2022, correlating with the climate changes that occurred during this same period. n.

Results
The analysis showed a significant increase in the number of hospitalizations between the analyzed period, coinciding with an increase in ambient temperature. 772 cases were observed in 2020 and 10,406 cases in 2022, an increase of approximately 13 times. While the temperature in 2000 showed little variation, from 2011 to 2020 there was a deviation in temperature of up to 0.9°C. Furthermore, another important increase in the number of cases was observed in the northeast region, coinciding, again, with an increase in ambient temperature. The year 2000 with only 51 reported cases, 2008 with 426 cases and 2022 with 3459 registered cases, representing 33.2% of Brazil's total cases in 2022.

Conclusion
It is important to recognize and address the significant impacts of climate change on neurological health. The results of this study suggest another perspective that has been less studied so far, showing that the increase in hospitalizations for headache coincides with the increase in ambient temperature in the country. Therefore, there is a need for actions related to climate change that can protect the neurological health of the population most susceptible to these changes.

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Non-Pharmacological approaches in migraine treatment: literature review

Bruna Verdi Scabeni[1], Cinara Leitão Pereira[2], Gabriela Maria Vicente de Melo[3], Heulália Teodora Cerqueira Gonçalves[4], Julia Cavalcanti Brito[5], Marcela Guedes Ferreira da Silva[6], Nara Emilly Sanches de Carvalho[7]

[1]Pato Branco University Center, Pato Branco, Paraná, Brazil
[2]Federal University of Roraima, Boa Vista, Roraima, Brazil
[3]Federal University of Rio Grande, Rio Grande, Rio Grande do Sul, Brazil
[4]María Serrana Private University, Assunção, Paraguai
[5]Federal University of Vale do São Francisco, Petrolina, Pernambuco, Brazil
[6]Federal University of Bahia, Salvador, Bahia, Brazil
[7]Pontifical Catholic University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil

Introduction
Migraine has various triggering factors, whether environmental, psychological, or biological, commonly reported during early childhood and adolescence. Despite the high prevalence of underdiagnoses, treatments, when administered, demonstrate low adherence due to their complexity. The interaction of various drugs, which can be ineffective or contraindicated, as well as triggering unpleasant side effects, can lead to other complications such as the chronicization of headaches and medication overuse. Therefore, non-pharmacological measures have been considered in recent years.

Objective
to analyze the different non-pharmacological approaches in the treatment of migraine, their indications, and to understand which ones have the greatest clinical efficacy. Methods: the present study is a literature review, where scientific articles were searched in the PubMed and Google Scholar databases, addressing the management of migraine and its non-pharmacological treatments. Randomized clinical trials and systematic reviews from the last 7 years were included in the research.

Results
the biofeedback technique increased the efficacy of pharmacological treatment, leading to a reduction in the use of analgesics and the frequency of migraines. Mindfulness meditation as a prophylactic treatment was as effective as prophylactic medication in reducing the frequency of migraine attacks. Aerobic exercises combined with amitriptyline reduced migraine attacks more than amitriptyline alone. Acupuncture demonstrated efficacy comparable to botulinum toxin A and topiramate. Vagus nerve stimulation and transcranial magnetic stimulation were effective in reducing the frequency and intensity of migraines. The use of nutraceuticals such as magnesium and riboflavin showed efficacy in the treatment of migraine.

Conclusion
this study highlighted the significant impact of non-pharmacological therapies in the treatment of migraine patients, making it clear that drugs are not the only treatment options for pain management. Understanding these alternatives is important for reducing polypharmacy and improving patients' quality of life.

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Chronic daily headache: literature review on management and prevention

Bruna Verdi Scabeni[1], Andrina Pereira de Araújo[2], Eloisa Gonçalves da Silva[3], Júlia Mascarello[4], Karine Vitória Viana da Costa[5], Marcela Guedes Ferreira da Silva[6], Millena Silva de Oliveira[7], Nicole Reis Nascimento[8]

[1]Pato Branco University Center, Pato Branco, Paraná, Brazil
[2]Federal University of Amapá, Macapá, Amapá, Brazil
[3]Jaguariúna University Center, Jaguariaúna São Paulo, Brazil
[4]Assis Gurgacz College, Casacavel, Paraná, Brazil
[5]State University of Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil
[6]Federal University of Bahia, Salvador, Bahia, Brazil
[7]Unigranrio University Afya, Rio de Janeiro, Brazil
[8]Campo Mourão Integrated University Center, Campo Mourão, Paraná, Brazil

Introduction
Chronic daily headache (CDH) has a multifactorial etiology and is defined as a migraine lasting more than 4 hours per day for 15 or more days per month. It can be subdivided into three modalities: chronic tension-type headache, new daily persistent headache, transformed migraine, and hemicrania continua. Its high prevalence is a significant public health issue, given the substantial impact on individuals' quality of life and the high cost to public and private sectors.

Objective
To understand the management and prevention of chronic daily headache.

Methods
This research is a narrative literature review, with scientific articles sourced from Google Scholar, LILACS, PubMed, and BVS databases. The descriptors used were "chronic daily headache," "management," and "prevention." Inclusion criteria were (a) articles available in English and Portuguese and (b) articles available for free. Exclusion criteria were (a) articles that do not fit the theme and (b) not available for free.

Results
Patients with CDH often manifest psychological symptoms and psychosomatic manifestations, usually presenting a significant family history of headaches. The quality of pain is variable, ranging from pressure-like to tightness, and may also include stiffness or tension in the neck muscles. Regarding pain location, the most common topographies are bifrontal, occipitonuchal, bitemporal, vertex, and holocranial. The primary management approach is prophylactic medication treatment, where the choice of the agent should be based on the type of CDH, side effects, and comorbidities presented. Examples of medications include antidepressants, antiepileptics, antihypertensives, and anti-serotonergic drugs. Another measure is the implementation of non-pharmacological therapies, such as cognitive-behavioral therapies and healthy lifestyle habits, with special attention to sleep.

Conclusion
Chronic daily headache is a challenge for medical care in terms of its management and prevention, given the variety of diagnostic alternatives and the diversity of disorders that contribute to the development of this condition. Thus, it is evident that CDH is a generalist term and "diagnosis," making it necessary for the neurologist to perform differential evaluations to determine the type of headache and its appropriate treatment.

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Medication-Induced headaches: a literature review on epidemiology

Bruna Verdi Scabeni[1], Beatriz Pereira Fernandes[2], Julia Lopes Hemza[3], Laís de Souza Almeida[4], Lucas de Oliveira Woehl[5], Rafaela Milene Machado Martins[6]

[1]Pato Branco University Center, Pato Branco, Paraná, Brazil
[2] Estacio de Sa University, Rio de Janeiro, Rio de Janeiro, Brazil
[3]Anhembi Morumbi University, São Paulo, São Paulo, Brazil
[4]Federal University of Mato Grosso, Campo Grande, Mato Grosso do Sul, Brazil
[5]University of Planalto Catarinense, Lages, Santa Catarina, Brazil
[6]Positive University, Curitiba, Paraná, Brazil

Introduction
Migraine has various triggering factors, whether environmental, psychological, or biological, commonly reported during early childhood and adolescence. Despite the high prevalence of underdiagnoses, treatments, when administered, demonstrate low adherence due to their complexity. The interaction of various drugs, which can be ineffective or contraindicated, as well as triggering unpleasant side effects, can lead to other complications such as the chronicization of headaches and medication overuse. Therefore, non-pharmacological measures have been considered in recent years.

Objective
to analyze the different non-pharmacological approaches in the treatment of migraine, their indications, and to understand which ones have the greatest clinical efficacy.

Methods
the present study is a literature review, where scientific articles were searched in the PubMed and Google Scholar databases, addressing the management of migraine and its non-pharmacological treatments. Randomized clinical trials and systematic reviews from the last 7 years were included in the research.

Results
the biofeedback technique increased the efficacy of pharmacological treatment, leading to a reduction in the use of analgesics and the frequency of migraines. Mindfulness meditation as a prophylactic treatment was as effective as prophylactic medication in reducing the frequency of migraine attacks. Aerobic exercises combined with amitriptyline reduced migraine attacks more than amitriptyline alone. Acupuncture demonstrated efficacy comparable to botulinum toxin A and topiramate. Vagus nerve stimulation and transcranial magnetic stimulation were effective in reducing the frequency and intensity of migraines. The use of nutraceuticals such as magnesium and riboflavin showed efficacy in the treatment of migraine.

Conclusion
this study highlighted the significant impact of non-pharmacological therapies in the treatment of migraine patients, making it clear that drugs are not the only treatment options for pain management. Understanding these alternatives is important for reducing polypharmacy and improving patients' quality of life.

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The CGRP receptor-associated protein RAMP1 gene variant rs3754701 determines medication use and analgesic overuse in patients with chronic migraine

Lucas Yuji de Azevedo Kayano[1], Regina Celia Poli-Frederico[1], Valéria Aparecida Bello[1], Edna Maria Vissoci Reiche[1], Aline Vitalli da Silva[1], Carlos Eduardo Coral de Oliveira[1]

Pontifical Catholic University of Paraná, Londrina, Paraná, Brazil

Introduction

Migraine is a debilitating neurological illness that causes severe headaches and other unpleasant symptoms on a regular basis. Although some people are more predisposed to migraines than others, there are many variables that might bring on an episode or modify disease prognosis. Research has shed light on the fact that migraine susceptibility is influenced by gene variants. RAMP1 protein is involved in the terminal glycosylation, maturation, and presentation of the CGRP receptor into the cell surface. RAMP1 rs3754701 is a single nucleotide variant, located in the promoter region, where a change in A to T allele may impact a transcription binding site, and affect RAMP1 and CGRP receptor expression.

Objectives

Compare the allele frequencies of RAMP1 rs3754701 in migraine patients and controls and investigate the influence on clinical parameters of disease.

Methods

In a retrospective study, 177 migraine patients and 177 healthy controls were genotyped using a real-time polymerase chain reaction allelic discrimination assay. After adjusting for potential confounding variables, logistic regression analysis was used to assess the connection between gene variant and clinical parameters.

Results

No evidence of risk association was found between the RAMP1 variant and disease susceptibility nor clinical presentation, except for the presence of sensitive aura for T allele carriers (odds ratio [OR] 5.75; 95% confidence interval [CI] 1.62 – 18.7; p= 0.008). In addition, T allele carriers were more likely of using topiramate (OR 4.6; 95%CI 1.24 – 17.3; p= 0.02). T allele carriers with chronic migraine were more likely of using prophylactic drugs (OR 3.55; 95%CI 1.28 – 10.3; p= 0.01), and topiramate (OR 21.3; 95%CI 1.80 – 27.1; p= 0.005). Notably, carriers of RAMP1 rs3754701 AA genotype displayed a higher risk of analgesic overuse (vs T allele carriers, OR 3.77; 95%CI 1.06 – 13.1; p= 0.04).

Conclusion

These findings indicate that RAMP1 rs4752701 may play an important role in drug responsiveness and medication overuse in patients with chronic migraine. Identifying patients with certain RAMP1 genotypes may improve therapy options for headache episodes. Larger population studies are required to validate these prominent results.

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Anxiety is correlated with the RAMP1 rs3754701 AA genotype in patients with migraine

Lucas Yuji de Azevedo Kayano[1], Regina Celia Poli-Frederico[1], Valéria Aparecida Bello[1], Edna Maria Vissoci Reiche[1], Aline Vitalli da Silva[1], Carlos Eduardo Coral de Oliveira[1]

Pontifical Catholic University of Paraná, Londrina, Paraná, Brazil

Introduction

The most common neurovascular condition affecting people globally is migraine. Numerous areas of the neurological system are affected by migraine; headache symptoms are related to the activation of the trigeminal pathway. A crucial molecule in the progression of migraine is calcitonin gene-related peptide (CGRP), a potent vasodilator neuropeptide involved in nociception, motor function, secretion, and olfaction in the cranial vasculature, acting through interaction with its receptor. RAMP1 is an accessory protein, required for cell surface expression, ligand binding and signaling of CGRP receptor. A single nucleotide variant of RAMP1, called rs3454701 A>T, may impair protein expression, alter CGRP responses and modify migraine-associated symptoms.

Objectives

Investigate whether the RAMP1 rs3754701 genotypes contribute to the symptoms associated with migraine.

Methods

In a retrospective study, 177 migraine patients were genotyped using Taqman® allelic discrimination assay. Migraine-associated symptoms were assessed through scores: anxiety – STAI-Y1, STAI-Y2, GAD-7; depression – BECK; migraine disability – MIDAS; migraine impact – HIT6; allodynia – ASC-12; and hyperacusis – HQ. The relationship between a gene variation and symptoms was evaluated using correlation analysis.

Results

Most symptoms failed to demonstrate a correlation between RAMP1 rs3754701 and the outcomes of the study ($p>0.05$). Otherwise, patients with the AA genotype showed higher scores on the GAD-7; RAMP1 rs3754701 was strongly associated with general anxiety (rho= -0.853; $p=0.031$).

Conclusion

These results suggested that RAMP1 rs3754701 gene variant might influence anxiety in patients with migraine.

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Cefaleia numular multifocal: relato de um caso

Daiana Magalí Micucci, Laura Marina Beccaluva, Ana Karina, Fiorella Martin Bertuzzi, Federico Anrriquez, María Virginia Borras, Daniel Eduardo Doctorovich

Hospital Italiano de Buenos Aires. Seção de Cefaleias e Algias Cranianas

Introdução

A cefaleia numular é um tipo de cefaleia caracterizada por dor de duração variável (geralmente crônica) em uma área circunscrita do couro cabeludo, comumente descrita pelo paciente como circular ou em forma de moeda. A área dolorosa pode estar localizada em qualquer parte da cabeça, sendo mais comum na região parietal. Além disso, pode apresentar exacerbações espontâneas sobrepostas à dor de fundo e ser acompanhada de hipoestesia, disestesia, parestesias, alodinia e/ou hipersensibilidade.

Objetivo

Relatar um caso de cefaleia numular, detalhando o processo diagnóstico, os achados clínicos e as estratégias terapêuticas, a fim de contribuir para o conhecimento e compreensão desta condição rara na prática. Promover a identificação precoce e o tratamento adequado dos pacientes afetados

Caso

Paciente do sexo feminino, 67 anos, com antecedentes de hipertensão arterial, ex-tabagista, tremor essencial e dermatite seborreica. Em janeiro de 2024, começou a apresentar cefaleia hemicraniana esquerda de algumas horas de duração. Durante a anamnese dirigida, descreveu três pontos dolorosos em diferentes localizações: frontal, parietal e occipital, com contornos definidos e arredondados, cada um com cerca de 6 cm de diâmetro. Apresentava exacerbações, alodinia severa, disestesias e hipersensibilidade do couro cabeludo. A dor era tipicamente aliviada com aplicação de frio local.

Tratamentos realizados

Amitriptilina, duloxetina, bloqueios de lidocaína e rimegepant. Não houve resposta significativa a múltiplos esquemas analgésicos e apenas resposta parcial à indometacina. Foram realizadas ressonância magnética do cérebro e angiorressonância,que não mostraram achados relevantes. Iniciou-se tratamento com topiramato 25 mg/dia, com boa resposta.

Conclusão

O diagnóstico de cefaleia numular multifocal constitui um desafio não apenas pela sua baixa prevalência, mas também pela abordagem diagnóstica, que neste caso foi baseada em uma anamnese minuciosa, falha a repetidos tratamentos e os critérios diagnósticos do ICHD III. Outro diagnóstico diferencial considerado foi a cefaleia diária persistente de novo. Relatar este caso é relevante para a detecção precoce e a intervenção necessária para um melhor prognóstico, já que a condição pode afetar significativamente a qualidade de vida dos pacientes.

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Status migrainosus: an underrecognized and undertreated condition in the emergency department

Taianara Sampaio Reis, Amauri Pereira da Silva Filho, Danielle Cortellazzi Colonna Romano, Gabriela Yumi Nakamura, Melissa Fernandes Vilela de Freitas, Natália Rebeca Alves de Araújo Karpejany, Sabrina Borges Batista

Piaui University Hospital, Teresina, Piauí, Brazil

Introduction

Status migrainosus is a severe, debilitating condition that, if left untreated, can lead to serious complications such as ischemic stroke, dehydration, and electrolyte imbalances. This condition's inflammatory nature can progress to vasculitis of small and medium cerebral vessels, causing ischemic stroke.

Objective

To describe the importance of recognizing status migrainosus for prompt and appropriate treatment to alleviate pain and prevent further complications.

Case Report

A 45-year-old female industrial worker from Campina Grande with a history of migraine since the age of 12 presented to the emergency department for the fourth time in seven days. She experienced severe, continuous, pulsatile hemicranial headache associated with intense nausea, vomiting, phonophobia, and photophobia. Intravenous analgesics, anti-inflammatory drugs, oral triptans, and opioids were prescribed during each visit, but her symptoms persisted, consistent with a migraine. Physical examination revealed poor general condition, dehydration, hypoactivity, intense photophobia, and multiple episodes of uncontrollable vomiting. Neurological examination, cranial CT scan, and cerebrospinal fluid analysis were normal. A diagnosis of status migrainosus was made, prompting urgent investigation and treatment. The patient received intravenous hydration, antiemetics, electrolyte replacement, a high-dose corticosteroid, an antipsychotic, simple analgesics, and a triptan, while avoiding morphine and its derivatives. She showed significant improvement within 36 hours, was discharged with a prophylactic regimen of tricyclic antidepressants, and scheduled for re-evaluation in 15 days.

Conclusion

Status migrainosus represents a severe and debilitating form of migraine that requires immediate medical attention. Recognizing this condition is crucial to ensure patients receive timely and appropriate treatment, preventing complications and improving their quality of life.

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Integrative review: MABS x Topiramate as a prophylactic treatment of migraine

Marcelo Alvarenga de Carvalho Neto, Paola Regina Mombach Lazzaron, Cristiano de Bem Torquato de Souza, Danielle Rodrigues da Silva

Universidade Federal do Paraná, Curitiba, Paraná

Introduction

Migraine is associated with central sensitization, a process involving increased excitability of neuronal membranes and decreased inhibitory influences, resulting in the chronicization of migraine pain. In this context, the pharmacodynamics of most preventive drugs involve suppressing pain signal transmission in central sensitization, thereby preventing chronic pain and its consequences. They are indicated for patients with frequent disabling migraine attacks or medication-refractory attacks. Monoclonal antibodies against calcitonin gene-related peptide (CGRP antagonists) innovate by blocking CGRP through crosstalk via trigeminal peripheral neuron blockade. Topiramate, an anticonvulsant, reduces neuronal excitability through modulation of ion channels and suppression of trigeminal neuron activation and excitatory neurotransmission.

Objective

To evaluate the efficacy and mechanism of action of each anti-CGRP mAb in the preventive treatment of migraine, through comparisons with the action of Topiramate, using an integrative review.

Methods

Electronic searches were conducted in the MEDLINE (PubMed) and LILACS databases using the descriptors "Calcitonin Gene-Related Peptide Receptor Antagonists" and "migraine", were included clinical trials, controlled and randomized trials, and meta-analyses related to studies in adults, with full-text available for free, published between 2020 and 2024, addressing MABS.

Results

Erenumab is a CGRP receptor antagonist, while Fremanezumab, Eptinezumab, and Galcanezumab antagonize the CGRP peptide. All showed early response in studies, with 12-week treatment, presentating consistent efficacy in treatment-naive and refractory patients. Their monthly subcutaneous administration, except for Eptinezumab, intravenous, favors adherence and pharmacodynamics, without the need for adjustments for hepatic/nephropathies. Erenumab outperformed Topiramate in efficacy, onset of results and fewer side effects. Fremanezumab had the highest overall response rate, Galcanezumab and Fremanezumab were superior in reducing days with symptoms in episodic migraine. In chronic migraine, Fremanezumab had less impact, while Erenumab and Eptinezumab were more effective. Eptinezumab showed better safety and Galcanezumab had more side effects. The price of antibodies far exceeds that of Topiramate, with higher costs for Erenumab and Eptinezumab.

Conclusion

The mechanism of action of mAbs holds great potential in the future of migraine prophylactic treatment, presenting high importance in refractory cases. However, their conditions hinder widespread prophylactic distribution; high cost and low dissemination still restrict benefits to patients with contraindications, side effects, and refractory cases to oral prophylactic treatment. Thus, one way to increase population access to mAbs is through government investment to make this medication available through SUS (Brazil's Unified Health System), thereby enhancing the therapeutic efficacy for headaches.

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Hospitalization and thrombolysis or dual antiplatelet therapy in hemiplegic migraine patients: a cohort of 21 patients from a tertiary headache center

Alberto Jorge Castelo Branco Roque[1], João José Freitas de Carvalho[1], Raimundo Neudson Maia Alcântara[1], Mário Hermes Rios França[1], Virna Victória Almeida Sampaio[2], Matheus Rolim Mendes de Alencar[1], Hanne Castelo Branco Roque[2]

[1]Neurologist, Fortaleza General Hospital, Fortaleza, Ceará, Brazil.
[2]General practitioner, Fortaleza General Hospital, Fortaleza, Ceará, Brazil.

Introduction

Hemiplegic migraine (HM) is a rare form of migraine that closely mimics stroke, often leading to hospitalizations. In resource-limited settings, distinguishing between HM and stroke is crucial to avoid unnecessary and costly treatments such as thrombolysis (TICI) and dual antiplatelet therapy (DAPT) and their risks. Typically, with clinical and laboratory evaluations alongside computed tomography (CT), the incidence of stroke mimic admissions can be reduced to 4-6.5%. This study aimed to evaluate the hospitalization rates and use of TICI and DAPT in HM patients followed up in a tertiary headache service.

Methods

A retrospective cohort study was conducted on 21 patients diagnosed with HM at our Headache Outpatient Clinic in Fortaleza, Brazil. Data collected included demographics, clinical history, hospitalization status, and treatment details. Statistical analyses were performed to identify correlations between hospitalization and stroke treatments.

Results

The study included 21 HM patients (mean age 37.67 years, SD 9.65; 95.2% female). Hospitalization was required for 66.7% (14/21) of the patients due to suspected acute cerebrovascular events. Among hospitalized patients, 9.5% (2/21) received thrombolysis, and 14.3% (3/21) were administered DAPT, exceeding the typical stroke mimic admission rates of 4-6.5% after CT evaluation. The decision for hospitalization was strongly correlated with suspected stroke ($r = 0.90$) but the option to perform thrombolysis or prescribe DAPT did not correlate with any of the other variables studied.

Conclusion

Hospitalization due to suspected stroke is common among HM patients. The administration of thrombolysis and DAPT, though limited, exceeds typical rates seen in stroke care. This underscores the need for precise diagnostic criteria and cautious use of costly, risky unnecessary treatments to manage HM effectively especially in resource-limited settings.

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The pathophysiology of the development of migraine from estrogen in women of childbearing age: review

Valentina Gasparim, Carolina Langaro Brockmann, Giovanna Lourenço Cavagnoli, Lara Sabrinna Noronha Lima, Luís Fernando Rafalski Pereira, Thaís Barbosa Mourão Gomes, Patricia Leen Kosako Cerutti

Federal University of Paraná, Curitiba, Paraná, Brazil

Introduction

Changes in estrogen levels can trigger headaches, including estrogen-associated migraine. These changes can occur naturally (e.g., menstruation, pregnancy, menopause) or can be induced (e.g., hormonal contraceptives, hormone replacement therapy, anti-estrogen agents).

Objective

The aim of this review is to investigate the pathophysiology of the development of migraine from estrogen in women of childbearing age.

Method

This Integrative Literature Review was developed based on the steps described by Marcela Tavares de Souza, Michelly Dias da Silva and Rachel de Carvalho (Albert Einstein Israelita Hospital), in the article: "Integrative review: what is it? How to do it?". To assess and analyze literature data we searched for the following terms: (Estrogen) AND ("Migraine Disorders ") AND (Physiopathology) (MESH or text words) in PubMed and Medline (acess through the Biblioteca Virtual em Saúde), and yielded 19 relevant studies. We included original articles and reviews, in full, which respond to the objective of the study and which are in Portuguese or in English. We excluded research that did not reach the objective, articles that did not cover the theme or animal or in vitro testing.

Results

The studies consistently reveal a significant association between abrupt estrogen ''withdrawal'' during the late luteal phase and the pathophysiology of menstrual migraine. The drop in estrogen levels may have a pro-nociceptive effect as its main route, facilitating cortical responses to painful stimuli, through its association with ERK, modulation of the trigeminovascular system and the serotonergic, opioid, noradrenergic, glutamatergic and GABAergic neurotransmitter systems . Studies also indicate that the increase in prostaglandin levels and the vasodilatory effect mediated by estrogen withdrawal are important factors in the pathophysiology of migraine. Other studies suggest an association between mineral homeostasis and oxidative stress with the incidence of headaches mediated by female sex hormones. One study suggested that high plasma concentrations of estrogen appear to be associated with migraine attacks with aura. The action of progesterone still has ambiguous results.

Conclusion

The action of estrogen on the pathophysiology of migration occurs through many distinct pathways. Understanding these means is necessary to develop efficient treatments that increase patients' quality of life.

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Semiological and Epidemiological Aspects of Difficult-to-treat Chronic Migraine - Resistant Form

Heitor Silva Isnoldo[1], Rogger Antunes[1], Marco Antonio Takashi Utiumi[2], Ivo José Monteiro Marchioro[2], Pedro André Kowacs[2], Elcio Juliato Piovesan[2]

[1]Hospital das Clínicas, Federal University of Paraná, Curitiba, Paraná, Brazil
[2]Department of Internal Medicine, Neurology Service, Headache Outpatient Clinic of Hospital das Clínicas, Federal University of Paraná, Curitiba, Paraná, Brazil

Introduction
Patients with migraines who lose their nociceptive control capacity evolve into a chronic form that is difficult to manage, with limited therapeutic options. In extreme situations, they can progress to a refractory form, unresponsive to currently available and tested treatments.
Objective
To determine the semiological and epidemiological aspects of a population with chronic migraine that is difficult to treat in its resistant subtype.
Material and Methods
Patients with chronic migraine that is difficult to treat and/or resistant were allocated to a cross-sectional study conducted at the Headache Clinic of the Clinical Hospital of the Federal University of Paraná. Semiological and epidemiological aspects, as well as comorbidities such as anxiety, depression, allodynia, primary stabbing headache, daytime sleepiness, autonomic symptoms, and quality of life were evaluated.
Results
99 patients with chronic migraine (57.6% in the resistant subtype) were evaluated, with a mean age of 54.6±13.5 years, 82.8% female, BMI of 26.2±4.4, 53.5% married, and 56.6% with a medium or higher education level. The average duration of pain in years was 26±16.6, with a pain intensity of 7.3±2.1 points (VAS). Prophylactic treatment was ineffective in 90.9% of cases. In the past 12 months, 66.7% reported worsening, with an increase in duration in 75%, intensity in 60.3%, and frequency in 67.6%. The number of days with pain in the last three months was 21.1±9.1 days/month. Triggers for pain intensification were reported by 97% of cases (emotional stress 87.9% and physical stress 78.8%). Premonitory symptoms were present in 98% of cases (visual 67.7%, phonophobia 65.7%, cognitive decline and irritability 60.6%, photophobia 58.6%, osmophobia 57.6%, and neck pain 49.5%). The pain location was frontal in 70.7% and occipital in 49.5%, with pulsatile characteristics (49%) and/or compressive (28.6%), and autonomic symptoms in 63.6%, with conjunctival hyperemia and tearing being the most reported (29.3% and 22%). Primary stabbing headache was described by 48.5% and allodynia by 54.1%. Anxiety scale (GAD7) was 12.9±6.4, depression (PHQ) 13.6±7.2, quality of life (MIDAS) 92.7±75.9, and sleepiness (Epworth) 7±5.
Conclusion
The clinical and epidemiological characteristics of difficult-to-treat chronic migraine, and its resistant subtype were thoroughly described in this study.

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Pituitary tumor simulating cluster headache

Amauri Pereira da Silva Filho, Taianara Sampaio Reis[1], Danielle Cortellazzi Colonna Romano[2], Melissa Fernandes Vilela de Freitas[2], Gabriela Yumi Nakamura[2], Natália Rebeca Alves de Araújo Karpejany[1], Sabrina Borges Batista[2]

[1]University Hospital of the Federal University of Piauí, Teresina, Piauí, Brazil
[2]Nove de Julho University, São Paulo, São Paulo, Brazil

Introduction
Pituitary tumors are neoplasms that arise in the pituitary gland, a critical structure for the regulation of the body's hormonal functions. Headache is a frequently reported symptom in patients with pituitary tumors.
Objective
Highlighting the importance of considering alternative diagnoses in patients presenting atypical with cluster headaches.
Case Report
Patient, male, 42 years old, with periocular pain radiating to the right temporal region, associated with malaise and vomiting. He had intermittent headaches lasting a few minutes several times a day. These headaches always occur at similar times and partial drooping of the right eyelid and tearing, which have occurred in several previous episodes. After the emergency room (ER), he had partial relief with intravenous dipyrone and nasal oxygen (O2), and a probable diagnosis of cluster headache was made. Due to the high frequency of headaches (7 days per month), a decision was made to initiate prophylactic treatment with verapamil in addition to abortive treatment. Additionally, he presented with a visual field defect (bitemporal hemianopsia). The MRI with and without contrast showed an expansive sellar and suprasellar process with slight extension into the cavernous sinus. The diagnosis was revised to a pituitary macroadenoma, and the patient was referred for surgical treatment.
Discussion
Pituitary tumors account for approximately 17% of all intracranial neoplasms with the majority being pituitary adenomas. Often, these are found incidentally during a workup for headache, in special the trigeminal autonomic cephalalgias (TACs). The TACs include cluster headache, paroxysmal hemicrania, short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing, and hemicrania continua, and can be mimicked by symptomatic causes in a small minority of patients, for example tumors, dissections and infections, but a causal relationship between the underlying lesion and the headache is difficult to determine in many cases.
Conclusion
A pituitary tumor presenting with cluster headache is challenging to diagnose due to the variability of symptoms and the need to accurately identify the headache type. The main challenge is to create a treatment plan that effectively addresses both conditions, minimizes side effects, and improves the patient's quality of life through multidisciplinary care.

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Challenges in dual etiology diagnosis: probably idiopathic intracranial hypertension and systemic arterial hypertension in a case of headache with facial palsy

Marcell Maduro Barbosa[1], Filipe Virgilio Ribeiro[1], Laura Dias Borges, Ana Karen de Medeiros, Gabriel Geraldo Ribeiro Silva, Isabela Basso Veloso, Isabela Santos Guimarães, Maria Alice da Costa Ximenes, Thales Roque Bonifácio da Silva, Frederico Nakene Nakano[2]

[1]Barão de Mauá University Center, Sao Paulo, Brazil
[2]Faculty of Medicine of Ribeirão Preto, Ribeirão Preto, Sao Paulo, Brazil

Introduction
The facial palsy secondary to Idiopathic Intracranial Hypertension (IIH) is an uncommon clinical condition, with relatively few studies, mostly case reports - some pointing to a probable traction of the facial nerve or simply its edema due to intracranial hypertension. The Systemic Arterial Hypertension (SAH) is a known cause of cranial neuropathies, but it most often affects cranial nerves 3, 4, and 6 – furthermore, the facial palsy due to SAH is more common in children.

Objectives
The objective is to describe the challenges of the etiological diagnosis of facial paralysis with two possible pathophysiologies, whose treatments overlapped in time.

Case Report
JOS, female, 37 years old, hypertensive, taking valsartan 160 mg/day, reported waking up due to a new pattern of headache (she had previous migraine symptoms, with no red flags until then). She was admitted with BP 280x180 mmHg, non-specific visual clouding and peripheral facial palsy on the left, with no other alterations on neurological examination. Intravenous sodium nitroprusside was started under multiparameter monitoring. Brain CT was normal (hypoplasia of the left transverse sinus on angiotomography), and brain MRI showed a partially empty sella. Lumbar puncture had an opening pressure of 22 cmH2O, but with total and immediate improvement of the headache and partial improvement of PFP after the puncture. Cerebrospinal fluid, serologies, inflammatory and rheumatological tests were normal. After six days, her blood pressure and palsy improved, with prescription for acetazolamide and adjustments to her antihypertensive medication.

Conclusion
This case illustrates the challenge in encountering a headache with neurological deficit with two possible etiologies of fluctuating nature and with less common clinical manifestations. Diagnosis hinges on understanding the pathophysiology, the relationship with clinical signs, and the temporal connection, which can suggest two hypotheses that are not mutually exclusive and require simultaneous management due to their associated risks. Moreover, in this instance, intracranial hypertension may be "incipient", exacerbated by SAH, as blood pressure impacts intracranial pressure under both normal and pathological conditions.

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Glossopharyngeal neuralgia resulting from eagle syndrome

Amauri Pereira da Silva Filho, Taianara Sampaio Reis[1], Danielle Cortellazzi Colonna Romano[2], Gabriela Yumi Nakamura[2], Melissa Fernandes Vilela de Freitas[2], Natália Rebeca Alves de Araújo Karpejany[1], Sabrina Borges Batista[2]

[1]University Hospital of the Federal University of Piauí, Teresina, Piauí, Brazil
[2]Nove de Julho University, São Paulo, São Paulo, Brazil

Introduction

Eagle syndrome is a rare and often underdiagnosed cause of craniofacial pain, typically resulting from calcification of the stylohyoid ligament or elongation of the temporal styloid process.The congenital variant, commonly referred to as stylohyoid syndrome, is characterized by pain and symptoms of carotid compression (such as presyncope, syncope, and transient ischemic events) due to an ossified stylohyoid ligament. The syndrome can be mistaken for other conditions like temporomandibular joint disorders or nonspecific glossopharyngeal and occipital nerve neuralgia.

Objective

Provide a comprehensive overview of glossopharyngeal neuralgia associated with Eagle syndrome, emphasizing the importance of early diagnosis and an integrated therapeutic approach.

Case Report

A 55-year-old female teacher with controlled hypertension and diabetes presented with severe, stabbing, shock-like pain lasting several seconds, occurring multiple times daily in the throat and base of the tongue. The pain also affected her cheek and was sometimes accompanied by hoarseness. She had experienced these symptoms for over six years, occasionally accompanied by coughing and syncope. Physical examination revealed no lesions in the oropharynx and tongue, and her neurological exam was normal, leading to a preliminary diagnosis of glossopharyngeal neuralgia. Anticonvulsants were prescribed, resulting in a 50% reduction in symptoms. Further investigation with cranial MRI showed no intracranial lesions. A 3D CT scan with bone window revealed elongation of the temporal styloid process, confirming Eagle syndrome. The elongated styloid process caused intermittent, shock-like pain by compressing the glossopharyngeal nerve, and its proximity to the vagus nerve led to symptoms like hoarseness, syncope, and bradycardia. Surgical treatment was chosen, successfully controlling symptoms and allowing discontinuation of anticonvulsants. The patient remained symptom-free postoperatively.

Conclusion

Glossopharyngeal neuralgia resulting from Eagle syndrome is a rare but significantly debilitating condition, highlighting the complexity of anatomical and neurological interactions in the human body. This case underscores the necessity for a high index of clinical suspicion and careful differential diagnosis to accurately identify the source of craniofacial and oropharyngeal pain. Detailed imaging, such as computed tomography, is crucial for identifying styloid process elongation or calcification characteristic of Eagle syndrome.

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Orgasmic headache: a differential diagnosis with spontaneous subarachnoid hemorrhage (sSAH)

Melissa Fernandes Vilela de Freitas[1], Taianara Sampaio Reis[2], Amauri Pereira da Silva Filho[3], Danielle Cortellazzi Colonna Romano[1], Gabriela Yumi Nakamura[1], Natália Rebeca Alves de Araújo Karpejany[2], Sabrina Borges Batista[1]

[1]Nove de Julho University, São Paulo, São Paulo, Brazil
[2]University Hospital of the Federal University of Piauí, Teresina, Piauí, Brazil
[3]Dom Luiz Gonzaga Fernandes Emergency and Trauma Hospital - Campina Grande, Paraiba, Brazil

Introduction
Orgasmic headache (OH) is a rare, sudden and severe headache that occurs at the time of or shortly after an orgasm. This type of primary headache associated with sexual activity typically lasts from 1 minute to 24 hours with severe pain and up to 72 hours with mild pain. OH, can manifest at any sexually active age and is more common in men than in women. Studies have shown that up to 40% of cases of primary headache associated with sexual activity exhibit a chronic pattern lasting over a year. When diagnosing, it is crucial to meticulously rule out other potentially serious conditions such as subarachnoid hemorrhage, arterial dissection, and reversible cerebral vasoconstriction syndrome.
Objective
Describing and recognizing a rare pathology.
Case Report
We present the case of a 38-year-old female university professor from Campina Grande, Paraíba, with no significant medical history. The patient complained of sudden, severe, explosive headache during sexual activity, characterized as holocranial and of high intensity, accompanied by nausea and vomiting. The headache persisted for up to 24 hours post-activity but with reduced intensity. The patient reported partial relief with over-the-counter analgesics. She experienced 6 similar episodes over the last 3 months, which caused fear and led to sexual abstinence. General and neurological physical examinations were unremarkable. Diagnostic tests including cranial CT scan, cranial MRI, angiotomography, and ambulatory blood pressure monitoring (ABPM) showed normal results. Based on the clinical presentation and investigative findings, a diagnosis of orgasmic headache was made. Prophylactic treatment with indomethacin before sexual activity was initiated.
Conclusion
A correct identification and diagnosis of orgasmic headache are crucial for appropriate management of the condition. Excluding other secondary causes of headache, such as aneurysms or hemorrhages, is essential to ensure proper treatment is administered. Treatment options may range from modifications in sexual behavior to the use of prophylactic medications, depending on the frequency and intensity of headaches.

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Neck - Tongue Syndrome: rare case report

Amauri Pereira da Silva Filho, Taianara Sampaio Reis[1], Danielle Cortellazzi Colonna Romano[2], Gabriela Yumi Nakamura[2], Melissa Fernandes Vilela de Freitas[2], Sabrina Borges Batista[2], Natália Rebeca Alves de Araújo Karpejany[1]

[1]University Hospital of the Federal University of Piauí, Teresina, Piauí, Brazil
[2]Nove de Julho University, São Paulo, São Paulo, Brazil

Introduction

Neck-tongue syndrome (NTS) is a very rare clinical condition defined by the International Headache Society (IHS) as "painful lesions of the cranial nerves and other facial pain". The headache disorder is often initiated by rapid axial rotation of the neck resulting in unilateral neck and/or occipital pain and transient ipsilateral tongue sensory disturbance. It is still very underrecognized, predominantly affecting children and adolescents. The prevalence is slightly higher in women. The pathophysiology mainly results from ligamentous laxity during growth, leading to transient subluxation of C1-C2 with sudden head movements. In the branch of the lingual nerve, where the anastomosis with the hypoglossal nerve is impacted against the bone, symptoms occur in the tongue. Diagnosis is based on clinical suspicion after a thorough history and physical examination, without a pathognomonic radiologic finding. It is typically treated conservatively with medications, local injections, immobilization with cervical collars, or physical therapy; rarely is surgical intervention pursued.

Objective

Describing and recognizing a rare pathology.

Case Report

Patient: Male, 14 years old, cowboy, student, from Patos. Following a fall from a horse, the patient began to experience discomfort in the neck, occipital region, and shoulder, as well as a sensation of numbness and burning in the tongue, especially when moving his head laterally. The pain has an immediate onset, is unilateral, and is described as tingling or stabbing with moderate to severe intensity in the occipital region, neck, and shoulders, always following sudden lateral neck movement, along with changes in the tongue, such as numbness and a strange sensation. The pain lasts for an average of a few minutes, with complete improvement. Physical and neurological examinations are normal. X-ray and cervical MRI are normal.

Conclusion

Neck-tongue syndrome, being a rare and still poorly recognized pathology, is difficult to diagnose. This results in significant delays in diagnosis and consequently poor management. Therefore, it is crucial to have more case reports for the recognition of this nosological entity.

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Should CGRP antagonist monoclonal antibodies be the drug of choice for migraine in brazil? - a pharmacoeconomic study

Davy Henrique de Sousa Pelliciari[1], Caio Ricco Alves Reis[1], Carlos Alberto Bordini[1]

Franca University Center, Franca, São Paulo, Brazil

Introduction

Efficacy (success of therapy under ideal conditions), efficiency (relationship between costs and results of a given intervention), and effectiveness (balance between efficacy and efficiency in clinical practice) are measures of evaluating health interventions. Thus, both in private practice and the public health system, knowledge of these pharmacoeconomic data should weigh in the choice of appropriate treatment. Migraine prophylaxis is included in this context, traditional medications (sodium valproate, topiramate, amitriptyline) can be obtained in the public health system, while galcanezumab (anti-GRP monoclonal antibody) is not routinely available.

Objective

To compare the efficacy, efficiency, and effectiveness of Galcanezumab and traditional therapeutic alternatives (Sodium Valproate, Topiramate, and Amitriptyline).

Methods

Efficacy data were obtained from the pertinent literature (PubMED) and cost values from the ABCFARMA magazine. For the analysis of economic impacts, the cost of living of an economically active adult individual in Brazil (IBGE) was considered.

Results

Efficacy: Galcanezumab has 50%; Topiramate: 31%; Amitriptyline: 40%; and Sodium Valproate: 35%. Efficiency: Galcanezumab 4%, Topiramate 103%, Sodium Valproate 77%, and Amitriptyline 200%. Finally, effectiveness was: Galcanezumab 27%, Topiramate 67%, Sodium Valproate 56%, and Amitriptyline 120%.

Conclusion

Galcanezumab is the most efficacious; however, it is neither the most efficient nor the most effective. In a broader analysis, considering payers and patients' financial availability, it indicates that in real life, therapy based solely on efficacy may not be feasible. Therefore, anti-CGRP antibodies will not be the first-choice drugs in migraine prophylaxis under all circumstances.

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Boundaries of visual phenomena in headache medicine: the Charles Bonnet's syndrome - report of two cases

Davy Henrique de Sousa Pelliciari, Carlos Alberto Bordini

Centro Universitário Municipal de Franca, Franca, São Paulo

Introduction

Two patients were referred to a tertiary headache center due to complex visual phenomena that might be related to migraine aura. Eventually, it turned out that they were Charles Bonnet syndrome (CBS) patients. The syndrome is characterized by vivid visual hallucinations in the absence of other psychiatric symptoms, often in patients with optical morphophysiological disorders. The pathophysiology of CBS remains uncertain, and the syndrome lacks robust diagnostic criteria. So far, reports on CBS are scarce in Brazilian neurological literature, leading to challenges in identification and diagnosis. The condition is primarily recognized through anamnesis and clinical examination.

Objective

To report two cases of CBS in order to draw the attention of headache specialists about this syndrome.

Case reports

The first case involves a 93-year-old male patient, retired, who reported experiencing vivid hallucinations sometimes of an old white car and sometimes a group of children. Despite the clarity of these visions, the patient remained aware that they weren't real. In the second case, a 70-year-old male farmer began experiencing hallucinations involving scratches, scribbles, letters, stones, and women in his visions.

Conclusion

Here two cases of CBS were report concern to a not so rare condition, but for sure very uncommon to headache specialists.

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Cluster-Tic Syndrome secondary to neurovascular compression, a case report

Pedro Neri[1], Pedro Rubens Araujo Carvalho[1], Raimundo Neudson Maia Alcantara[1], Mario Hermes Rios França[1], Luiz Gonzaga Nogueira Junior[1], Morgana Feitosa de Queiroga[1], Enzo Lima Alcântara Parente[2], Rafaella Iughetti da Costa[2], João Vítor Moreira Nogueira[2], Renata de Oliveira Carvalho[1]

[1]Hospital Geral de Fortaleza, Fortaleza, Ceará
[2]Centro Universitário Christus, Fortaleza, Ceará

Introduction
When the association between cluster headache and trigeminal neuralgia happens it can be characterized as Cluster-Tic Syndrome, however, its presentation is heterogeneous and one of the conditions stands out.
Objectives
Discourse about the long journey of a patient until the Cluster-Tic Syndrome diagnosis.
Case report
58-year-old patient, over the last 10 years, refers to daily and intense/ shocking headaches, which last 30 minutes, in the left V2 territory and radiate to the ipsilateral superior lip and eye. The patient reports to have sought dental treatment and went through tooth extractions and laser therapy without any response. She was referred to the neurologist because of the more intense and frequent pain, which became disabling, associated with ipsilateral symptoms such as conjunctival hyperemia, tearing, rhinorrhea, periorbital edema and ptosis. During the consultation, the Headache Impact Test (HIT-6) was applied and evidenced severe impact (73 points). Due to the pain, the patient used many prophylactic (carbamazepine, lamotrigine, pregabalin) and abortive (NSAIDs, O2 and corticosteroids) medications without adequate response in preventing or treating the pain. The patient went through a brain MRI which evidenced contact of a vascular loop with the ipsilateral trigeminal nerve. Therefore, the patient was diagnosed with Cluster-Tic, having the cluster headache as the main entity and directing the treatment with verapamil. The patient was referred to neurosurgery to evaluate the necessity of surgical intervention.
Conclusion
Cluster-Tic Syndrome is an extremely disabling condition due to the pain intensity and its difficult diagnosis and control, which leads to many years of low quality of life.

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Neuroimaging in Headaches: A Literature Review on Diagnostic Advances

Bruna Verdi Scabeni[1], Isabela Colissi Habowski[2], Júlia Ragone Vieira[3], Larissa Melo Faiad Graciliano[4], Waleska Krishna Macedo Corrales[5]

[1]Centro Universitário de Pato Branco, Pato Branco, PR
[2]Universidade Positivo, Londrina, PR
[3]Centro universitário de Caratinga, Caratinga, MG
[4]Universidade Federal do Rio Grande, Rio Grande, RS,
[5]Universidade Nove de Julho, Aclimação, SP

Introduction

Headaches have become one of the most common conditions worldwide and are a primary reason for seeking medical attention. It is estimated that seven out of ten people in Brazil suffer from some form of headache. Accurate analysis of the disease is crucial for developing effective treatment strategies, as there are various types of headaches. Neuroimaging techniques such as magnetic resonance imaging (MRI), computed tomography (CT), functional magnetic resonance imaging (fMRI), and positron emission tomography (PET) have revolutionized medicine. Their analysis provides a comprehensive view of current and future diagnostic trends, allowing for differentiation of headache types and aiding in their treatment.

Objective

To understand the diagnostic advances in neuroimaging for headaches.

Methods

This study was a literature review utilizing PubMed, Scielo, and Scopus databases. Articles containing information on neuroimaging and headaches published in the last 20 years were selected.

Results

Advances in neuroimaging provide a better understanding of headaches and improve differential diagnosis. Functional magnetic resonance imaging (fMRI) can identify functional changes in specific brain regions during migraine attacks (Dodick, 2018), revealing patterns of different types of headaches and enabling the understanding of chronic headaches. The use of techniques such as magnetic resonance spectroscopy (MRS) has also shown promise. This technique can assess metabolic changes in the brain during headache episodes, providing insight into the associated biochemical changes (Zhang et al., 2020). The use of artificial intelligence stands out for its potential to enhance diagnostic accuracy and personalize treatments. These algorithms can help predict treatment response in patients with chronic headaches, allowing for personalized therapeutic approaches (Chen et al., 2021).

Conclusion

These findings emphasize that advances in neuroimaging have made it possible to gain a deeper understanding of headache types and the biochemical changes that cause them. Furthermore, it is possible to expedite the diagnostic process and provide personalized treatment, thereby improving the patient's quality of life.

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Primary stabbing headache in patients with chronic or episodic migraine: Prevalences, correlations, and characteristics

Katariny Meneses do Amaral, Vinícius Baginski Treska, Elcio Juliato Piovesan

Universidade Federal do Paraná, Curitiba, Brasil

Introduction

Headache is one of the five most common disorders affecting humans, impacting quality of life, personal costs, and the healthcare system. Primary Stabbing Headache (PSH) is characterized by a lancinating pain lasting fractions of a second that occurs spontaneously in the absence of organic disease of the underlying structures or cranial nerves and is one of the least studied headaches to date.

Objective

This study evaluated the prevalence and clinical characteristics of PSH, correlating it with differences between chronic migraine (CM) and episodic migraine (EM).

Methods

This was a descriptive observational cross-sectional case-control study conducted between September 2023 - June 2024. Patients from the UFPR headache clinic with CM/EM and healthy controls (HC) were included. Data were collected through anamneses guided by specific questionnaires containing: semiological aspects of migraine, characteristics of PSH, allodynia, depression (PHQ-9) and anxiety (GAD-7).

Results

Patients with EM (n=49), CM (n=89), and HC (n=48) were evaluated. PSH was present in 31% of EM cases and 49% of CM cases (p=0.036); no patients in the HC group presented PSH. Pain intensity in the CM group was 8.3 points on the VAS, and 6.5 points in the EM group (p<0.001). The duration of the stabbing pain ranged from fractions of a second to seconds in 73% of cases, with subsequent discomfort lasting a few minutes. The frontal location of the stab was the most prevalent and equally common in both migraine groups (71.4%). Patients with PSH in the CM group compared to the EM group revealed more prevalent premonitory symptoms such as emotional stress (97.6%) and fatigue (50%) with p=0.006/0.044, respectively. These patients had a higher proportion of visual difficulties and other aura symptoms, including tingling, loss of strength, balance/coordination difficulties and weaker arm - all with p<0.05. Depression and anxiety questionnaire scores showed higher average scores in CM patients with PSH.

Conclusion

PSH is more prevalent and intense in CM patients, possessing some specific features that suggest shared neurobiological mechanisms. Despite the contributions, limitations include cross-sectional design and self-reporting.

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Headaches and Sleep Disorders: A Literature Review on Bidirectional Connections

Bruna Verdi Scabeni[1], Catharina Fernanda Brugnara Ceretta[2], Gabrielle dos Santos Almeida[3], Izabela Dib Gomes[4], Julia Cavalcanti Brito[5], Larissa Avila Branco[6], Thais Milena Maciel[7], Yasmim Toledo Dutra[8]

[1]Centro Universitário de Pato Branco, Pato Branco,PR
[2]Centro Universitário São Camilo, São Paulo, SP
[3]Universidade de Rio Verde, Rio Verde, GO,
[4]Faculdade Santa Marcelina, São Paulo, SP
[5]Universidade Federal do Vale do São Francisco, Petrolina, PE
[6]Universidade Federal do Rio Grande, Rio Grande, RS
[7]Universidade Positivo, Londrina, PR
[8]Faculdade de Ciências Médicas de Três Rios, Três Rios, RJ

Introduction
Sleep disorders occupy an important position among the pathologies that can precede the onset of headaches. Studies indicate that patients with chronic headache have a high prevalence of insomnia, daytime sleepiness, and snoring.

Objective
To understand the pathophysiological relationship between headaches and sleep disorders and to recognize the concomitant characteristics of these health and well-being issues.

Methods
This study is a literature review, using PubMed and Scopus as databases, where articles published between 2003 and 2024 were selected, containing the following descriptors: headache; sleep disorders; bidirectional relationships; insomnia; literature review. Inclusion criteria highlighted publications in English, Spanish, or Portuguese, and peer-reviewed articles, including systematic reviews, meta-analyses, clinical trials, and observational studies containing the aforementioned descriptors. Exclusion criteria included publications that do not address the proposed theme, studies in languages other than those mentioned above, and duplicate articles.

Results
Sleep disorders, such as insomnia, are risk factors for migraine and its chronification, with migraine attacks acting as triggers for sleep disorders. Chronic paroxysmal hemicrania and cluster headache are related to REM sleep. Insomnia affects about 50% to 66% of patients with migraine. Hypothalamic dysfunctions and sleep apnea are relatively common in headaches. Snoring increases the propensity for headaches, and poor sleep quality exacerbates daily headaches. Patients with chronic headache have a prevalence of morning sleepiness, insomnia, and snoring. Patients with obstructive sleep apnea are more frequently diagnosed with headaches compared to those without apnea. The most frequent sleep disorder in headache patients is obstructive sleep apnea. Night awakenings, insomnia, bruxism, and restless legs syndrome are regularly observed in patients with headache.

Conclusion
There is a prevalence of insomnia, hypothalamic dysfunctions, and sleep apnea as frequent sleep disorders in chronic migraine and tension-type headache. The bidirectionality between disorders and headaches is noted, affecting each other concomitantly, with comorbidities such as anxiety and depression influencing the perpetuation of these problems.

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The importance of research on idiopathic intracranial hypertension in pregnant women - a case report

Milena Amandine Odorizzi, Pedro André Kowacs, Mohamad Ali Hussein, Anna Cláudia Lavoratti, Maria Julia de Souza Padulla, Carolina Brun Ferrarini, Karen Arissa Iwase

Centro Universitário Fundação Assis Gurgacz, Cascavel, Paraná, Brazil

Introduction

Intracranial hypertension is a rare condition in pregnant women, which can result in severe complications if not diagnosed and treated appropriately. When idiopathic in nature, it becomes more challenging, as there is no clear cause for its onset. Its pathophysiology is still not completely understood, but neuroendocrine and neurovascular alterations have been described as a possible cause. Such pathology, with its classic signs and symptoms, highlights the challenges of clinical management.

Objective

To report a case and management of idiopathic intracranial hypertension in a 24-week pregnant woman.

Case Report

A 32-year-old pregnant woman at 24 weeks gestation was referred by her obstetrician with complaints of mild to moderate holocranial headache, most intense in the occipital region, accompanied by photophobia and phonophobia, with episodes of vomiting and worsening with physical effort. She also reports pulsatile tinnitus and bilateral visual blurring when lying down. The patient denies previous episodes of headache, diplopia, dysarthria, weakness, sensory changes, imbalance, or any other neurological symptoms. She denies excessive weight gain beyond what is expected for pregnancy. She has had hypothyroidism since adolescence. Examinations: No increase in blood pressure and negative COVID-19 test. Retinography confirmed bilateral papilledema. Lumbar puncture with manometry showed an opening pressure >50 cmH2O. Brain MRI and intracranial venous MR angiography indicated signs of intracranial hypertension without cerebral venous thrombosis (CVT). Venous blood gas analysis: pH 7.32; pCO2: 33; HCO3: 17; BE: -8.4. She is taking Levothyroxine 112mcg/day; Diamox 500mg 3 times daily; Bicarbonate 2g 3 times daily. After 2 months, at the follow-up appointment, she reports that headache episodes have decreased, but pulsatile tinnitus still persists. At a trimestral reassessment, she reports that delivery was via cesarean section, denies headache, pulsatile tinnitus, and visual blurring. She returned to pre-pregnancy weight. Complete remission of symptoms.

Conclusion

This case illustrates the complexity of managing idiopathic intracranial hypertension in pregnant women. Early diagnosis and immediate intervention are crucial to avoid complications for both the mother and the fetus. Regular follow-up and monitoring were essential for a favorable outcome, with complete symptom remission after cesarean section.

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The Effect of Age and Sex on Volume and Fractional Anisotropy Values of the Trigeminal Nerve in Healthy Young Adults

Eduardo Rocha Arruda[1], Carlos Ernesto Garrido Salmon[2,3], Hohana Gabriela Konell[4], Antonio Carlos dos Santos[3]

[1]Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo – FMRP-USP
[2]Departamento de Física, Faculdade de Filosofia Ciências e Letras de Ribeirão Preto, Universidade de São Paulo – FFCLRP-USP
[3]Departamento de Imagens Médicas, Hematología e Oncología Clínica, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo – FMRP-USP
[4]Centro de Ciências da Imagem e Física, Departamento de Imagens Médicas, Hematologia e Oncologia Clínica, Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo – FMRP-USP

Introduction
Some chronic orofacial pain diseases have a well-defined etiology, such as classic trigeminal nerve (TN) neuralgia. However, in idiopathic neuralgia, symptoms suggest problems directly in the TN. Studies that evaluate the volume in different regions of interest (ROIs) of the TN in healthy young adults (HYA) contribute to defining a standard of normality, being scarce in the current literature. Additionally, Diffusion Tensor Imaging (DTI) allows white matter integrity to be assessed using diffusion metrics such as fractional anisotropy (FA).

Objective
To evaluate the absolute volume (AV), determine the relationship AV/total brain size (RV), in different ROIs of the TN in HYA. Check the effect of AV, RV, age and sex on FA values in a General Linear Model (GLM).

Method
Structural and diffusion MRI data from 300 HYA, 150 men and 150 women (22 to 35 years old), were obtained from the Human Connectome Project (HCP) database, separated into 3 groups considering age and sex. T1w images were used for bilateral marking of the ROIs: total NT, root entry zone, middle portion of the cistern and Merckel's cave. Marking of ROIs, maps and calculation of FA, VA of ROIs and brain size were done using MRTrix3 software. The results were analyzed using the Kurskal-Wallis test ($p<0.05$) and correlations using GLM.

Results
The effects of sex on AV (male > female) disappear considering RV in relation to total brain size, except for the total volume of the right NT where the effect of larger AV persists in men, regardless of age. In relation to age: in the right Cistern we have an increase and reduction in AV and RV; in Root we have bilateral reduction of AV and RV; in the cave on the right we increase AV and RV. The GLM showed that the variation in FA values is explained by the effect of AV and sex, with the effect of sex being stronger for the model.

Conclusion
AV and FA values are more affected by sex. There is spatial heterogeneity in relation to the evolution of volume with age, affecting more the right side.

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Botulinum toxin type a in the temporomandibular region for Chronic Migraine treatment: a literature review

Gabriel Pieri, Jonathan Lima de Oliveira Silva, Flávia Julyana Pina Trench

Universidade Federal da Integração Latinoamericana, Foz do Iguaçu, Paraná

Introduction

Migraines, as defined by the 2018 International Headache Society, are attacks lasting 4 to 72 hours with specific characteristics. Surgical treatment of migraines dates back to 1931, with one approach targeting trigger zones, often in the temporo-occipital areas, using botulinum toxin. The success of this treatment has led to the hypothesis that facial muscle blockade with Botulinum Toxin Type A (BoNT-A) could provide similar migraine relief with fewer side effects.

Objective

This study aims to assess the current state of BoNT-A use in the temporomandibular region for chronic migraine with or without aura. A comprehensive literature search was conducted in PubMed using the search terms "(migraine OR headache) AND (botulinum OR toxin) AND (treatment OR therapeutic OR application OR injection) AND (temporal OR temporal muscle OR temporal region OR masseter)," yielding 26 relevant articles for review.

Methodology

While surgical resection of facial peripheral nerve terminals shows promise in treating myofascial pain and neuralgia, it carries significant complications. This study evaluates the efficacy of temporary muscle blockade with BoNT-A for migraine treatment, as reported in clinical trials and literature reviews.

Conclusion

Initial analysis suggests promising results in preventing pain recurrence in cases refractory to standard pharmacological treatment. Intramuscular BoNT-A in the facial region has shown efficacy in prolonging symptom-free periods for tension headaches, localized myofascial pain, neuralgia, and some types of migraine. However, more structured and migraine-specific studies are necessary to minimize adverse effects and complications in treated patients.

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Prevalence of episodic headache in workers on different shifts in Brazilian industry

Pablo Guarisco Ferreira, Lara Henriqueta Bussolaro Ricardi, Maurício Bedim dos Santos, Alcântara Ramos de Assis Cesar

Universidade Federal do Paraná

Introduction

Headache is one of the most prevalent and impactful clinical conditions globally. With varied estimates, there is currently a prevalence of up to 52% for episodic forms of headache in general, and 4.6% for chronic ones. Specifically, some studies indicate a global prevalence of 14% for migraine, of which only around 7% of these correspond to the chronic form, and 26% for tension-type headache (TTH). Smaller studies estimate a prevalence of 21.6% for frequent episodic TTH. As with chronic forms of TTH and migraine, sleep disorders are associated with their episodic forms, increasing the impact and frequency of attacks.

Objective

To calculate the prevalence of frequent episodic headaches in workers from different shifts in an industry in Brazil, and evaluate the possible association with sleep disorders.

Methods

This is an analytical cross-sectional observational study. The survey was carried out using an electronic form via the Google Forms® platform. Data regarding headache frequency, shift and work sector (production or others) and sleep were evaluated. Workers aged ≥ 18 years were included, who completely responded to the form and agreed to the free and informed consent form; Those reporting an age ≥ 51 years were excluded. Binary logistic regression was used to estimate the odds ratio (OR) and a 95% confidence interval was considered to express the degree of association between the independent variables. The research project was approved by the Research Ethics Committee of the Health Sciences Sector of the Federal University of Paraná.

Results

354 volunteers met analysis criteria. A prevalence of episodic headache of 52.82% was found, with no statistically significant difference between work shifts (p=0.949) or sector (p=0.569). Although a significant number reported increased sleep latency (42%), non-restorative sleep (59.4%) and daytime sleepiness (28.8%), these variables did not show a statistically significant association with episodic headache.

Conclusion

The prevalence found of frequent episodic headache was higher than that described in the literature and was not associated with sleep disorders or work shifts.

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Treatment of chronic migraine with long-term botulinum toxin: influence of non-pharmacological measures

Juliana Naback Toniolo, Fabíola Dach, Natália de Oliveira Silva, Roberto Satler Cetlin, Eduardo Bernardo Chaves Neto

Universidade de São Paulo, São Paulo, SP

Introduction

Botulinum toxin has proven to be a highly effective treatment for chronic migraine, although individual responses can be influenced by various factors, particularly non-pharmacological measures.

Objective

Report a case of long-term application of botulinum toxin for chronic migraine accompanied in a public health tertiary center with best response after optimization of non-pharmacological treatment.

Case report

A 36-year woman with chronic migraine was first evaluated in our center in 2012. At that time, various pharmacologic prophylactic classes were tried, but she remained refractory. Following the PREEMPT protocol, botulinum toxin treatment was initiated, starting with the first session in November 2012, which resulted in a 50% reduction in headache days. Over the course of 34 sessions, administered at intervals ranging from 12 to 40 weeks, she experienced benefits lasting 1.5 to 2 months per session, with gradually new worsening of headaches after this period, attributed to factors such as excessive use of analgesics, psychiatric comorbidities, and extended intervals between injections during the pandemic. Medications were adjusted and occasionally peripheral nerve blocks were performed. Adverse effects were minimal, consisting mainly of transient local pain and cervical discomfort following a single session. Before the 33th session, she started on physical activities, with longer duration response (3,5 months). In the 34th session, she had intensified physical activities due to recent diabetes diagnosis. Four months later, she had a pain-free period of 3 months, with pain return in low frequency (once a week), promptly resolved after changing use of atenolol to propranolol. In the later sessions, she was also being adequately treated for psychiatric and sleep disorders, and the protocol was interrupted.

Conclusio

Real world studies have shown long-term efficacy and safety of botulinum toxin in chronic migraine. In this case, response to injections was influenced by excessive use of analgesic and uncontrolled psychiatric and sleep disorders, and it was decided to maintain the protocol for a long time. However, sustained response was observed only after a regular physical activity planning, illustrating how the non-pharmacological treatment can drastically affect the individual response to botulinum toxin, even in refractory cases with multiple applications.

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Prevalence of chronic headache in workers in a Brazilian industry

Pablo Guarisco Ferreira, Lara Henriqueta Bussolaro Ricardi, Maurício Bedim dos Santos, Alcântara Ramos de Assis Cesar

Universidade Federal do Paraná, Curitiba, PR

Introduction

Primary headaches and sleep disorders are closely related conditions. The global prevalence of chronic headache reaches values of 4.6%, while in Brazil it corresponds to 6.9%. Up to 50% of patients with migraine report insomnia. The recurrence of headaches generates important economic losses and affects the patient's quality of life, with tension type headache and migraine accounting for 6.5% of years lived with disability worldwide.

Objective

To calculate the prevalence of chronic headaches in workers in an industry and evaluate the association with work shifts and sleep disorders.

Methodology

This is an analytical cross-sectional observational study. The research was carried out remotely, using an electronic form via the Google Forms® platform. The prevalence of chronic headache per work shift was calculated, the independence of the variables was verified using the Chi-Square test, binary logistic regression was used by estimating the odds ratio and 95% confidence intervals were considered, to express the degree of association between the independent variables and the presence of chronic headache. The research project was approved by the Research Ethics Committee of the Health Sciences Sector of the Federal University of Paraná.

Results

The global prevalence of chronic headache was higher than the general population (12.43%). No statistically significant association was found between the presence of chronic headache and work shift (p=0.999), increased sleep latency (p=0.087), short sleep duration (p=0.754), restorative sleep (p=0.348) and daytime sleepiness (p=0.910).

Conclusion

There was an increased prevalence of chronic headache in relation to that described in the global and national literature for the general population. In the sample, it was independent of clinically significant changes in sleep and work shift, which may suggest the possibility of individual adaptation of the worker to the work shift.

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A rare case of long-standing intracranial hypertension secondary to a lumbosacral extradural tumor

Eduardo Bernardo Chaves Neto[1], Juliana Naback Toniolo[1], Natália de Oliveira Silva[1], Erik Zhu Teng[1], Eduardo Luiz Alves de Sousa[2], Roberto Satler Cetlin[1], Fabíola Dach[1]

[1]Universidade de São Paulo, São Paulo, São Paulo
[2]Universidade Federal do Tocantins, Palmas, Tocanti

Introduction
Intracranial hypertension (ICH) caused by a spinal cord tumor is a rare but well-known condition. Identifying the disease is particularly challenging when characteristic spinal symptoms or signs are absent.
Objective
To report a rare case of long-standing intracranial hypertension secondary to a lumbosacral extradural tumor.
Case Report
A 76-year-old male patient, with a 10-year history of headache associated with visual impairment and bilateral papilledema, which was diagnosed as idiopathic intracranial hypertension. One year ago, he developed mental confusion, imbalance, and gait disturbances. Sixty days before admission, he presented weakness in the lower limbs, and 15 days ago he experienced new-onset seizures. On examination, anisocoria (right larger than the left), sluggish pupillary reaction to light in the left eye, and visual acuity of counting fingers at 4 meters in the right eye and 20/80 in the left eye. Fundoscopy showed optic nerve pallor (grade 2+), papillary edema with 360-degree blurring (Frisen grade 4) in the right eye. Cerebrospinal fluid (CSF) analysis, collected via suboccipital puncture, with an opening pressure of 35 cmH2O and a protein level of 81 mg/dL. Xanthochromia was present on this CSF sample and had been described in previous ones, though not investigated because the patient lost follow-up. A angiography of cranial vessels excluded any source or intracranial bleeding.Magnetic resonance imaging (MRI) of the brain showed a partially empty sella,diffuse proportional cerebral atrophy and some spots of superficial siderosis over the cerebellum. The patient underwent optic nerve fenestration and subsequently a ventriculoperitoneal shunt to relieve intracranial pressure and reduce optic nerve suffering. An MRI of the spine revealed an intradural lesion between L4-S1, approximately 6.1 cm in the craniocaudal axis,inferring compression of the cauda equina roots, without involvement of the conus medullaris. Spinal arteriography confirmed a hypervascular lesion, with blood supply from the anterior spinal artery and ectasia of the medullary drainage veins. After neurosurgical evaluation, the patient, in clinical stability, chose not to further stratify the lesion.
Conclusion
Since ICH can lead to a permanent optical loss, spinal MRI may be considered soon after the initial investigation to exclude atypical and rare cases of intracranial hypertension.

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Chronic Headache and Syncope in a Young Woman: A Case of Neurological Symptoms Linked to Metabolic Dysfunction

Gabriel Pieri, Jonathan Lima de Oliveira Silva, Flávia Julyana Pina Trench

Universidade Federal da Integração Latinoamericana, Foz do Iguaçu, Paraná

Introduction

Chronic headaches can stem from various etiologies, including metabolic dysfunctions leading to structural changes in the cranial bones. These changes can manifest as neurological symptoms such as tingling, stiffness, and syncope, complicating diagnosis and management.

Objectives

To report a case of a young woman presenting with syncope and neurological symptoms linked to chronic metabolic dysfunctions affecting the cranial bones.

Case Report

A 34-year-old female was brought to the Emergency Department by paramedics following a syncopal episode at her residence. Examination revealed frontal region edema due to a fall. She was communicative but exhibited mild spatial confusion. She reported tingling and episodes of stiffness in the extremities, worsening progressively before the syncope. Family members mentioned an unwitnessed seizure episode at home. The patient was undergoing neurological investigation for chronic headaches.

Imaging, including CT and MRI scans, revealed multiple lytic lesions in the skull cap and occipital region lymphadenopathy. Areas of bone thickening in the diploe, with a "salt and pepper" appearance, extending to the clivus and the first cervical vertebrae, were noted, with greater involvement in the frontoparietal region. These findings were associated with chronic metabolic dysfunctions, mainly pseudo-hyperparathyroidism.

During evaluation, the patient was in good general condition. She had rhythmic and normal heart sounds in two beats, without murmurs; vesicular breath sounds were present bilaterally, with no signs of respiratory effort. The limbs showed full peripheral pulses and a capillary refill time of less than two seconds. The Glasgow Coma Scale score was 13 due to low mobility and impaired verbal response.

Conclusion

The correlation between imaging findings and the patient's symptoms suggests significant neurological involvement. The lytic lesions and cranial thickening may be contributing to the chronic headache, spatial confusion, episodes of stiffness, and tingling. The syncope and seizure episode may be additional manifestations of this underlying neurological impairment. The initial diagnostic hypothesis is an exacerbation of a preexisting neurological condition. A comprehensive approach to such cases is essential, as isolated neurological symptoms can indicate significant underlying pathologies.

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Importance of fulminant idiopathic intracranial hypertension: case report

Carolina Brun Ferrarini[1], Milena Amandine Odorizzi[1], Maria Julia de Souza Padulla[1], Mohamad Ali Hussein[2], Anna Cláudia Lavoratti[1], Karen Arissa Iwase[1], Pedro André Kowacs

[1]Centro Universitário Fundação Assis Gurgacz , Cascavel, Paraná
[2]Instituto de Neurologia de Curitiba, Curitiba, Paraná

Introduction
Idiopathic intracranial hypertension (IIH) is a neurological condition predominantly affecting women, with obesity being the main risk factor. Symptoms include migraine, orthostatic headaches, transient visual obscurations, visual blurring, pulsatile tinnitus and diplopia. The prognosis worsens with faster progression. Understanding the clinical presentation and managing it efficiently are crucial, although a minority of patients present with the fulminant form of the disease.

Objective
To report a case of fulminant IIH.

Case Report
A 33-year-old female patient with no comorbidities and a BMI of 29.5 was admitted to a neurology hospital in Curitiba, PR, due to progressive decrease in visual acuity (VA), bilateral tinnitus and headaches that worsened when lying down. Physical examination revealed bilateral papilledema with VA of 20/200 in the left eye and 20/50 in the right eye. Cranial CT without relevant findings. Lumbar puncture with an opening pressure >50 cm H2O and no inflammatory signs. Pharmacological treatment with acetazolamide was initiated, gradually increasing to two tablets every 6 hours, later adjusted to every 8 hours due to side effects. Topiramate 25 mg twice daily was added, but visual complaints persisted. MRI and MRA revealed bilateral sigmoid sinus stenosis. After ruling out secondary structural and metabolic causes, a diagnosis of IIH was considered. During hospitalization, acetazolamide was suspended because of electrolyte disturbances (metabolic acidosis and hypokalemia), with only topiramate being continued. Due to worsening visual acuity after 8 days of hospitalization, a right frontal ventriculoperitoneal shunt was performed with neuronavigation assistance. After recovery, patient discharged without headache or tinnitus complaints, with severe VA 20/260 (left eye) and moderate VA 20/100 (right eye). At a follow-up outpatient, the patient reported resolution of headache, relief of left pulsatile tinnitus, and partial improvement of bilateral visual changes, although right visual impairment was more pronounced and bilateral papilledema persisted, despite regression. For follow-up, brain MRI, computerized visual field testing, optical coherence tomography, fluorescein angiography, and neuro-ophthalmologic consultation were requested.

Conclusion
Due to the urgency of the fulminant form of IIH, it is crucial to monitor the rapid and progressive evolution of visual loss, characteristic of the pathology, in order to minimize neurological sequelae.

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Manual Therapy as a Comprehensive Treatment Strategy for Cervicogenic Headache Associated with Temporomandibular Dysfunction

Letícia Pereira Arce, Anna Victoria Alves da Silva, Carolina Muller Dias, Juliana Cristina Bertaggia, Kauany Viaceli, Pablo Guarisco Ferreira, Rafaela Rina Uekubo Ogawa, Valentina Miotto Gasparim, Alcântara Ramos de Assis César, Giselle Hech

Federal University of Paraná

Introduction

Cervicogenic headache (CH) is a secondary headache that can be related to temporomandibular joint (TMJ) disorders due to anatomical and functional links, and is associated with sensitization of the trigeminocervical nucleus. Both temporomandibular dysfunction (TMD) and CH impact quality of life and have non-pharmacological treatment strategies such as manual therapy. Thoracic and cervical spine manipulation can be part of a comprehensive treatment strategy for cervicogenic headaches associated with TMD to enhance patient outcomes.

Objectives

Summarize the findings of an integrative review on the role of manual therapy in CH associated with TMD.

Method

A comprehensive search of MEDLINE, PubMed, and PEDro databases was conducted in June 2024 using "Temporomandibular disorder" AND "Headache" AND "Cervicogenic" AND "Manual therapy" as descriptors and operators. It yielded 10 results, of which 5 met the inclusion criteria for analysis.

Results

This review encompasses 5 studies conducted in Germany, the Netherlands, and the United Kingdom between 2010 and 2016, comprising a literature review, a cross-sectional study, and three randomized controlled trials (RCTs). The RCTs included male and female participants with previous diagnosis of headache and/or without head or facial pain. Manual therapies encompass a range of techniques used by physical therapists to treat musculoskeletal dysfunctions through hands-on manipulation. These techniques aim to enhance mobility, reduce pain, restore function, and promote overall health and well-being. Among the main techniques are joint mobilization, joint manipulation, myofascial release, therapeutic massage, and muscle energy techniques. Manipulation or mobilization of the thoracic spine demonstrated efficacy in neck pain management, as did cervical spine manipulation when combined with exercises. However, the evidence remains inconclusive regarding the efficacy of isolated cervical spine manipulation or mobilization for neck pain of any duration and for temporomandibular disorders (TMDs). Additionally, manual therapy for TMD appears to enhance patient outcomes more effectively when associated with orofacial physiotherapy.

Conclusion

Despite methodological inconsistencies, studies indicate the benefits of manual therapy in the treatment of CH when associated with TMD. Further research is needed to elucidate the role of therapy in the physiology of these conditions. However, the multidisciplinary treatment of CH, including physiotherapy, is well established in literature.

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The correlation between ADHD and Migraine: the need for comprehensive management

Letícia Pereira Arce, Ana Paula Ascari Meurer Correia, Cristiane Ribeiro, Erica Yuri Tsutumi, Gabriel dos Santos Oliveira, Henrique Passarini Pinheiro, Jaíne Frighetto, Kawan Souza Furio, Lorena Carvalho Plens, Valentina Miotto Gasparim

Federal University of Paraná

Introduction

Attention Deficit with Hyperactivity Disorder (ADHD) and migraine are neurological conditions that significantly impact quality of life. ADHD is a neurodevelopmental disorder characterized by inattention and hyperactivity or impulsivity, while migraine is a primary headache disorder, marked by recurrent episodes of severe headache. Evidence suggests a potential comorbidity between ADHD and migraine, raising questions about pathophysiological mechanisms and risk factors.

Objectives

This summary elucidates findings of an integrative review, evaluating research on the potential correlation between ADHD and migraine. It assesses whether ADHD increases the risk of migraine, explores potential pathophysiological mechanisms, risk factors and clinical practice implications.

Methods

A comprehensive search of MEDLINE, LILACS and PubMed databases in June 2024, using the descriptors "Attention Deficit Disorder with Hyperactivity" AND "Migraine Disorders" yielded 96 articles, of which 23 met the inclusion criteria for analysis.

Results

All analyzed studies indicate a significant association between ADHD, in which the diagnoses were based on DSM-5 criteria, and migraine, which evaluations were conducted clinically by physicians. One study found that ADHD nearly triples the risk of migraine, while another noted higher polygenic risk scores in individuals with both conditions. Severe ADHD correlates with poorer migraine outcomes, particularly in pediatric patients with refractory migraine. While identified risk factors for ADHD include male sex, prenatal tobacco exposure, frequent headaches, and poor academic performance, migraine is more prevalent in women with ADHD.

Even though six studies called for pathophysiological research, evidence suggests that ADHD and migraine share etiology through dopamine dysregulation. Authors propose that low dopamine environments cause hypersensitized dopamine receptors in migraines and increased presynaptic dopamine transporters in ADHD. This could explain ADHD symptoms in migraine sufferers and vice versa. Stimulant treatment for ADHD, noted to cause headaches, actually reduces headache prevalence by restoring the dopamine-norepinephrine balance. Multidisciplinary treatment is recommended by approximately 22% of studies, emphasizing the need for holistic care.

Conclusion

The evidence confirms a relevant association between ADHD and migraine, advocating for multidisciplinary treatment strategies and further studies into shared pathophysiological mechanisms. The findings highlight the need for comprehensive management to improve outcomes for patients with comorbid ADHD and migraine.

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Headache in isolated Wai Wai indigenous people: what's different?

Marcos Manoel Honorato, Samuel Oliveira de Amorim, Felipe Henrique Lima Pereira, Bianca Marinho Campos, Kelson Vinicius Dallabrida Padilha, Edwagner Coutinho Maia, Rayssa Oliveira Moura, Matheus da Silva Ferreira, Ana Flávia Ribeiro Nascimento, Átila Barros Magalhães

Universidade Federal do Pará, Belém, PA

Introduction

Headache is a common health condition that affects individuals' quality of life provoking temporary disability.Waiwai form an indigenous group that live in a remote Amazon region. There are 2503 people with no roads connecting to the cities. They live from agriculture, fishing and hunting, eat few processed foods, including sugar, and the diet is low in salt.

Objective

To study the headache occurence in people from the Wai Wai tribes and epidemiological and clinical characteristics of indigenous affected.

Methods

This is a retrospective, observational and quantitative study based on primary data from medical records of patients treated at the neurology outpatient clinic in Oriximiná, Pará, Brazil (regional reference center for indigenous health). Data from patients from the Wai wai tribe who complained of headaches were included from January 2009 to January 2024, excluding data from illegible medical records.

Results

Seventy participants were included, with 78.57% being female. The average age was 31.11±14.09 years, higher among men (34.13±19.33 years). Most participants could not specify the onset of headache episodes (20.00%). Daily headaches were noted (54.28%; n=38). Regarding the characteristics of intensity, type, and location, there was significant difficulty, predominating pulsatile nature (47.14%). Strong intensity (18.57%), and holocranial location (10.00%).The majority of cases were classified as migraine (64.28%) and had follow-up care for less than one year (54.28%). Among those who had follow-up care for more than one year, an average follow-up duration of 5.02±4.11 years was observed). A lower presence of patients with associated comorbidities was noted (7.5%). Neurological examination was normal in 98.5% and Amitriptiline was the drug more used for prophylaxis (62.85%). There was an improvement in symptoms in 24.28% of patients.

Conclusion

Headache affects indigenous people, and daily frequency was higher than general population, despite having different diet and lifestyle. Migraine is the most prevalent type of headache among members of the Waiwai indigenous tribe. However, the significant lack of detailed answers about the characteristics of the headache can have influenced the results. This study is crucial for directing future health interventions aimed at improving the quality of life and well-being of affected individuals.

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ASIA Syndrome and the nociceptive storm: a case report of a refractory headache

Luana Miyahira Makita [1]; Giovanna Grossklags Locatelli [1]; Giovanna Porreca Josetti[1]; Giovana Takeshita Itimura [2]; Elcio Juliato Piovesan [3]

[1]Complex of the Clinical Hospital of the Federal University of Parana, Curitiba, PR, Brazil
[2] University Hospital, State University of Londrina, Londrina, PR, Brazil
[3]Neurology Service, Department of Clinical Medicine, Complex of the Clinical Hospital of the Federal University of Parana, Curitiba-PR, Brazil

Introduction
Autoimmune Syndrome Induced by Adjuvants (ASIA) encompasses a set of immune-mediated diseases that can affect genetically predisposed individuals exposed to immunoadjuvant compounds, like silicone. Although headache is typical in these cases, the literature lacks information about its characteristics in ASIA.
Objective
Describe and discuss a case of ASIA with headache as the main symptom, approaching its clinical aspects.
Case Report
A 45-year-old female patient presenting with a silicone breast implant sought medical attention for a severe holocranial nocturnal headache (VAS-10). Initially, the acute episodes lasted a few days and were accompanied by tinnitus and visual disturbances. The cephalalgia became chronic and daily, unresponsive to prophylactic and acute migraine medications. The patient reported holocranial headaches with a gradual increase in intensity over a 2-4 hour peek, with a throbbing, pulsating, and stabbing pattern. Additionally, she experienced symptoms such as muscle weakness, cold intolerance, sweating, cognitive impairment, dermatological manifestations, body aches, and transient recurrent hemiparesis, often associated with ipsilateral allodynia and pain. The patient had no prior history of headaches and no familial migraine predisposition. Her medical history disclosed a history of breast augmentation in 2000, with subsequent replacements at 13 and 17 years. The last one, following surgical treatment for ductal carcinoma in situ, occurred in the same year that symptoms of ASIA began. Physical, neurological, and psychiatric evaluations, as well as imaging and immunological tests, yielded normal results. Removal of the silicone breast implant resulted in significant improvement, with the patient reporting relief from symptoms five days post-procedure and complete resolution of headaches 40 days post-explant.
Conclusion
This case report links ASIA syndrome with refractory headache, whose semiological aspects description are lacking for this condition in the literature. Due to non-specificity, clinical symptoms of ASIA often do not meet the diagnostic criteria for well-defined immune-mediated rheumatic diseases, leading to inefficient treatment of psychosomatic illnesses. For the first time we bring you a semiological and clinical presentation of a headache in ASIA.

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Blood pressure monitoring and worsening in patients with migraine treated with erenumab: a systematic review and meta-analysis

Luana Miyahira Makita [1], Aishwarya Koppanatham[2], Angela Maria Sandini Corso [1], Giovana Schlichta Adriano Kojima[1], Henrique Alexsander Ferreira Neves[1], Rafael de Freitas Kleimmann[1], Rafael Reis de Oliveira [3], Vinícius Salles Alves [1], Elcio Juliato Piovesan[4]

[1]Complex of the Clinical Hospital of the Federal University of Parana, Curitiba, Brazil
[2]Andhra Medical College, Visakhapatnam, India.
[3]Complex of the Hospital João de Barros Barreto of the Federal University of Pará, Belém, Brazil.
[4]Neurology Service, Department of Clinical Medicine, Complex of the Clinical Hospital of the Federal University of Parana, Curitiba, Brazil

Introduction
The involvement of calcitonin gene-related peptide (CGRP) pathways in vascular resistance regulation has prompted concerns regarding the use of monoclonal antibodies for migraine treatment. Blocking CGRP or your receptor could theoretically increase the risk of vascular issues in migraineurs, particularly considering the higher prevalence of hypertension among migraine patients compared to migraine-free individuals. While prior clinical evidence did not establish a clear association between erenumab use and adverse vascular events, the US Prescribing Information for erenumab was revised in April 2020 to include the risk of hypertension based on postmarketing data.

Objective
Evaluate changes in systolic and diastolic blood pressure (BP) in patients with migraine before and after treatment with erenumab.

Methods
We performed a systematic review and meta-analysis of observational and randomized clinical trial data assessing BP changes and worsening in migraineurs initiating treatment with erenumab. Cochrane Library, EMBASE, and PubMed databases were searched for studies published up to June 18, 2024. The data were collected in Mean Difference and number of events. Regarding hypertension outcomes, subanalyses were conducted to worsening blood pressure reports.

Results
Thirteen studies comprising 5.018 patients undergoing treatment with erenumab were included. Overall, erenumab initiation was not associated with significant increase in systolic (MD 1.31; 95%CI -0.82, 3.44; P>0,05) or diastolic blood pressure (MD 1.33; 95%CI -0.20, 2.86; P>0,05) when compared to baseline values. Subgroup analysis of blood pressure variation restricted to non-randomized studies also showed no significant change in either systolic (MD 2.03; 95%CI -1.34, 5.39; P> 0.05) or diastolic levels (MD 1.27; 95%CI -1.33, 3.87; P>0.05) Subanalyses demonstrated a prevalence of 17.01 events of worsening BP per 100 patients treated with erenumab (95%CI 10.80-25.76; I2= 94%).

Conclusion
Our findings suggest that erenumab use as a preventive treatment in adult migraineurs is not associated with an increased systolic or diastolic BP when compared to pre-erenumab values. Further subgroup analyses on pre-hypertensive patients may explain the elevated heterogeneity in the prevalence of worsening blood pressure reported.

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Cluster-tic syndrome – 10 years until the diagnosis – A case report

Pedro Neri[1], Pedro Rubens Araujo de Carvalho[1], Morgana Feitosa de Queiroga[1], Raimundo Neudson Maia Alcantara[1], Mario Hermes Rios Franca[1], Luiz Gonzaga Nogueira Junior[1], Renata de Oliveira Carvalho[1], Enzo Lima Alcântara Parente[2], João Vítor Moreira Nogueira[2], Rafaella Iughetti da Costa[2]

[1] Hospital Geral de Fortaleza, Fortaleza, Ceará
[2]Centro Universitário Christus, Fortaleza, Ceará

Introduction
Cluster-Tic syndrome is characterized by the coexistence of elements from trigeminal neuralgia and cluster headache, which is a questioned entity because of its heterogeneous presentation in the cases described.
Objective
Describe a case that took about 10 years to be assertively diagnosed.
Case report
30-year-old patient, doctor, history of a headache which met the criteria for low frequency episodic migraine without aura since childhood. 10 years ago, during medical school, presented an intense stabbing headache in the V2 territory on the left side of the head which lasted about 30 minutes and did not get better during the attacks, associated with agitation and ipsilateral dysautonomia symptoms such as conjunctival hyperemia, semi-ptosis and tearing. These episodes used to happen daily during about 6 weeks, presenting an inter-crisis period of about 2 years, and could be triggered by the consumption of alcoholic beverages, not depending on the quantity. Due to the prominent algic syndrome, during this 10 year period, the patient went to many neurologists for help, but did not get an assertive diagnosis and many prophylactic (amitriptyline, venlafaxine, botulinum toxin) and abortive (NSAIDs, triptans, corticosteroid) medications were prescribed , without an adequate answer in the prevention or improvement of the pain during the attacks. The patient also went through an investigation in 2018 using a brain MRI to discover a possible secondary headache, evidencing a neurovascular conflict on the opposite side of the patient's symptom. In this context, the cluster-tic diagnosis was confirmed and the doctors tried a treatment directed to cluster headache with subcutaneous sumatriptan during the crisis, as well as verapamil during 6 weeks as a prophylactic for the attacks associated with blocking the left lesser and major occipital nerves, resulting in a positive response during both treatments.
Conclusion
Due to the variety of presentations, cluster-tic syndrome can go unnoticed, leading to a diagnostic and therapeutic delay, consequently resulting in a reduced quality of life for the patient.

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Hospital admissions for migraine and other cephalgic syndrome pain and socioeconomic indices in Brazil

Marcos Manoel Honorato[1], Samuel Oliveira de Amorim[1], Felipe Henrique Lima Pereira[1], Bianca Marinho Campos[1], Kelson Vinicius Dallabrida Padilha[1], Edwagner Coutinho Maia[1], Rayssa Oliveira Moura[1], Matheus da Silva Ferreira[1], Ana Flávia Ribeiro Nascimento[2], Átila Barros Magalhães[1]

[1]Universidade do Estado do Pará, Santarém, Pará, Brazil
[2]Santa Casa de Misericórdia de Barretos/SP

Introduction
Migraine is a neurological condition characterized by recurrent episodes of intense headache, often accompanied by nausea, vomiting, and hypersensitivity to sensory stimuli such as light and sound. This condition affects millions of individuals worldwide, exerting a substantial impact on the quality of life and functional capacity of those affected.

Objective
To investigate the correlation between hospitalization rates for headaches and socioeconomic indicators (SI) in Brazil.

Methods
This retrospective study employed a quantitative approach using data from the Hospital Admission System (SIH) of DATASUS, in accordance with the International Classification of Diseases (ICD-10), and from the Atlas of Human Development (ADH) in Brazil, from 2016 to 2021. The average hospitalization rate for headaches, for each federative unit, was calculated from the annual hospitalization rates (hospitalization / resident population * 100,000). The Human Development Index (HDI) and its sub-indices (education, longevity, and income) were analyzed. Through simple linear regression with a 95% confidence interval, Pearson's coefficient (r) was obtained to correlate the average hospitalization rate and socioeconomic indicators.

Results
A total of 58,601 hospitalizations were identified, with 2019 being the year with the highest number of hospitalizations (12,120). Statistically significant ($p<0.05$) and positive ($r>0$) correlations were observed between the hospitalization rate for headaches and higher HDI ($r=0.26$), HDI-education ($r=0.33$), and HDI-longevity ($r=0.18$). Only one of the indices, HDI-income, did not show a significant correlation. The highest average hospitalization rate was recorded in the state of Paraná (15.34), while the lowest average was observed in Rio Grande do Norte (0.34).

Conclusion
As the level of human development, measured by access to healthcare, education, and income distribution, increases, so does the impact on the total number of hospitalizations. This is due to factors associated with regions with high human development, such as early screening, access to primary care, rigorous reporting, and conditions typical of industrialization, as well as occupational exposure to carcinogenic agents, which may contribute to these findings.

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Analysis of the characteristics and distribution of types of headaches reported on social media

Bruna Dellamonica[1], Mario Peres[2]

[1]Universidade Santo Amaro, São Paulo, São Paulo
[2]Instituto de Psiquiatria, Universidade de Sao Paulo. Hospital Israelita Albert Einstein, São Paulo

Introduction
The diagnosis of headaches is primarily based on clinical characteristics reported by patients regarding the occurrence of their headaches. There is an inherent bias that depends on the patient's ability to verbally report their experience and the doctor's ability to extract this information during the clinical history. With the growing presence of society on social media, those who suffer from headaches share their experiences, but few studies have been conducted using this data.

Objective
To explore the use of social media as a data source for analyzing how patients describe their headaches.

Methodology
The diversity of nomenclatures used by users in an Instagram post was evaluated, where followers were asked to describe in the comments section the type of pain they felt. The data were collected and entered into a spreadsheet, anonymized. A descriptive analysis of the various words used was conducted.

Results
175 comments were identified, of which the reports from 129 individuals were considered for analysis. Despite being asked to describe the type and characteristics of their pain, users reported other characteristics not asked about, such as intensity and location. A total of 58 different words were observed to describe the type of pain. The most common were throbbing (12%), pulsating (7%), pressure (6%), constant (5%), and continuous (5%). 70% reported more than one word or phrase to describe their headache experience.

Conclusion
Understanding the terminology used to describe the types of headaches reported by patients is crucial for effective diagnosis and treatment.

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Clinical Aspects of Patients with Cerebral Compliance Disturbances

Felipe Oliveira Fernandes de Souza, Henrique Alexsander Ferreira Neves, Elcio Juliato Piovesan

Universidade Federal do Paraná, Curitiba, Paraná

Introduction

Headaches are classified as primary or secondary, based on the presence or absence of an underlying cause. Little is known about secondary headaches due to homeostasis disorders, which may be linked to changes in intracranial compliance involved in cerebral blood dynamics.

Objective

The study aims to explore the relationship between changes in compliance and chronic secondary headaches and to propose clinical patterns of these headaches using a non-invasive device called Brain4Care (B4C).

Methods

Patients with daily and chronic secondary headaches without previous etiology from the headache ambulatory care at Complexo Hospital de Clínicas - Universidade Federal do Paraná underwent B4C exams to assess cerebral compliance and hemodynamic tilt-test to evaluate neurovascular components. Questionnaires on allodynia (ASC-12), clinical characteristics of the headache, and autonomic manifestations (COMPASS-31) were applied. Patients were classified as having normal or altered B4C according to exam parameters such as P2/P1 ratio and time to peak (TTP). A flowchart was developed to group patients with similar characteristics.

Results

Twelve patients were included with a mean age of 45.2 years (67% female). Common clinical characteristics included age over 50 years, frontal and occipital pain (75%), bilateral lateral pattern, pulsatile (67%), and expansive pain (62.5%), unrelated to allodynia or autonomic manifestations. There was a significant age difference between the normal group (26.8) and the altered B4C group (54.5) (p=0.048). Both P2/P1 ratio (1.31) and TTP (0.27) averages in supine position were higher in the altered group compared to the normal (p=0.004). Peripheral vasodilation and reduced stroke volume were suggested as possible pathophysiological mechanisms.

Conclusion

This exploratory study is the first to correlate altered cerebral compliance with clinical patterns in patients with daily and secondary chronic headaches. The study found that patients with chronic secondary headaches of unknown etiology may present changes in cerebral compliance. These findings highlight the importance of evaluating cerebral compliance in managing these patients and pave the way for future investigations into this new entity, termed secondary headache due to altered cerebral compliance.

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Risk Factors Associated with Headache Prevalence among Adolescents

Claudionor Antônio dos Santos Filho[1], Athyrson de Castro Ferreira[1], Ana Flávia de Sousa Barberino[1], Maíra Marçal dos Anjos[1], Paula Katherine Marques dos Santos[2], Marcus Vinicius Matos dos Santos[2], Ana Paula de Sousa Barberino[3], Gleiciele de Castro Ferreira[1]

[1] Faculdade Ages de Medicina, Irecê, Bahia
[2] Universidade Brasil, Fernandópolis, São Paulo
[3] Faculdade de Petrolina, Petrolina, Pernambuco

Background
Headache prevalence among adolescents has raised growing concerns due to its association with various risk factors in their lifestyle habits.
Objective
This literature review aims to identify and analyze the main determinants related to headache prevalence among adolescents.
Methods
This study consists of a systematic review of literature published in the last ten years in the Virtual Health Library (BVS) and PubMed, using the descriptors "headache," "adolescent," and "risk factors." The inclusion criteria were articles that address risk factors for headache in adolescents, published in Portuguese or English.
Results
A higher prevalence of headache was observed in older adolescents (16-19 years) compared to younger adolescents (12-15 years). This difference may be related to biopsychosocial factors in younger adolescents, such as stress and/or divorce in the family environment. Among headache types, migraine and tension headaches were the most frequent. Tension headaches were more prevalent in females, with women reporting more frequent headache complaints than men. This difference may be associated with hormonal factors. The study also found a significant relationship between excessive technology use and headache occurrence, especially migraine-type headaches. This association can be explained by inadequate posture habits, visual fatigue, and auditory symptoms during the use of electronic devices.
Conclusion
This study highlighted a higher prevalence of headache in older adolescents and a lower prevalence among younger ones, possibly due to family stress. Migraine and tension headaches were more common in this group, with tension headaches predominant among girls. Excessive use of digital technologies was associated with headache, especially migraine-type headaches, due to inadequate postures, visual fatigue, and auditory symptoms.

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Headache: A Multifaceted Public Health Challenge

Claudionor Antônio dos Santos Filho[1], Athyrson de Castro Ferreira[1], Ana Flávia de Sousa Barberino[1], Maíra Marçal dos Anjos[1], Paula Katherine Marques dos Santos[2], Marcus Vinicius Matos dos Santos[2], Ana Paula de Sousa Barberino[3], Gleiciele de Castro Ferreira[1]

[1] Faculdade Ages de Medicina, Irecê, Bahia
[2] Universidade Brasil, Fernandópolis, São Paulo
[3] Faculdade de Petrolina, Petrolina, Pernambuco

Background
Headaches pose a significant public health concern, affecting the quality of life of the global population and ranking among the top medical complaints. They manifest as symptoms of underlying structural or organic alterations, resulting from lifestyle factors, or as primary headaches with unknown etiopathogenesis. This multifaceted nature drives the problematic issue of self-medication, a practice that can lead to dependency and mask underlying conditions.

Objectives
To understand the importance of addressing headaches to prevent exacerbations, mitigate public health burdens in Brazil, and preserve the well-being of patients presenting with this complaint.

Methods
A search was conducted using the BVS (Virtual Health Library) with the descriptors "headache" and "symptom." Exclusion criteria included: (1) studies conducted in other countries; (2) articles that treated headache as a secondary topic; (3) non-article publications. Eight articles were selected after analyzing the results.

Results
Six articles highlight the prevalence of headaches in medical practice, affecting up to 90% of the global population at some point in their lives and requiring urgent care in at least one episode. Thorough investigation is warranted when associated with meningitis, focal neurological symptoms of oculomotor paresis, cranial nerve palsy, hemiparesis, or loss of consciousness. The personal impact on academic performance, lost workdays, and public health consequences, such as healthcare costs and self-medication, are also discussed. Two additional articles address the inconclusive correlation between headache and temporomandibular joint dysfunction (TMJ), while acknowledging it as a common symptom. Finally, the importance of identifying red flags to rule out serious illnesses is emphasized.

Conclusions
This study aimed to underscore the importance of attention to patients presenting with headache complaints. It concludes that due to the diversity of causes and effects, a comprehensive clinical examination should be performed for early detection of treatable conditions and to rule out serious illnesses. Non-pharmacological approaches are valuable allies in achieving favorable outcomes, and encouraging appropriate treatment seeking should be promoted to reduce self-medication practices associated with this condition.

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Association between Chocolate Intake and Migraine

Claudionor Antônio dos Santos Filho[1], Athyrson de Castro Ferreira[1], Ana Flávia de Sousa Barberino[1], Maíra Marçal dos Anjos[1], Paula Katherine Marques dos Santos[2], Marcus Vinicius Matos dos Santos[2], Ana Paula de Sousa Barberino[3], Gleiciele de Castro Ferreira[1]

[1]Faculdade Ages de Medicina, Irecê, Bahia
[2]Universidade Brasil, Fernandópolis, São Paulo
[3]Faculdade de Petrolina, Petrolina, Pernambuco

Background
Migraine, affecting over a billion people globally, necessitates an understanding of its triggers among primary care providers.
Objective
This study aims to elucidate the relationship between chocolate intake and migraine attacks.
Methods
A literature review was conducted across the PubMed, SciELO, and BvSalud databases using the descriptors "migraine," "trigger," and "chocolate intake." Full-text articles in English or Portuguese were included.
Results
Observational studies demonstrate an association between chocolate consumption and migraine attacks. However, randomized controlled trials show no difference between chocolate and placebo in the primary outcome. The high risk of bias in these studies, stemming from questionnaire-based data collection, susceptible to recall and reporting biases, warrants mention.
Conclusion
While observational studies suggest an association, robust evidence from randomized controlled trials does not support chocolate intake as a migraine trigger. Further investigation into the chocolate-migraine relationship is crucial, considering the possibility of chocolate cravings being a prodromal symptom of migraine.

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Association of serum metals/metalloids levels with migraine and non-migraine headache types in a 4-year follow-up analysis with 2,662 participants in the ELSA-Brasil study

Arão Belitardo de Oliveira[1], Fernando Barbosa Jr[2], Itamar S. Santos[1,3], Mario Fernando Prieto Peres[4,5], Paulo A. Lotufo [1,3], Isabela M. Benseñor[1,3], Alessandra C. Goulart[1,6]

[1]Center for Clinical and Epidemiological Research, Hospital Universitario, Universidade de Sao Paulo, Brazil
[2]Laboratório de Toxicologia Analítica e de Sistemas (ASTOx). Departamento de Análises Clínicas, Toxicológicas e Bromatológicas, Faculdade de Ciências Farmacêuticas de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil
[3]Department of Internal Medicine, School of Medicine, Universidade de Sao Paulo, Sao Paulo, Brazil
[4]Instituto do Cérebro, Hospital Israelita Albert Einstein, Sao Paulo, Brazil
[5]Instituto de Psiquiatria, Hospital das Clínicas, Universidade de São Paulo, São Paulo, Brazil
[6]School of Public Health, Department of Epidemiology, University of Sao Paulo, Sao Paulo, Brazil

Background
Migraine disorders are thought to be influenced by a myriad of endogenous and environmental factors, including its association with metals/metalloid levels. However, this intricate relationship has never been comprehensively studied. Objective: We aimed to examine the risk of migraine disorders associated with serum levels of 16 metals/metalloids in the ELSA-Brasil study.

Methods
This is a prospective analysis based on the serum levels of metals/metalloids in the baseline wave (2008-2010) and the migraine diagnosis in the inter-wave (2012-2014). Metals quantification was performed by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and migraine diagnosis was based on ICHD-3, grouped as migraine without aura (MWO), migraine with aura (MWA), and non-migraine headache (NO). Modified Poisson regression models estimated the risk ratios (RR) with [95% confidence interval] for migraine diagnosis, according to metals concentration quintiles (Q), with the median as reference and 1st and 5th quintiles representing the lowest and highest metal levels, respectively. The adjusted models controlled for sex. age, education, race, smoking, alcohol intake, migraine prophylactic medication, and cardiometabolic risk factors.

Results
The study included 2,662 adults, with a median (IQR) age: of 51 (45, 58) years and 52.7.0% (n = 1,403) female. In the adjusted models, 5th Q of Cu (RR: .79 [.64, .97]) and 3rd Q of Ba (RR: .86 [.76, .96]) were associated with a lower risk of NO, while 5th Q of Pb (RR: 1.16 [1.00, 1.34]) were associated with a higher risk of NO. The 1st Q of Fe (RR: 1.31 [1.01, 1.69]), 3rd Q of Ba (RR: 1.39 [1.14, 1.70]), and the 5th Q of Cd (RR: 1.35 [1.05, 1.74]) were associated with higher risk of MWO, while 5th Q of Se (RR: .70 [.50, .99]) and 3rd Q of Zn (RR: .78 [.63, .97]) were associated with lower risk of MWO. The extreme levels of Cd and Sr (5th Q and 1st Q) were associated with increased risk of MWA (RR: 1.48 [1.04, 2.10] and RR: 1.41 [1.01, 1.97], respectively). Finally, the 1st Q of Cu was associated with a lower risk of MWA (RR: .65 [.44, .97]).

Conclusion
In the ELSA-Brasil, a diverse relationship was observed between metals and headaches with a higher magnitude of associations noticed with higher levels of Cd and both migraine subtypes.

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Are the AHA Life´s Essential 8 factors useful for migraine prevention? Insights from a 4-year follow-up with 4,293 participants in the ELSA-Brasil study

Arão Belitardo de Oliveira[1], Itamar S. Santos[1,2], Mario Fernando Prieto Peres[3,4], Paulo A. Lotufo[1,2], Isabela M. Benseñor[1,2] Alessandra C. Goulart[1,5]

[1]Center for Clinical and Epidemiological Research, Hospital Universitario, Universidade de Sao Paulo, Brazil
[2]Department of Internal Medicine, School of Medicine, Universidade de Sao Paulo, Sao Paulo, Brazil
[3]Instituto do Cérebro, Hospital Israelita Albert Einstein, Sao Paulo, Brazil
[4]Instituto de Psiquiatria, Hospital das Clínicas, Universidade de São Paulo, São Paulo, Brazil
[5]School of Public Health, Department of Epidemiology, University of Sao Paulo, Sao Paulo, Brazil

Background
Migraine disorders are polygenic, neurovascular disorders thought to be influenced by lifestyle and environmental factors. It is unknown whether well-established lifestyle and health factors related to cardiovascular health would be associated with lower migraine occurrence.
Objective
We aimed to evaluate the risk of migraine and its chronification associated with the Life´s Essential 8 (LE8) behavior (diet, physical activity, sleep, and nicotine exposure) and health (body mass index, blood lipids, blood glucose, and blood pressure) factors scores proposed by the American Heart Association (AHA) in a middle-aged population.
Methods
This is a prospective analysis based on the exposure to LE8 factors at the baseline (wave 1: 2008-2010) and diagnosis of migraine without aura (MWO), migraine with aura (MWA) at inter-wave 2013-2014 among subset of participants from the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). The LE8 factors scores were computed following the AHA´s scoring system. Migraine diagnoses were based on ICHD-3. Modified Poisson regression models estimated the risk ratios (RR) with 95% confidence interval for migraine diagnoses, according to the adherence levels to the LE8 factors categorized as low (reference), moderate, and high (recommended by AHA).
Results
Among 4,293 adults (mean age: 51.3, ±8.9 years, 54.6 % female), 19.4 % and 10.5 % were diagnosed as MWO and MWA, respectively, after a mean (SD) follow-up of 4.0 (0.38) years. In the models adjusted for sex, age, race, household income, education, marital status, and migraine preventive medication, high adherence to LE8 factors was associated with lower risk of both migraine types. The associations with MWO presented an inverted J-shaped curve, with an increase in the RR for moderate adherence (RR: 1.06 [0.84, 1.35]), followed by a decrease with high adherence to LE8 factors (RR: 0.80 [0.58, 1.10], quadratic p-trend = 0.015). For MWA, there was a linear decrease in the risk as adherence increased to the recommended level (RR: 0.55 [0.377, 0.82], linear p-trend = 0.003).
Conclusion
In the ELSA-Brasil study, high adherence to AHA LE8 factors was associated with lower risk of both migraine types.

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What is AHA Life´s Essential 8 factors' role in preventing migraine chronification? Insights from a 4-year follow-up with 4,193 participants in the ELSA-Brasil study

Arão Belitardo de Oliveira[1], Itamar S. Santos[1,2], Mario Fernando Prieto Peres[3,4], Paulo A. Lotufo[1,2], Isabela M. Benseñor[1,2] Alessandra C. Goulart[1,5]

[1]Center for Clinical and Epidemiological Research, Hospital Universitario, Universidade de Sao Paulo, Brazil
[2]Department of Internal Medicine, School of Medicine, Universidade de Sao Paulo, Sao Paulo, Brazil
[3]Instituto do Cérebro, Hospital Israelita Albert Einstein, São Paulo, Brazil
[4]Instituto de Psiquiatria, Hospital das Clínicas, Universidade de São Paulo, São Paulo, Brazil
[5]School of Public Health, Department of Epidemiology, University of Sao Paulo, São Paulo, Brazil

Background
Migraine chronification is believed to depend on lifestyle and other health factors. However, there is a scarcity of studies evaluating whether well-established lifestyle and health factors can reduce the risk of migraine chronification.
Objective
We aimed to evaluate the risk of migraine chronification considering the recommended adherence to Life´s Essential 8 (LE8) behavior (diet, physical activity, sleep, and nicotine exposure) and health (body mass index, blood lipids, blood glucose, and blood pressure) factors scores proposed by the American Heart Association (AHA) in a middle-aged population.
Methods
This is a prospective analysis based on the exposure to LE8 factors at the baseline (2008-2010) and migraine chronification at the inter-wave (2012-2014) among participants with migraine diagnosis at baseline from the Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). The LE8 factors scores were computed following the AHA´s scoring system. Migraine chronification was defined as the change in migraine attack frequency from < 15 days/month to ≥15 days/month from baseline to follow-up period. Modified Poisson regression models estimated the risk ratio (RR) with a 95% confidence interval for migraine chronification, according to the adherence levels to the LE8 factors categorized as low (reference), moderate, and high (recommended).
Results
Participants with migraine attack frequency ≥ 15 days/month at baseline were excluded (n = 100). Among 4,193 participants included (mean age: 51.3, ±8.9 years, 54.1% female), 241 (5.7%) presented with migraine chronification at follow-up. The mean (SD) follow-up period was 4.0 (0.38) years. Prevalence of recommended adherence to LE8 factors was 12.6% and 6.2% among controls and migraine chronification groups, respectively. In the model adjusted for sex, age, race, household income, education, marital status, and migraine preventive medication, achieving the recommended adherence to LE8 global factors was associated with lower migraine chronification risk (RR: 0.376 [0.203, 0.69], p=0.002). Achieving the recommended adherence to LE8 behavior domain (RR: 0.47 [0.272, 0.82], p=0.008) was associated with lower migraine chronification risk but not LE8 health domain (RR: 0.84 [0.51, 1.39], p=0.518).
Conclusion
In the ELSA-Brasil study, the high adherence to AHA LE8 factors, mostly behavior factors, was associated with a lower risk of migraine chronification.

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Cannabidiol in the treatment of migraine: studies and future perspectives

Taianara Sampaio Reis[1], Raimundo Feitosa Neto[1], Alana Maria Caland de Holanda Lustosa[1], Amauri Pereira da Silva Filho[2], Gabriel Cipriano Feitosa Oliveira, Isis Maria Lima Cruz[1], Támara Larissa Silva Barbosa[1], Marcus Vinícius Costa Fernandes[1]

[1]Hospital Universitário do Piauí, Teresina, Piauí
[2]Hospital de Emergência e Trauma Dom Luiz Gonzaga Fernandes, Campina Grande, Paraíba

Introduction
Migraine is one of the most disabling and prevalent conditions in the population. Is related to the release of pro-inflammatory mediators in the central nervous system, triggering painful episodes. Cannabidiol (CBD) has significant potential to inhibit such pro-inflammatory mediators and consequently reduce pain symptoms.

Objective
To describe the progression of a patient diagnosed with refractory migraine, analyzing the relationship between CBD use and symptom improvement.

Case Report
A 37-year-old female patient from Teresina has been patient with refractory migraine for 1 year. She has experienced headaches since the age of 11, with sporadic episodes that improved with dipyrone use. There was an increase in frequency, occurring three times a week, with improvement after using non-steroidal anti-inflammatory drugs. She was undergoing psychiatric treatment, using benzodiazepine and antipsychotic. A year ago, she consulted a neurologist, complaining of a headache lasting 38 days, with a pain score of 8/10 VAS, refractory to NSAIDs, with throbbing pain in the occipital region radiating to the cervical area, associated with photophobia, phonophobia, and aura, which worsened with physical exertion and stress. She was treated with topiramate, oral corticosteroids, and beta-blockers for control, and triptan for acute relief. Due to the lack of response to initial treatment, she used anticonvulsant and muscle relaxant, along with lifestyle changes. However, with the persistence of pain, anticonvulsant and antipsychotic were added to her regimen alongside topiramate. Given the inefficacy in pain control, treatment with progressive doses of cannabidiol was initiated at 20 mg/day, with an increase of 25 mg/week, along with continuous anticonvulsant use. There was an improvement in the headache with symptom resolution by the fourth week. Currently, she uses 1 mL/day (50 mg/mL) of CBD, reporting one episode of headache (VAS 6/10) after a month of CBD use, relieved with triptan.

Conclusion
The diagnosis and treatment of migraine should be individualized for each patient. In this context, the therapeutic use of cannabidiol for treatment-refractory migraine cases is a recent alternative in the scientific literature, requiring further studies to be effectively understood and established as a potential approach for a broad spectrum of disease manifestations.

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Morbidity and Mortality of ICD: Migraines and Other Cephalic Pain Syndromes by Age Group and Gender in Brazilian Regions

Vitória Luisa Batista Cezar, Marcelo Alves de Souza

Universidade Federal do Paraná, Curitiba, Paraná

Introduction

Headaches are the third most common complaint in outpatient services, with a prevalence of 10.3%, second only to respiratory tract infections and dyspepsia. Understanding hospitalizations and deaths related to headaches is essential for studying their etiology, treatment, and prevention.

Objective

Analyze hospitalization and death rates due to headaches in different Brazilian regions from 2019-2023, providing epidemiological data to aid in developing strategies to combat the disease.

Methods

Longitudinal observational epidemiological study covering Brazil's demographic regions from 2019-2023. Data were sourced from the SUS Informatics Department (DATASUS) and the Hospital Information System (SIH/SUS) based on hospitalizations and deaths recorded by ICD-10 (G43; G43.0; G43.1; G43.8), considering sex and age variables.

Results

Migraines and similar conditions, despite high outpatient demand, accounted for only 0.086% of hospitalizations over the past five years. The Southeast and Northeast showed stable rates between 2019-2023 (<0.01 amplitude), while the South and Center-West exhibited greater fluctuations (>0.01). The North recorded a continuous increase in hospitalizations (from 0.0601% to 0.1081%), reflecting higher disease rates requiring hospitalization. Specific ICD mortality rate for hospitalizations in Brazil was 0.95%, with the North region showing a higher average (around 2.87%). The Northeast showed a gradual increase (1.07%-2.30%), while other regions remained below 0.7%, indicating possible variations in regional health policies, medical infrastructure, and disease prevalence. The were a female predominance in hospitalizations, with regional averages from 2.20 (Southeast) to 1.82 (North). The highest hospitalization rates were among the age groups 20-29 and 30-39 years (1739,6; 1860,2 national means respectively), decreasing gradually after age 40 (1730,2) onwards, which menopause and work-related stress may have influenced. Hospitalizations for children and adolescents were higher in the Northeast, Southeast, and South (regional means: 330,4; 339,4 339,4) regions compared to North and Center-West (62,2; 64).

Conclusion

During the analyzed period hospitalization and death rates due to headaches in Brazil remained a stable overall. Data showed significant variations concerning region, gender and age, indicating the need to consider regional and demographic differences in developing public health plans and policies to minimize public spending and reduce patient suffering.

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Differences in cortical activity in interictal, ictal, and chronic migraineons

Marcelo Filipchuk[1,2], Mariela Carpinella[1], Tatiana Castro Zamparella[1,3], Diego Conci[1], Gianluca Coppola[3], Jean Schoenen[4]*, Marco Lisicki[5,2]

[1]Neuroscience Unit, Conci-Carpinella Institute, Córdoba, Argentina.
[2]Neurology Department, Hospital Universitario Ramón y Cajal, Madrid, Spain.
[2]Psychological Research Institute, Faculty of Psychology, National University of Córdoba (UNC) - National Council for Scientific and Technical Research (CONICET)
[3]Department of Medico-Surgical Sciences and Biotechnologies, Sapienza University of Rome Polo Pontino, Latina, Italy
[4]Headache Research Unit, Department of Neurology, University of Liège, Liège, Belgium
[5]Headache Laboratory, Instituto de Investigaciones Médicas Mercedes y Martín Ferreyra, Córdoba, Argentina.

Introduction
Migraine is a fluctuating disorder. Analyzing changes in cerebral activity at different stages of migraine has significantly advanced our understanding of its pathophysiology. However, most neuroimaging methods evaluate indirect markers of brain activation, such as regional metabolism or blood flow. In contrast, electrophysiological assessments provide direct information about underlying neuronal processes. This study aimed to compare cortical activity among interictal, ictal, and chronic migraine patients and healthy controls using an electrophysiological-based neuroimaging approach.

Materials and Methods
One hundred participants (25 healthy controls and 75 migraine patients: 25 ictal, 25 interictal, and 25 chronic) were included. A sixty-second low-artifact resting-state 22-channel electroencephalogram (EEG) segment from each individual was analyzed using Exact Low Resolution Brain Electromagnetic Tomography (eLORETA). Mean subject-normalized Delta, Theta, Alpha, Beta, and Gamma band activity was compared (whole brain, voxel-wise) between groups using Statistical Parametric Mapping (SPM) nested in MATLAB. Brain areas showing differences in neural activation were selected for data-driven post-hoc region of interest (ROI) analyses.

Results
Significantly decreased activity in the left subcallosal area was observed in ictal migraine patients compared to other groups. Additionally, increased activity in the right temporoparietal junction was noted in ictal migraine patients compared to interictal migraine patients, and increased activity in the left temporoparietal junction in interictal patients compared to healthy controls.

Conclusions
Our results are anatomically consistent, but mostly physiologically discordant with previous neuroimaging studies.(1) Notably, we observed increased neuronal activity in the right temporoparietal junction and decreased activity in the left subcallosal area in ictal patients, both areas previously reported to be activated in this stage using conventional neuroimaging techniques. We hypothesize that these discrepancies arise because inhibitory and excitatory neuronal activity produces similar metabolic changes, making them indistinguishable to conventional neuroimaging techniques, but easily discriminated using electrophysiological methods. The decreased activity in the left subcallosal area appears to be a homeostasis-restoring mechanism, absent in healthy controls and interictal patients, maximal in ictal patients, and dysfunctional in chronic migraine.

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Migraine Prevalence: Findings from the Americas' Migraine Observatory Study (AMIGOS)

Marco Lisicki[1], Joe Munoz-Cerón[2], Elder Machado Sarmento[3], Arao B. Oliveira[4], Marcelo Moraes Valença[5], Juliana Ramos de Andrade[6], Karina Vélez-Jiménez[7], Ildefonso Rodriguez-Leyva[8], Alex Rodrigo Espinoza Giacomozzi[9], Ernesto Bancalari[10],Pablo Schubaroff[11], Mario F P Peres[12]

[1]Instituto Mercedes y Martín Ferreyra, Córdoba, Argentina.
[2]Hospital Universitario Mayor Mederi - Universidad del Rosario, Bogotá, Colombia.
[3]Centro Universitário de Volta Redonda – UniFOA, Volta Redonda, Brazil
[4]Center for Clinical and Epidemiological Research, Hospital Universitário, Universidade de São Paulo, São Paulo, Brazil.
[5]Centro de Ciências Médicas, Universidade Federal de Pernambuco, Recife, Brazil. -
[6]Universidade Federal de Pernambuco, Recife, PE, Brasil -
[7]Department of Neurology, Hospital Angeles Lomas, Ciudad de México, México.
[8]Neurology Department, Universidad Autónoma de San Luis Potosí, México -
[9]Clínica Red Salud, Santiago, Chile.
[10]Faculty of Medicine, Universidad Católica Santo Toribio de Mogrovejo, Perú.
[11]Servicio de Neurología, Hospital Bernardo Housay, Buenos Aires, Argentina.
[12]Institute of Psychiatry, University of São Paulo. Hospital Israelita Albert Einstein, São Paulo, Brazil.

Introduction
Ascertaining the prevalence of headache disorders is fundamental for designing effective public health strategies. Epidemiologic studies conducted in individual countries often lack consistent methodologies, limiting broader interpretation. The Americas' Migraine Observatory Study (AMIGOS) is a Pan-American epidemiological study designed to evaluate the burden and access to treatment of migraine and other headache disorders across the Americas. Here, we present preliminary data on migraine prevalence.

Objectives
To describe the prevalence of migraine in the Americas using a unified sampling methodology at a specific time point.

Materials and Methods
Data were collected online from a sample representative of the demographic and social characteristics of each country, with a confidence level of 98% and a margin of error of 5%. We conducted both qualitative and quantitative research on key aspects of headaches among 17,037 individuals in 20 countries from Canada to Chile. Migraine diagnosis was made based on the ICHD-3 criteria.

Results
The overall prevalence of migraine was 9.74% (12.6% among females, 6.8% among males). The highest prevalence was observed in Brazil (14.1%), Canada (13.3%), and the United States (13.1%), while the lowest prevalence was found in Bolivia (5.6%), Paraguay (6.7%), and Guatemala (7.5%). On average, migraine sufferers reported experiencing headaches 6.5 days per month, with 14% experiencing headaches on fifteen or more days per month.

Conclusion
This is the first comprehensive Pan-American migraine epidemiological study. Results indicate that migraine is highly prevalent in the Americas, with significant variations among different countries. Genetic and environmental factors may explain these observed differences.

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Migraine under treatment: Findings from the Americas' Migraine Observatory Study (AMIGOS)

Marco Lisicki[1], Joe Munoz-Cerón[2], Elder Machado Sarmento[3], Arao B. Oliveira[4], Marcelo Moraes Valença[5], Juliana Ramos de Andrade[6], Karina Vélez-Jiménez[7], Ildefonso Rodriguez-Leyva[8], Alex Rodrigo Espinoza Giacomozzi[9], Ernesto Bancalari[10], Pablo Schubaroff[11], Mario F P Peres[12]

[1]Instituto Mercedes y Martín Ferreyra, Córdoba, Argentina.
[2]Hospital Universitario Mayor Mederi - Universidad del Rosario, Bogotá, Colombia.
[3]Centro Universitário de Volta Redonda – UniFOA, Volta Redonda, Brazil
[4]Center for Clinical and Epidemiological Research, Hospital Universitário, Universidade de São Paulo, São Paulo, Brazil.
[5]Centro de Ciências Médicas, Universidade Federal de Pernambuco, Recife, Brazil. -
[6]Universidade Federal de Pernambuco, Recife, PE, Brasil -
[7]Department of Neurology, Hospital Angeles Lomas, Ciudad de México, México.
[8]Neurology Department, Universidad Autónoma de San Luis Potosí, México -
[9]Clínica Red Salud, Santiago, Chile.
[10]Faculty of Medicine, Universidad Católica Santo Toribio de Mogrovejo, Perú.
[11]Servicio de Neurología, Hospital Bernardo Housay, Buenos Aires, Argentina.
[12]Institute of Psychiatry, University of São Paulo. Hospital Israelita Albert Einstein, São Paulo, Brazil.

Introduction
Migraine patients face significant challenges that limit their access to treatment. Epidemiologic studies conducted in individual countries often lack consistent methodologies, hindering broader interpretation. The Americas' Migraine Observatory Study (AMIGOS) is a Pan-American epidemiological study designed to evaluate the burden and treatment of migraine and other headache disorders across the Americas. Here, we present preliminary data on migraine treatment rates.

Objectives
To describe the percentage of individuals suffering from migraine in the Americas using acute and prophylactic treatment through a unified sampling methodology at a specific time point.

Materials and Methods
Data were collected online from a sample representative of the demographic and social characteristics of each country, with a confidence level of 98% and a margin of error of 5%. We conducted both qualitative and quantitative research on key aspects of headaches among 17,037 individuals in 20 countries from Canada to Chile. Migraine diagnosis was made based on the ICHD-3 criteria.

Results
Overall, 73.3% of migraine patients reported using acute medication for their attacks. Higher percentages of acute medication use were observed in Bolivia (88.2%), while lower rates were found in Brazil (59.8%). Current and past use of preventives were reported by 19.5% and 8.1% of migraine patients, respectively. Preventive use was highest in Peru (42.6%) and lowest in Uruguay (7.2%). Among those who were not taking and had not taken prophylactic medications in the past, 54.7% experienced headaches on four or more days per month. This percentage rose above 60% in Venezuela (64.3%), Guatemala (63.9%), Costa Rica (63.3%), Nicaragua (61.7%), and the USA (60.7%), and was lowest in Uruguay (40.5%).

Conclusion
This is the first comprehensive Pan-American migraine epidemiological study. Results indicate that migraine is largely undertreated in the Americas, with the most alarming figures related to prophylactic treatment. Improving access to headache care in the region is essential.

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Rare Case of Secondary Headache Due to Intracranial Dural Arteriovenous Fistula

Ana Caroline Benin[1], Tiago Silva e Carvalho[2], Sofia Stein Corrêa da Cunha[3], Laura Spengler Zen[4]

[1]Neurologist MD at Santa Catarina Hospital in Blumenau, Santa Catarina, Brazil
[2]Neurosurgeon and interventional neuroradiologist MD at Santa Catarina Hospital in Blumenau, Santa Catarina, Brazil.
[3,4]Regional University of Blumenau in Blumenau, Santa Catarina, Brazil.

Introduction

Spontaneous subarachnoid hemorrhage (SAH) accounts for 5% of all strokes, 85% caused by the rupture of intracranial aneurysms. There are many potential causes of non-aneurysmal SAH (15%), sometimes the source of bleeding is not identified. Up to 10% of SAH cases are caused by vascular malformations, such as cerebral arteriovenous malformations (AVMs) or dural arteriovenous fistulas (DAVF), which account for 15% of these malformations. DAVF is defined by an abnormal connection between branches of arteries and veins in the dura mater.

Objectives

We present a rare case of secondary headache due to DAVF.

Case report

A 55-year-old female presented to the emergency department reporting "the worst headache of her life". In the previous week, she experienced a mild occipital headache. Her medical history included systemic hypertension, treated breast cancer, currently taking the oral aromatase inhibitor Letrozole, and right mastoidectomy due to recurrent otitis. Blood pressure, neurological and general clinical examination were unremarkable. Due to alarm signs in her history, a cranial CT scan of the head with and without contrast was performed, showing minimal cortical hyperdensity in the left frontal region suggestive of subarachnoid hemorrhage. Subsequently, an MRI was performed, confirming minimal hyperintensity on FLAIR. Magnetic Resonance Angiography (MRA) was unremarkable. She underwent cerebral digital subtraction angiography, which demonstrated a right parietal dural arteriovenous fistula – with irrigation by the posterior meningeal artery (branch of the ascending pharyngeal artery) and drainage to a single cortical vein, classified as Cognard type 3. Embolization of the fistula was performed using liquid embolic material, resulting in complete resolution, and the patient was discharged asymptomatic 2 days later. After 2 years of follow-up, she remained free of new headaches, and control angiography showed total exclusion of the fistula.

Conclusion

Dural arteriovenous fistulas with cortical venous drainage are associated with a high risk of bleeding and early rebleeding. The history of right mastoidectomy, as the oral taking of aromatase inhibitor were considered as possible risk factors in our case. This case report illustrates the importance of paying attention to alarm signs related to headaches, as well as conducting proper and early investigation and treatment.

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Status Migrainosus and Ischemic Stroke: Clinical and Pathophysiological Connections

Amauri Pereira da Silva Filho[1], Taianara Sampaio Reis[2], Danielle Cortellazzi Colonna Romano[3]

[1]Dom Luiz Gonzaga Fernandes Emergency and Trauma Hospital, Campina Grande, Brazil
[2]Piaui University Hospital,Teresina, Piaui, Brazil
[3]Federal University of Piauí, Teresina, Piaui, Brazil

Introduction

Migraine is one of the most common neurological conditions, affecting a significant proportion of the global population. Within the spectrum of migraines, status migrainosus represents a particularly debilitating and prolonged form, defined by attacks lasting more than 72 hours, with additional neurological risks, particularly ischemic stroke (IS). Objectives: The objective of this review is to synthesize the relationship between status migrainosus and IS, highlighting the underlying mechanisms, risk factors, and clinical implications.

Methods

A detailed search was conducted in the PubMed database using the terms "status migrainosus" and "ischemic stroke" to investigate the connection between these two conditions. Thirty-two relevant articles published between 2010 and 2023 were reviewed, exploring the relationship between status migrainosus and IS, including shared pathophysiological mechanisms and common risk factors.

Results

Migraine with aura was significantly associated with an increased risk of IS due to mechanisms such as endothelial dysfunction and hypercoagulability. Additionally, blood-brain barrier dysfunction and vascular inflammation were identified as further factors linking aura to IS. Women showed an elevated risk of migraine with aura and IS, which may be attributed to hormonal factors. A shared genetic predisposition between migraine and IS was identified, suggesting that genetic variants may influence the risk of IS in individuals with migraine. Pharmacological therapies have proven effective in the prophylaxis of migraine and reduction of IS risk. Furthermore, lifestyle changes and control of vascular risk factors were highlighted as complementary preventive measures.

Conclusion

Although not all articles specifically address status migrainosus in detail, the interconnection between migraine and ischemic stroke is clearly evidenced in the literature. The identification of shared risk factors and common pathophysiological mechanisms underscores the need for an integrated approach in managing patients with migraine, particularly those with prolonged attacks. Continued research in this area is crucial to enhance preventive and therapeutic strategies aimed at reducing the incidence of ischemic events in predisposed individuals.

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Non-pharmacological therapies in the management of cervicogenic headache: a literature review

Milena Maciel Leite[1], Laissa da Veiga Lustosa[1], João Victor de Aguiar Fernandes[2], Yasmim Silveira Gonçalves[3], Maria Eduarda Freire dos Santos[1], Wagner Gonçalves Horta[3]

[1]Universidade Estadual de Santa Cruz , Ilhéus, Bahia
[2] Universidade Católica de Pernambuco, Recife , Pernambuco
[3]Universidade Federal da Integração Latino-Americana, Foz do Iguaçu, Paraná
[4]Universidade Católica de Pernambuco, Recife, Pernambuco

Introduction
Cervicogenic headache (CGH) is a secondary headache with a prevalence of 17.8% among headaches. It impacts quality of life, causing disability in social activities. CGH manifests as unilateral headache accompanied by nausea, neck pain, phonophobia, and photophobia. Differential diagnosis includes migraine, cervical spondylosis, and tension-type headache. Treatment combines pharmacological approaches with non-drug therapies, although there is controversy in the literature regarding which non-pharmacological options are most effective.
Objective
Analyze the most effective non-pharmacological therapies for improving the quality of life of patients with cervicogenic headache.
Methodology
This is a literature review using the Medline database via PubMed, with the descriptors "Cervicogenic headache" and "Quality of life," combined with the Boolean operator "AND." A search filter was applied for "title/abstract," and articles published in the last 5 years were included. The inclusion criteria were articles with meta-analysis and literature reviews, resulting in 9 articles in English. The exclusion criteria were articles which were not available for reading and those dealing with neck pain, leaving 7 articles for analysis.
Results
Physical therapy is the first-line treatment for CGH. Sustained Natural Apophyseal Glides (SNAG) mobilizations lead to favorable outcomes and improve the cognitive-affective aspect of pain. Spinal manipulative therapy reduces the intensity and frequency of pain, though its effects are small and short-term. Cervical decompression surgery has shown positive results in patients with CGH associated with cervical spondylotic myelopathy, indicating a neuropathic pain mechanism for CGH. Dry-needling reduces the frequency of CGH in the short term. However, it is recommended not to apply this therapy in isolation, but to combine it with pharmacological treatment to obtain better results.
Conclusion
Therapies with a pharmacological and non-pharmacological approach, such as physiotherapy, dry needling, and even surgery, constitute the current relief practices for cervicogenic headache. Therefore, the heterogeneity of techniques does not allow the most effective one to be chosen, but it does allow them to be combined for the individual management of each patient in order to improve quality of life, aiming to reduce the intensity and frequency of episodes.

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From acupuncture to radiofrequency ablation: evidence and recommendations of treatments for cervicogenic headache

Letícia Pereira Arce, Carolina Muller Dias, Cristiane Ribeiro, Gabriel dos Santos Oliveira, Kawan Souza Furio, Igor Miguel Pinkoski, Lara Sabrinna Noronha Lima, Sara Pessoa de Oliveira, Gabriel Zucoli Scalabrin, Giselle Hech

Universidade Federal do Paraná, Curitiba, Paraná

Introduction

Cervicogenic headache (CGH) is a secondary headache arising from cervical spine disorders that must be distinguished from tension type headache. CGH may be managed through various therapeutic interventions aimed at alleviating pain and improving function.

Objective

This summary aims to evaluate the available treatments for cervicogenic headache, their indications and the level of evidence supporting them.

Methodology

A comprehensive literature review was conducted, focusing on studies that investigated the treatment of CGH. The search across MEDLINE, WPRIM, and PubMed databases used "cervicogenic," "headache," and "treatment" as search terms, yielding 64 results. After screening for relevance, 37 articles were included.

Results

Multiple treatment options are available for CGH, including cervical epidural steroid injection (CESI), acupuncture, manipulation and mobilization (manual therapy), radiofrequency ablation, deep cervical plexus block, and botulinum toxin injections. High-level evidence supports CESI, acupuncture and manual therapy. CESI is recommended for moderate to severe CGH, refractory to conservative treatments, showing improvements in pain scores. Acupuncture is suitable for patients seeking non-pharmacological treatment, reducing pain and improving functionality. Manual therapy is considered first-line treatment, with randomized controlled trials showing that combining cervical manipulation and exercises is more effective than mobilization alone.

Radiofrequency ablation and deep cervical plexus block are indicated for CGH that does not respond to other interventions, showing high efficacy and prolonged pain relief, with moderate evidence . Deep cervical plexus block is applied for short-term pain management in refractory cases, with short-term effectiveness, though its long-term benefits are limited. Botulinum toxin injections, considered when other treatments fail, have low to mixed levels of evidence (3 and 4) as they are not consistently superior to placebo in controlled trials.

Conclusion

Options ranging from conservative therapies like manual therapy and acupuncture to interventional approaches are available. The choice of treatment depends on the severity of symptoms, patient preference, and response to initial therapies. High-quality evidence supports the use of CESI, acupuncture, and radiofrequency ablation for significant and sustained pain relief, while treatments like botulinum toxin injections require further research to establish consistent efficacy. Future studies with long-term follow-up and comparative effectiveness of these interventions are needed.

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Relationship between headache prevalence and long COVID-19: a narrative review

Jonathan Lima de Oliveira Silva, Gabriel Pier, Flavia Julyana Pina Trench

Universidade Federal da Integração Latinoamericana, Foz do Iguaçu, Paraná

Introduction

COVID-19, an infectious disease caused by the SARS-CoV-2 virus first identified in China, has precipitated a pandemic of unprecedented scale since 2020. While the primary impact of COVID-19 is on the respiratory system, its clinical manifestations are extensive and can endure for weeks post-infection, leading to what is termed post-COVID or long COVID. This condition is characterized by the persistence of symptoms, signs, or clinical parameters for two or more weeks beyond the acute phase, without returning to a pre-infection healthy state. Among the most prevalent symptoms in this context is headache. Although the precise mechanisms remain under investigation, it is hypothesized that SARS-CoV-2 might infiltrate trigeminal nerve endings by compromising the blood-brain barrier, activate the trigeminovascular system via endothelial cells expressing ACE2, or stimulate perivascular trigeminal nerve endings through the release of cytokines and pro-inflammatory mediators. These processes could lead to headache as a primary symptom, alongside fatigue, myalgia, anosmia, dysgeusia, and behavioral disturbances.

Objective

To review the literature on the prevalence of headache among individuals who have fully or partially recovered from COVID-19 symptoms (post-COVID/long-COVID).

Methods

A comprehensive search was performed in the PubMed database for articles categorized as clinical trials, meta-analyses, randomized controlled trials, and systematic reviews, using the descriptors "COVID OR COVID-19," AND "headache OR migraine," AND "long term OR post-COVID." Only studies that systematically analyzed data on post-COVID neurological sequelae were included.

Results

The search yielded 86 articles, of which 24 met the inclusion criteria deemed pertinent to the review's objective. The findings revealed variability in the definition of post-COVID, with durations ranging from two weeks to three months post-infection. There was also inconsistency in headache assessment methodologies, but most studies identified headache among the top three sequelae, with prevalence rates varying from 8% to 91%, and a median prevalence of 40%.

Conclusion

Headache is a prominent symptom of COVID-19, persisting as a neurological sequel in post-COVID cases and significantly affecting recovered individuals. Further rigorous studies are necessary to identify risk factors, vulnerable populations, and effective prophylactic measures.

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Series of 10 Cases of Idiopathic Intracranial Hypertension - Critical Evaluation of Progression and Management

Ádria Rodrigues da Silva[1], Bruna Beppler[1], Lia Maki Hatisuka Imai[1], Caroline Zapelini[1], Aline Vitali da Silva[2]

[1]Hospital Universitário Regional do Norte do Paraná da Universidade Estadual de Londrina, Londrina, Paraná, Brazil.
[2]Pontifícia Universidade Católica do Paraná, Campus Londrina, Medicine School, Department of Medicine, Londrina, Paraná, Brazil.

Introduction
Idiopathic intracranial hypertension (IIH) is a rare disease that presents with headache and predominantly affects women, with obesity as its main risk factor.
Objective
To critically evaluate the progression and management of patients with IIH in a tertiary academic service.
Method
Case series comprising 10 individuals diagnosed with IIH, treated between 2010 and 2023 at the University Hospital of the State University of Londrina, Brazil. Data were obtained through a review of electronic medical records.
Results
All participants were female, aged 16 to 52 years, with disease duration of 1.3 to 14.0 years. Headache was the initial symptom in 9 patients. Visual complaints were present in 5 patients. The initial pain was moderate to severe in 9 patients, pulsatile in 8, unilateral in 6, and frontal in 8. Accompanying symptoms like photophobia were present in 8, phonophobia in 5, and tinnitus in 2 patients. Papilledema was present in 6 patients, abducens nerve paralysis in 2, opening pressure (OP) was ≥250mmH2O in 7, and 3 patients met the radiological criteria for IIH. The treatment of choice was acetazolamide for 7 patients, combined with topiramate in 5, and topiramate monotherapy for 2 patients. Two patients underwent surgical procedures. During follow-up, 3 patients had headaches ≥15 days per month with characteristics similar to the initial presentation. Papilledema and VI nerve palsy were no longer present, radiological criteria were met by only one patient, and 7 patients still had OP ≥250mmH2O. Treatments remained similar; however, there was a need to add headache prophylaxis in 5 patients. Obesity was still present in 4 patients, 3 had overweight, and 3 had no weight record. Among the 5 patients with initial and final weight records, only 2 had lost weight (1.8kg and 1.0kg), while 3 had gained weight (1.7 to 9.0kg).
Conclusion
Headache was the most frequent symptom, with migraine-like characteristics and persistence throughout follow-up, often requiring additional medication for control. Noteworthy was the failure to record weight and there was no significant weight loss, highlighting the need for specific management by professionals with expertise in obesity.

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Relationship between headache prevalence and video games use: a narrative review

Jonathan Lima de Oliveira Silva, Gabriel Pieri, Flávia Julyana Pina Trench

Universidade Federal da Integração Latinoamericana, Foz do Iguaçu, Paraná

Introduction

Since the late 20th century, video games have become a ubiquitous form of entertainment, growing in popularity with technological advancements and the diversification of platforms. While video games offer benefits such as enhanced socialization, a sense of responsibility, teamwork, and planning skills, excessive use can lead to health problems, including headaches, musculoskeletal pain, back pain, and anxiety.

Objective

To review the literature on the relationship between video game usage and the prevalence of headaches in the general population.

Methods

A comprehensive search was performed in the PubMed database for articles categorized as clinical trials, meta-analyses, randomized controlled trials, and systematic reviews using the descriptors "video-game OR videogame OR electronic game" and "headache OR migraine." The inclusion criteria were articles analyzing the relationship between headache and video game usage across all age groups and genders.

Results

The search yielded 57 articles, of which 10 met the inclusion criteria deemed pertinent to the review's objective. The findings demonstrated considerable heterogeneity and divergence. A significant portion of studies focused on children and adolescents, employing questionnaires as the primary data source. There was also variability across study populations, with some articles examining highly specific groups, such as professional gamers, potentially skewing statistics relative to the general population. Moreover, challenges arose in defining the scope of video game studies, as some researchers examined overall electronic device use, including video games. While findings were inconclusive, they suggested a noticeable correlation between increased headache prevalence and prolonged exposure to electronic devices, without specifying a particular type of headache.

Conclusion

A correlation appears to exist between video game usage and headache prevalence; however, the literature lacks nuanced studies addressing this association, particularly regarding the removal of confounding factors and identification of other triggers and causes. The available data suggest a direct proportional risk, especially in younger populations, which have been predominantly studied. Further rigorous research is needed to identify risk factors, more affected groups, and appropriate prophylactic measures.

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Headache as an initial symptom in ischemic stroke: a case report

Jonathan Lima de Oliveira Silva, Gabriel Pieri, Flávia Julyana Pina Trench

Universidade Federal da Integração Latinoamericana, Foz do Iguaçu, Paraná

Introduction

More than 60% of strokes worldwide are ischemic, classified into thrombotic, embolic, and systemic hypoperfusion etiologies. Headache or migraine can manifest as clinical symptoms, more commonly observed in hemorrhagic strokes, which typically present with decreased consciousness levels and early neuroimaging changes.

Objectives

To report a case of an elderly individual who presented suddenly with headache and visual changes as the sole neurological symptoms.

Case Report

A 63-year-old Caucasian male truck driver presented with severe holocranial headache, left amaurosis, and dizziness, seeking medical attention two days after symptom onset and receiving only symptomatic treatment. The sole neurological alteration observed was a poorly reactive left pupil, alongside a BP of 260/117 mmHg. Cranial CT revealed a small cortico-subcortical hypodensity in the right occipital lobe extending into the parietal lobe. Discharged the same day, he deteriorated the following day with left hemibody paresthesia and dysarthria, necessitating hospitalization. Over two days, he experienced hypertensive episodes with agitation and confusion.

His medical history included diabetes and arterial hypertension, managed with Cinnarizine, Losartan, Hydrochlorothiazide, and Carvedilol. Transferred to a municipal hospital five days later in poor condition and sedated, he exhibited isochoric, reactive pupils, a Glasgow Coma Scale score of 6, noisy breathing, tachypnea, and a distended abdomen.

In the ICU, Doppler ultrasound revealed bilateral intimal-medial thickening of the common carotid arteries, with less than 50% stenosis in the internal carotid arteries. Repeat CT ruled out intracerebral hemorrhage. Neurology diagnosed acute ischemic stroke in the occipital region based on brainstem hypodensities and extensive bilateral cortical and subcortical areas.

Despite intensive care, the patient deteriorated progressively with multiple fever peaks and inadequate treatment response, showing no improvement in consciousness. After two weeks in the ICU, he experienced cardiopulmonary arrest and did not respond to resuscitation efforts, succumbing 21 days after headache onset.

Conclusion

Headaches are often underestimated and managed symptomatically, even when accompanied by warning signs such as visual changes and dizziness, as illustrated in this case. Therefore, a reevaluated approach to seemingly straightforward cases is crucial, considering that isolated headaches or migraines may indicate a poor prognosis, particularly in elderly patients with cardiovascular comorbidities.

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Trigeminal Autonomic Cephalalgia secondary to Fibromuscular Dysplasia: a case report

Cesário Barreto Lima Neto[1], Gabriel Hardman Barbetta Paulino[1], Pedro Henrique Naves Rodrigues[2], Nathalia Martins Augusto Pereira Botelho[1], Denise Ferreira França[3], Welber Sousa Oliveira

[1]Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais
[2]Universidade Federal do Triângulo Mineiro, Uberaba, Minas Gerais
[3]Hospital Sírio Libanês, Brasília, Distrito federal
[4]Centro Especializado em Hipermobilidade e Dor, Brasília, Distrito Federal

Introduction
Fibromuscular Dysplasia (FMD) is an uncommon disease of medium-sized arteries that is non-atherosclerotic and non-inflammatory. The renal and extracranial carotid and vertebral arteries are most commonly affected. Registry data shows a high prevalence of headache among FMD patients, typically migrainous characteristics. Hypertension is the most frequent manifestation of renal artery FMD. Cerebrovascular FMD may present with transient ischemic attack, stroke, dizziness, neck pain, cervical artery dissection, or pulsatile tinnitus.

Objectives
We report a case of a man with a prior history of high-frequency migraine-like headaches, who subsequently experienced a change in headache pattern. The patient developed daily, unilateral headaches, accompanied by trigeminal autonomic symptoms. During the investigation, the etiology was found to be FMD.

Case Report
A 47 year-old male patient presented a previous history of high frequency headaches, that occurred 4 to 5 times per week, migrainous characteristics, preceded by visual aura. In 2020, there was a change in the headache pattern: an intense headache, worse on the left side, with psychomotor agitation at the peak of the pain, associated with eye tearing, ptosis, and ipsilateral ocular hyperemia, symptoms characteristic of Trigeminal Autonomic Cephalalgia. Between episodes, the patient experienced shadow headaches. The pain was responsive to subcutaneous Sumatriptan. Then, he underwent an intracranial MRI angiography that indicated arterial dissection in the high cervical and intracranial petrous segments, with narrowing of flow and distal supraclinoid reestablishment by the Circle of Willis. Additionally, it displayed a saccular aneurysm in the cavernous segment of the right internal carotid artery, which was laterally deviated. Due to his Systemic Arterial Hypertension history, an investigation of abdominal vascular alterations was conducted, which revealed a saccular aneurysm in the left renal artery and parietal irregularity in the renal arteries. Consequently, he was diagnosed with FMD.

Conclusion
The possibility of FMD should be suspected in a young or middle-aged patient who presents to the headache clinician for evaluation of chronic migraine headache, particularly in the setting of pulsatile tinnitus, early onset hypertension, or a cervical or abdominal bruit. Imaging is necessary to confirm the diagnosis and direct medical management.

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Bilateral sphenopalatine and bioccipital block as a method for reversing chronic migraine: a case of refractory headache following meningeal cryptococcosis

Camila Souza Galvão[1], Larissa Souza Borowski Mendes[2], Lucas Nagaoka[1], Luana Miyahira Makita[1], Ana Luiza Colleti Dias Bonetti[1], Andressa Christine Sales Rodrigues[1], Júlia Varella Jamnik[1], Vivian Kaori Orikassa[1], Pedro André Kowacs[3]

[1]Complex of the Clinical Hospital of the Federal University of Parana, Curitiba-PR, Brazil
[2]Neurology Department, Complex of the Clinical Hospital of the Federal University of Parana, Curitiba-PR, Brazil
[3]Neurology Department, Institute of Neurology of Curitiba, Curitiba, Brazil; Neurology Division, Clinical Hospital Complex of the Federal University of Paraná, Curitiba-PR, Brazil

Introduction
Peripheral nerve blocks showed success in treating cervicogenic headache, occipital neuralgia, cluster headache, and migraine. This procedure is notable for its effectiveness in acute pain relief and its cost-effectiveness.

Objective
To present a case of peripheral nerve block in a chronic headache refractory to analgesics scenario, exacerbated by a cryptococcal meningitis.

Case Report
INS, a 58-year-old female, presented with sporadic-onset refractory headaches, chronicle and worsened after developing cryptococcal meningitis post-liver transplant 5 years ago. The pain was bilateral, bitemporal, retro-orbital, symmetrical, oppressive, and gradual, peaking within 1 hour. Without analgesics, the pain was continuous, severe, auraless, associated with nausea, vomiting, photophobia, and allodynia. She used 4-6 tablets of 500 mg dipyrone daily. She had late cutaneous porphyria, history of treated breast cancer, cirrhosis secondary to non-alcoholic steatohepatitis and hemosiderosis, treated by transplant, with neurocryptococcosis transmitted from the donor, followed by cytomegalovirus encephalitis and empyema pneumonia. She had immunosuppressive therapy, also use of amitriptyline (25 mg, twice daily), topiramate (50 mg, twice daily), and dipyrone. MRI during meningitis revealed leptomeningeal and ependymal lesions, progressing over 1 year to a right frontal white matter's lesion, possibly due to immune reconstitution inflammatory syndrome.
To alleviate the pain, bilateral blockade of the greater and lesser occipital nerves and sphenopalatine ganglion was performed, administering 2 mL of 0.2% ropivacaine and 50 mcg clonidine per nerve, and 12 mL of the solution via intranasal gauze to the ganglia, volumes selected by safety parameters. The patient reported a 90% reduction in pain intensity and frequency after 4 sessions, reducing the analgesics' necessity. However, during the 5th session, vertigo, nausea, asthenia, and presyncope occurred, leading to temporary treatment interruption. Nonetheless, the patient reported symptom improvement after using common analgesics, which was previously unattainable.

Conclusion
Peripheral blocks are highly effective in treating various types of headaches, including refractory cases as the one reported, secondary to meningeal infection. However, even after well-succeeded sessions, it is crucial to monitorate the patients due to the possible collateral effects, such as vertigo, nausea, asthenia and presyncope. Further studies are necessary to investigate the relevance of these effects and their causes.

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275 Million Migraine Sufferers Without Preventive Treatment Worldwide: Distribution Among GBD Superregions

Ivy Liger[1], Mario Peres[2]

[1]Institute of Psychiatry
[2]Hospital Israelita Albert Einstein

Background
Migraine is a prevalent neurological disease impacting around one billion people globally. According to the Global Burden of Diseases 2021, it is the third leading cause of disability among central nervous system disorders. Despite its significant impact, there are substantial gaps in the optimal management of preventive migraine therapy within global health systems.

Objective
The objective of this study was to review the patterns of access to healthcare treatment for preventive migraine medication among individuals diagnosed with migraine in various GBD regions.

Methods
A search of PubMed for articles published between January 1, 2000, and June 25, 2024, was conducted. Studies included those that reported on healthcare resource utilization, treatment access, unmet needs, and undertreatment of migraines. The American Headache Society (AHS) 2021 Consensus Statement algorithm was used to determine candidacy for preventive treatment.

Results
Out of 587 publications retrieved, 80 met the inclusion criteria. These included 56 from High-Income regions, 14 from South-East Asia, East Asia, and Oceania, 4 from Central Europe, Eastern Europe & Central Asia, 2 from Sub-Saharan Africa, 1 from Latin America & Caribbean, 1 from South Asia, and 2 from North Africa & Middle East. The prevalence of preventive treatment in the migraine population ranged from 0% in Nigeria to 36.2% in Japan, with a global 1-year-age adjusted prevalence of 17.8%.
Based on the AHS consensus statement algorithm, approximately 38.7% of the global migraine population would qualify for preventive treatment. However, around 79.8% of these candidates are not receiving preventive treatment, equating to approximately 275 million people globally.

Conclusions
There are significant gaps and a lack of recent information in the literature regarding the preventive treatment of migraines. More recent, population-based studies are necessary to assess the recognition of migraine preventive candidates and those undergoing preventive treatment, to inform better public health strategies for migraine diagnosis and treatment.

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Dopaminergic Pathways and Their Role in Medication-Overuse Headache: behavioral or analgesic?

Pablo Guarisco Ferreira, Letícia Pereira Arce, Lara Sabrinna Noronha Lima, Pedro Henrique da Silva, Gabriel dos Santos Oliveira, Gabriel Schifter Fumagali, Kawan Souza Furio, Mariana Sofia de Oliveira, Edivarley Rodrigues da Costa Junior, Alcântara Ramos de Assis César

Universidade Federal do Paraná, Curitiba, Paraná

Introduction

With an estimated prevalence of up to 2% worldwide, medication-overuse headache (MOH) is defined by the International Classification of Headache Disorders 3rd edition (ICHD-3) as a secondary headache, occurring 15 or more days per month, result from a deterioration of a pre-existing headache due to medication use excessive use of acute headache medications for more than 3 months. It is an important factor in the chronicity of primary headaches and its pathophysiology remains under investigation.

Objective

To evaluate the evidence linking dopaminergic dysfunction to the pathophysiology of MOH and determine whether dopamine's role is analgesic, behavioral or both.

Methodology

A comprehensive literature search was conducted using PubMed and Virtual health Library (VHL) Regional Portal as databases, with the descriptors "dopamine" and "medication overuse headache." Inclusion criteria were studies addressing dopaminergic pathways, receptor involvement or neuroimaging findings related to MOH. Therefore, fifteen articles were evaluated.

Results

Genetic studies have found reduced expression of dopamine D2 receptors (DRD2) and dopamine metabolism in patients with MOH, with defects in tyrosine-beta-hydroxylase, resulting in higher levels of available dopamine. Neurofunctionally, the main dopaminergic pathway affected is the mesocorticolimbic pathway (known as the reward system region), with dysfunctions also present in the nigrostriatal pathway. Neuroimaging studies showed reduced activity in the substantia nigra/ventral tegmental area (SN/VTA) and increased activity in the ventromedial prefrontal cortex (VMPFC) in MOH patients, similar do addictions, indicating a link between medication overuse and dopaminergic dysfunction. This scenario points to a behavioral impact, with a greater predisposition to impulsivity and the maintenance of excessive medication consumption, favoring the chronification of the headache. Although medications that act to modulate dopaminergic activity – such as chlorpromazine – are described in the literature, the few studies that demonstrate the analgesic action related to dopamine do so indirectly through their action on prolactin levels and prevention of nociceptor sensitization.

Conclusion

Studies suggest the presence of dopaminergic dysfunction in MOH, especially in the mesocorticolimbic pathway. The findings suggest a mainly behavioral impact of dopamine in controlling the disease, with the potential for treatment strategies that assist in more effective management of MOH.

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The relationship between screen exposure and the increase in headache rates: a narrative review

Vinícius Salimos Ferreira, Milena Kawana Roza, Mariangela Beatriz Hoisler dos Santos, Paula Rafaella Teixeira Barbosa Pinto, Yasmim Silveira Gonçalves

Universidade Federal da Integração Latino-Americana

Introduction

Over the years, there has been a noticeable increase in the daily use of electronic devices among citizens. Due to the new lifestyle adopted by the population, various health consequences have emerged, among which the increase in the incidence of headaches is one of the most noticeable. The possibility that headaches related to screen use can impair health is a current reality with impacts and damages aren't yet fully understood, making it essential to study the relationship between them in greater depth.

Objective

To correlate high exposure to electronic device screens with the onset of headaches.

Method

This is a narrative review conducted in the Medline database via PubMed and SciELO databases using the descriptors "headache", "headache disorders", "computer", "smartphone", "cellphone" and "screen time" between 2019 and 2024 in English.

Results

A direct relationship was observed between screen exposure time and higher rates of headaches, as individuals who reduced their use of digital devices showed a decrease in headache occurrences. Individuals exposed to screens for 4 to 6 hours daily are the most affected group. An exacerbating factor for increased screen time was the COVID-19 pandemic, which induced greater use of electronic devices due to online classes and remote work. The brightness and frequency of the light were the factors that most impacted the occurrence of headaches. Age group is correlated with the risk of headaches, with adults being more affected compared to children; however, the age at which exposure to digital devices begins is also a significant factor.

Conclusion

A strong correlation between screen exposure and a higher incidence of headaches was commonly observed among the researched articles. The main factors triggering this increase include longer exposure time, brightness and frequency of the light, age at which exposure to digital devices begins, and the user's age. These findings demonstrate the importance of the subject matter and highlight the urgency of further studies to understand the long-term health impacts on individuals.

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Case Report: occipital headache with ipsilateral autonomic symptoms

Isabella Cajuela Marin, Marcio Nattan Souza, Ida Fortini, Gabriel Taricani Kubota, Caio Vinicius de Meira Grava Simioni, Felipe Reinaldo Deus Ramos Santos, Bruno Pissolati Mattos Gonzaga, Jose Lopes de Vasconcelos Junior, Bernardo Dror Felsenfeld Junior, Luiz Gomes de Sá Neto

Universidade de São Paulo, São Paulo, São Paulo

Introduction

Trigeminal autonomic cephalalgias (TACs) are primary unilateral headaches that typically affect the trigeminal territory, most commonly the V1 division. They are accompanied by prominent autonomic symptoms such as eyelid edema, ptosis, miosis, lacrimation, and eye redness. Atypical presentations, such as bilateral cluster headaches, have been described in the literature.

Objective

To report a case of a short-lasting, recurrent occipital headache associated with ipsilateral autonomic features and the response to indomethacin during follow-up at the Central Institute of the University of Medicine at the University of São Paulo.

Case Report

A 64-year-old female patient with a personal history of restless legs syndrome, obstructive sleep apnea, arterial hypertension, depressive disorder, and critical cervical spinal canal stenosis with arthrodesis in 2010 presents with headaches that began 20 years ago. The headaches were unilateral and occipital, lasting four minutes, with an average frequency of four episodes daily, associated with tearing and eyelid ptosis ipsilateral to the pain. Additionally, the patient reports a second daily neck pain related to movement. On examination, there was mild pain on palpation of the greater and lesser occipital nerves on the left and pain in the area of the bilateral trapezius muscle. Over the years, various treatment attempts, including gabapentin, lamotrigine, amitriptyline, topiramate, botulinum toxin, and verapamil, were unsuccessful. Melatonin was introduced, resulting in a slight improvement in frequency, and subsequently, indomethacin was initiated. Currently, with the use of indomethacin 50 mg daily, combined with melatonin 5 mg, there has been a significant reduction in the frequency of pain, decreasing to weekly episodes. Complementary tests included skull resonance with intracranial arterial and venous angiography from 2017, which showed no abnormalities.

Conclusion

We report a patient with occipital headache associated with atypical trigeminal activation that does not meet the criteria for paroxysmal hemicrania, cluster headache, SUNCT/SUNA, or migraine. However, there is a notable response to indomethacin.

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Efficiency indicators for the care of patients with headaches in the emergency department

Bruno Felipe Novaes de Souza, Claudia Cristina de Lira Santana, Juliana Ramos de Andrade, Marcelo Moraes Valença

[1]Programa de Pós-Graduação em Neuropsiquiatria e Ciências do Comportamento da Universidade Federal de Pernambuco, Recife, Pernambuco
[2]Laboratório de Imunopatologia Keizo Asami (LIKA) da Universidade Federal de Pernambuco, Recife, Pernambuco

Introduction
Headache is among the routine complaints in emergency services. It is estimated that 1 to 4% of visits are due to this cause, which directly impacts hospital resources and logistics. Indicator management allows for a detailed analysis of patient flow, presenting itself as an important tool for healthcare service management.
Objective
To evaluate efficiency indicators for the care of patients with headaches in the emergency department of a private hospital in Recife.
Method
A cross-sectional study was conducted in a private hospital in Recife. Data from the Electronic Patient Record from January to June 2024 were used, extracted using a Business Intelligence-based tool. Visits with International Classification of Diseases codes R51, G44.2, G43.0, G43.1, and G43.8 were included, and patient age and sex, as well as emergency visit outcomes, were evaluated. Indicators analyzed included time of care, performance of exams, evasion, and variation of visits between shifts and days of the week.
Results
The sample included 2,304 patients, representing 4.7% of emergency visits. Most patients with headaches were female (1,726/2,304; 74.9%), with an average age of 39 years (minimum: 18; maximum: 95). Neuroimaging exams were performed on 831 (36%) patients, with cranial tomography being the most common (723/928; 77.9%). The evasion rate was 4.6%, and the hospitalization rate was 4.2%. The average care time was 2 hours and 58 minutes, increasing to 7 hours for patients who were hospitalized. Among those who underwent neuroimaging, the time was 3 hours and 41 minutes. The highest number of visits (40%) occurred in the afternoon, from 1 PM to 7 PM, and the shortest care time (2 hours and 46 minutes) was recorded at night.
Conclusion
The prevalence of headache visits occurred among women in the afternoon. The high utilization of imaging exams points to the need for developing clinical protocols to optimize resources, reduce care time and evasion rates, and improve service efficiency and patient satisfaction.

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Assessment of nurses' approach to headache during triage in the emergency department

Claudia Cristina de Lira Santana[1], Bruno Felipe Novaes de Souza[1], Juliana Ramos de Andrade[2], Marcelo Moraes Valença[1]

[1]Programa de Pós-Graduação em Neuropsiquiatria e Ciências do Comportamento da Universidade Federal de Pernambuco Recife, Pernambuco
[2]Laboratório de Imunopatologia Keizo Asami (LIKA) da Universidade Federal de Pernambuco, Recife Pernambuco

Introduction
Nurses need a broad set of information and skills to properly assess patients during triage in the emergency department. Most healthcare services use the Manchester Triage System, developed in 1997, which improves care by ensuring that patients needing immediate attention receive priority according to the severity of their condition. Headache has its own pathway in this classification system, with the time to treatment varying based on pain intensity.

Objective
To evaluate nurses' approach to headache during triage in the emergency department of a private hospital.

Method
Data were retrospectively obtained from the Electronic Patient Record using a Business Intelligence tool. All visits from June 2024 were analyzed, including patients diagnosed with headache in the emergency department of a private hospital in Recife, which uses the Manchester Triage System. Variables assessed included the flowchart chosen by the nurse during triage, the color of the wristband assigned during risk classification, medical diagnoses, and characteristics of the patients' primary complaint.

Results
Of the 7,464 visits, 361 (4.8%) were for patients with a medical diagnosis of headache and its variations. Of these, 258/361 (71.5%) reported headache as the primary complaint and were placed by the nurse in the "headache" flowchart. The remaining 103/361 (28.5%) were classified by the nurse in other flowcharts. Among patients classified in other flowcharts, 54 showed characteristics of migraine but were not correctly placed in the "headache" flowchart by the nurse. In this group, 14 patients were diagnosed with migraine without aura (G-43.0) and 40 with headache (R-51). A prevalence of the "adult malaise" flowchart (17/54; 31.5%) was observed among incorrectly classified patients. Most patients (333/361; 92.2%) received a green wristband, indicating a treatment time of up to 120 minutes.

Conclusion
Although most patients were included by the nurse in the "headache" flowchart, a portion was still placed in different flowcharts despite presenting characteristics of migraine. This highlights the need to improve the classification of patients with headache.

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Migralepsy: from hypotheses to controversies

Pedro Henrique da Silva[1], Gabriela Silveira dos Santos[1], Andre Luis Strapação[1], Kleber Fernando Pereira[2]

[1]Universidade Federal do Paraná, Curitiba, Paraná
[2]Universidade Federal do Paraná, Toledo, Paraná

Introduction
Migralepsy, defined by the third edition of the International Classification of Headache Disorders as an epileptic seizure triggered by a migraine attack with aura, is a rare condition and a subtype of headache. Its uncertain definition and divergent points of terminology and origin make scientific research difficult.
Objective
To investigate current knowledge about Migralepsy, addressing its possible causes and the controversy surrounding its classification.
Method
Integrative review according to PRISMA, using PubMed, SciELO and MEDLINE. Fifty-six relevant studies were found, and non-pertinent articles were disregarded. Tested Hypotheses: 1- Migralepsy is a condition characterized by epileptic seizures triggered by activation of the trigeminal-vascular system during a migraine attack with aura; 2- Current terminology and diagnostic criteria, such as "seizure triggered by migraine" and " hemicrania epileptica", may be contributing to diagnostic confusion and need to be revised.
Results
The studies reveal confusion between Migralepsy and terms such as "seizure triggered by migraine" and " hemicrania epileptica". It is recommended to exclude these terms from the ICHD-II and consider introducing "ictal epileptic headache" into the ILAE. The hypothesis of activation of the trigeminal-vascular system by widespread cortical depression is often discussed, and the actual existence of migralepsy is questioned.
Purpose of Information
The review aims to clarify what is known or assumed about migralepsy, from its causes to its controversial classification, as well as providing a clearer and more critical understanding of migralepsy, helping to distinguish between migraine with aura and epileptic crises.
Clinical importance
Contribute to the development of more precise diagnostic criteria and appropriate terminology, improving the accuracy of diagnoses and clinical management. It highlights the need for additional, detailed research, which is crucial to validating the existence of migralepsy and defining its pathophysiology.

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Brazilian Medical Students' Knowledge and Interest in Headache and Other Common Pain Conditions: A Comprehensive Survey

Fernanda Firmiano Casarotto, Caroline Matielo Ricci, Isadora Miarelli Fortuna, Lucas da Silva Oliveira, Hilton Mariano da Silva Júnior

Departamento de Neurologia da Faculdade de Medicina da Pontifícia Universidade Católica, Campinas, São Paulo

Introduction

Pain is a pervasive issue in healthcare, necessitating that future doctors are well-versed in various pain syndromes, their origins, diagnoses, and treatments. Assessing their preparedness to manage diverse pain types in emergency and outpatient settings is crucial. However, there are few studies estimating medical students' knowledge and interest in primary pain syndromes(PS), particularly headaches.

Objectives

The study aims to assess medical students' knowledge of the main PS, quantify the frequency of pain-related classes in medical school, and identify potential gaps in the medical curriculum.

Methodology

This cross-sectional, descriptive study involved medical students from various Brazilian universities. Data was collected using an online questionnaire that included demographic information (age, gender, university, year of graduation, faculty, city, and state), objective questions to assess knowledge of main PS, and questions about the frequency of pain-related classes during medical school. The questionnaire was distributed through university communication channels, social media, and student organizations, with responses collected over seven months. Results were subsequently analyzed.

Results

Responses were obtained from 520 undergraduate medical students across 54 medical universities nationwide. Although most students (90%) recognize the frequency of headache complaints in the emergency room, a large portion (56.9%) have not had classes on evaluating these patients initially, and about 70.6% have never participated in conferences on this complaint. In contrast, only 33.7% have not had classes in the emergency department to evaluate patients with chest pain, and only 26.7% have not learned how to approach abdominal pain in the emergency room. These data highlight the negligence of educational institutions regarding headaches compared to other types of pain frequently encountered in hospital settings.

Conclusion

Our results reveal a substantial knowledge gap concerning headaches and other pain syndromes in the medical education curriculum, despite their high prevalence in clinical practice. This deficiency in training leads to patient dissatisfaction, frequent cases of malpractice, and undertreatment. It is crucial for future doctors to address this issue. Therefore, medical students must receive comprehensive education on headache management, particularly in emergencies. Integrating dedicated classes and events into the academic curriculum can enhance proficiency in pain management in clinical practice and healthcare services.

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Evaluating the significance of white matter hyperintensities and infarct-like lesions in patients with migraine: A systematic review

Welber Sousa Oliveira[1], Mario Fernando Pietro Peres[2,3]

[1]Centro Especializado em Hipermobilidade e Dor, Brasília, Brazil
[2]Hospital Israelita Albert Einstein, São Paulo, Brazil
[3]Instituto de Psiquiatria, Hospital das Clínicas da Faculdade de Medicina da USP, São Paulo, Brazil

Introduction
Structural brain changes in magnetic resonance imaging (MRI) like deep white matter hyperintensities, silent posterior circulation territory infarcts, and infratentorial hyperintense lesions are commonly attributed to migraine especially in the conclusion section of imaging reports.

Objective
To review and discuss the association between migraines and subclinical cerebrovascular damage, with emphasis on white matter abnormalities (WMA) and infarct-like lesions (ILL).

Methods
We searched the PubMed database for eligible articles published in English language between 2011 and 2022 that investigated MRI abnormalities in migraineurs based on their titles. The search term used was "brain lesions" OR "white matter lesions" OR "infarct-like lesions" in combination with "migraine." The eligible studies included original case-control, cross-sectional, and cohort studies with structural data collected using conventional MRI of a migraine sample and a contemporaneous control group. We included studies performed using 1.0-3.0 T MRI. Studies performed at 0.5 T as well as functional MRI and positron emission tomography (PET) were excluded. The described search identified 483 articles. Of the selected articles, 11 studies were eligible based on the "article content" analysis.

Results
Brain imaging is done in patients with migraine to exclude the structural causes of secondary migraine and migraine-associated pathology. These imaging procedures often reveal abnormalities like WMA and ILL, which may be a source of concern for neurologists and patients. Studies included in this systematic review presented conflicting results regarding the association between these lesions and their implications in clinical practice.

Conclusion
Considering that the significance of WMA and ILL in migraine and the impact of the results of neuroimaging examinations remains unclear, we propose to avoid the description of WMA and ILL in correlation with migraine, especially in the conclusion section of imaging reports.

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Diário de crises de enxaqueca como indicador de virada hipomaníaca

Jovana Ciriaco, Vinícius Andreata Brandão, Ranielly Correa Lube Santos Brum, Juliana Tancredo Carlini, Natália Lamas Rosario, Maria Clara de Castro e Caetano, Karimy Patrícia Melgaço Moreira, Vinícius de Pádua Sanders Medeiro, Betina Bolina Kersanach, Eduarda Ferro Firme Pina

Universidade Federal do Espírito Santo, Vitória, ES

Introduction

Migraine, a common neurological disorder, often coexists with mood disorders such as bipolar disorder type II (BDII). The link between migraine and mood swings in BDII patients is well-documented. Literature suggests migraine and BD share neurobiological mechanisms, including mitochondrial dysfunction and neurotransmitter abnormalities. Studies also indicate mood swings can trigger migraines in BD patients

Objective

This report aims to elucidate the interplay between migraine and mood disorders, specifically BDII, in a 25-year-old female patient.

Case Report

A 25-year-old black female student began experiencing visual aura episodes at 16, progressing to headaches at 18, characterized by right-sided pulsatile pain, nausea, fatigue, photophobia, phonophobia, osmophobia, irritability, psychomotor slowness, and difficulty concentrating. She was diagnosed with migraine with aura in 2017 and initially treated with amitriptyline, discontinued due to intolerance. She managed symptoms thereafter with dihydroergotamine mesylate, dipyrone monohydrate, and caffeine. In 2022, seeking psychiatric care for worsening symptoms, she was diagnosed with generalized anxiety disorder, starting fluvoxamine and later lamotrigine for mood swings. By January 2023, her migraines intensified alongside a hypomanic episode and two depressive episodes with suicidal thoughts, leading to a diagnosis of bipolar disorder type II (BDII) and treatment with lithium carbonate 600 mg. Since early 2023, she meticulously recorded mood and headache occurrences, identifying correlations between her headaches and mood cycles. Over 487 days, she documented 71 pain days from 31 headache attacks, coinciding notably with 17 of the 71 pain days (24%) during hypomanic episodes, where headaches preceded two episodes by two days. During depressive periods, 9 of the 71 pain days (13%) occurred, with headaches present in the final five days of two episodes.

Conclusion

This case underscores the complex interaction between migraine and BDII, raising the question of whether migraines might act as a prodrome or trigger for mood cycling rather than just a consequence. The findings in the literature and this case emphasize the need for therapeutic approaches that consider the interaction between BDII and migraine for optimal clinical management and improved patient quality of life.

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The role of hospital dentistry and neurology in the conjoined treatment and diagnosis of neuropathies: a case report

Pedro Neri[1], Pedro Rubens Araujo de Carvalho[1], Lucas Adeilson dos Santos Matos[1], Erika Queiroga Ramalho[1], Francisco Willame da Silva, Eliardo Silveira Santos[1], Enzo Lima Alcântara Parente[2], Carla Welch da Silva[1], Rafaella Iughetti da Costa[2], João Vítor Moreira Nogueira[2]

[1] Hospital Geral de Fortaleza, Fortaleza, Ceará
[2] Centro Universitário Christus, Fortaleza, Ceará

Introduction
Neuropathic pain is an algic syndrome resulting from lesion, disease or dysfunction in the central and/or peripheral nervous system and can be associated with invasive dental procedures.

Objective
Report the conjoined role of Hospital Dentistry (HD) and Neurology in the diagnosis and treatment of a patient with peripheral neuropathy (PN).

Case report
67-year-old female diagnosed with trigeminal neuralgia (TN) was referred from a service external to the Neurology ambulatory of Fortaleza's General Hospital- SESA to be evaluated by the HD team, with recommendation of extirpating the inferior alveolar nerve due to the failure of many drug therapies. During the clinical examination, the patient referred to acute and persistent pain in the middle and inferior thirds on the right side of the face which started after an endodontic procedure. In the oral cavity the patient presented bimaxillary partial edentulism, inferior alveolar ridge with signs of resorption and knife edge pattern. Therefore, the PN hypothesis was considered and a new therapeutic protocol was suggested. The management was based on the switch of medication by the doctor team associated with photobiomodulation performed by the HD team. To measure the pain level the Visual Analogue Scale (VSA) was used each session, which made it possible to observe the expressive reduction in symptomatology, reducing the score from 9 to 3 at the end of the second protocol.

Conclusion
The interdisciplinary cooperation between the HD and neurology teams made the correct diagnosis and treatment possible, managing pain and improving life quality through conservative therapy.

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Chronic migraine after catamenial pneumothorax: a case report of headache associated with extra-abdominal endometriosis

Jovana Gobbi Marchesi Ciriaco[1], Lucas Grobério Moulim de Moraes[2], Laíssa Fiorotti Albertino[3], Bianca Garcia Sardi[3], Brenda Comper[3], Beatriz Gomes da Fonseca[3], Breno Sousa Paiva[3], Carlos Eduardo de Nadai[3]

[1]Professor of neurology at the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil
[2]Neurology residente a the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil
[3]Medical students at the Federal University of Espírito Santo, Vitória, Espírito Santo, Brazil

Introduction
Endometriosis is a chronic condition characterized by the presence of endometrial tissue outside the uterus, which can result in chronic pelvic pain and infertility. Its pulmonary form is rare and manifests with chest pain, hemoptysis, pneumothorax, and catamenial hemothorax. Migraine is a neurological disorder characterized by intense headache attacks associated with nausea, vomiting, and photophobia, more frequent in women of reproductive age.Migraines are more common in women with endometriosis, probably due to central sensitization and amplification of the pain response due to inflammation and chronic pain from endometriosis.

Objective
To report an atypical case of endometriosis with catamenial pneumothorax in a patient whose menstrual migraine worsened and became chronic after the pulmonary condition.

Case Report
A 35-year-old woman started having weekly episodes of headache and worsening related to the menstrual cycle. She suddenly presented with dyspnea and chest pain during her menstrual cycle, which progressed to pneumothorax, requiring two surgeries. Biopsy of the right upper lung lobe identified subpleural emphysema which, along with the clinical presentation and pelvic MRI, was presumptively diagnosed as catamenial pneumothorax. After the pneumothorax, the headache became daily, right temporo-occipital, intense (subjective pain scale 9/10), pulsating, radiating to the right hemiface, with intra and extracranial allodynia, aura with nausea, blurred vision, scotomas, photophobia and phonophobia. Post-crisis, mood swings and hyporexia. Dipyrone, sumatriptan and tromethamine do not provide relief. She denies consuming foods that trigger migraines. Currently, at 48 years, she is in the menopause and infertile.

Conclusion
Endometriosis-related migraine usually occurs during the menstrual period and tends to decrease in climacteric due to hormonal decline. In this case, however, the headaches worsened after menopause, suggesting anomalous foci of endometriosis, delaying the climacteric. Thoracic endometriosis is a rare presentation that manifests with right shoulder pain and hemoptysis during the menstrual period, consistent with this patient's presumptive diagnosis of deep thoracic endometriosis. Biopsy is a limited option as it may not detect endometrial tissue depending on the time of the menstrual cycle at which it is performed. The persistence of hormonal stimulation induced by endometriosis acts as a trigger for migraines, aggravated in the climacteric.

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The a novel arthrocentesis technique with vacuum-assisted irrigation for tmj disc displacement without reduction: a case report: a novel arthrocentesis technique with vacuum-assisted irrigation

Eduardo Grossmann[1], Rodrigo Poluha[2]

[1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul
[2] Universidade Estadual de Maringá, Maringá, Paraná

Introduction
Arthrocentesis is an effective treatment to reduce or eliminate pain, increase maximal interincisal distance, and eliminate joint effusion in patients with disc displacement without reduction. This study aims to expose and discuss a new technique proposal of temporomandibular joint arthrocentesis applied in the treatment of a single case of disc displacement without reduction.

Objective
To present and evaluate the outcomes of a new arthrocentesis technique for the management of temporomandibular joint (TMJ) disc displacement without reduction.

Case Report
An 18-year-old female patient sought treatment due to joint pain and mouth opening limitation. The maximal interincisal distance was 30.28 mm. Magnetic resonance imaging confirmed the diagnosis of disc displacement without reduction with signs of joint effusion in the right TMJ. TMJ arthrocentesis was performed under selective sensory nerve block of the auriculotemporal, masseteric, and posterior deep temporal nerves. Two needles were inserted into the upper compartment of the TMJ. In the second needle, a transparent catheter was connected to a vacuum pump. Clinically, after the arthrocentesis, the maximal interincisal distance increased to 46.25 mm, and the patient reported no more pain. After six months, a magnetic resonance imaging was performed to observe the results, and there were no more signs of joint effusion.

Conclusion
TMJ arthrocentesis was an effective treatment for this patient with disc displacement without reduction. The aspect of this technique that is particularly relevant for clinical practice was the connection of a transparent catheter to a vacuum pump. This allowed the visualization of the solution fluidity and guided the flow of the solution used for joint washing, optimizing the irrigation. However, new studies are necessary to compare different protocols of irrigation with and without the associated use of a vacuum pump.

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The comparative effectiveness of double-puncture versus single-puncture type 2 arthrocentesis in long-term management of TMJ disc displacement without reduction

Eduardo Grossmann[1], Rodrigo Poluha[2]

[1]Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul
[2]Universidade Estadual de Maringá, Maringá, Paraná

Introduction
Temporomandibular joint (TMJ) disc displacement without reduction (DDWOR) is a prevalent condition causing significant pain and functional impairment. Arthrocentesis is a minimally invasive procedure frequently employed to manage this condition. This study aims to compare the clinical effectiveness of conventional double-puncture versus single-puncture type 2 arthrocentesis for the management of TMJ DDWOR after 3 years of follow-up.

Objective
To evaluate and compare the long-term outcomes of TMJ arthrocentesis using conventional double-puncture versus single-puncture type 2 techniques in patients with DDWOR.

Methods
A total of 26 patients diagnosed with DDWOR were randomly and blindly allocated into two treatment groups (n = 13 each). Group 1 underwent conventional double-puncture arthrocentesis, while Group 2 received single-puncture type 2 arthrocentesis. Data on gender, side of painful joint complaint, age (years), duration of joint pain (months), maximum interincisal distance (MID, mm), and pain intensity (self-reported using a 0–10 visual analog scale [VAS]) were collected. VAS scores and MID were measured before (baseline) and 3 years after (final) the arthrocentesis.

Results
Twenty-three patients completed the study (Group 1, n = 11; Group 2, n = 12). Both techniques resulted in significantly reduced VAS scores and increased MID ($P = .001$) after the 3 years of follow-up. However, there were no statistically significant differences between the two techniques ($P > 0.05$).

Conclusion
The findings indicate that both conventional double-puncture and single-puncture type 2 arthrocentesis are effective in reducing pain (as measured by VAS scores) and improving mouth opening (as measured by MID) in patients with TMJ DDWOR. Despite the lack of significant differences between the two techniques, both methods provided substantial clinical benefits over the 3-year follow-up period. This suggests that either technique can be successfully utilized for the long-term management of TMJ DDWOR, offering clinicians flexibility in treatment choices based on patient needs and clinical circumstances.

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Case report: Miller Fisher Syndrome associated with systemic lupus erythematosus activity

Caique Oliveira, Maiara Wiesentainer, Paulla Alflen, Karla Bisinotto, Douglas Corte

University Hospital of Western Paraná, Cascavel, Paraná, Brazil

Introduction

Miller Fisher Syndrome (MFS) is characterized by the classic triad of ophthalmoplegia, ataxia, and areflexia, representing a rare variant of Guillain-Barré Syndrome (GBS). Systemic lupus erythematosus (SLE) is a complex autoimmune disease that can affect multiple systems, including the nervous system. The coexistence of MFS and SLE is rare, posing significant diagnostic and therapeutical challenges.

Objective

To describe a case of MFS associated with SLE activity.

Case Report

A 33-year-old Caucasian woman diagnosed with SLE since 2019, with irregular treatment, was referred to University Hospital for investigation of ascending progressive muscle weakness without evidence of prior infections, occurring concurrently with SLE activity. Neurological examination revealed flaccid tetraparesis associated with right ophthalmoparesis, horizontal nystagmus, bilateral photoreactive mydriasis, trunk ataxia, and global hyporeflexia. Cerebrospinal fluid (CSF) analysis showed albuminocytological dissociation (protein 85 mg/dL and cells 6/mm^3). Cranial computed tomography and magnetic resonance imaging (brain and cervical spine) did not reveal acute lesions. She underwent a 5-day course of Intravenous Immunoglobulin (IVIG) and experienced complete recovery of neurological symptoms after two weeks.

Conclusion

This case highlights the rare coexistence of MFS during SLE activity, emphasizing complete remission of neurological symptoms following the early intervention with Intravenous Immunoglobulin (IVIG).

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Lifestyle factors in the evolution of cluster headache to fibromyalgia: a case report

Crislaine Freitas Petla Silva[1], Marcelo Rezende YoungBlood[1], Maria Ivone Oliveira Dantas[2], Suellen Abib[3], Narel Moita Carneiro Nogueira Falcão[4]

[1]Universidade Estadual de Ponta Grossa, Ponta Grossa, Parana
[2]Programa em Pós Graduação em Ciências Fisiológicas, Universidade Federal de Sergipe, Sao Cristovao, Sergipe, Brasil
[3]Universidade la Sapienza, Roma, Itália
[4]Universidade Estadual do Piauí, Teresina, Piauí

Introduction

Cluster headache is considered a male-dominated disorder, but female patients may display a more severe phenotype, with a greater extent diagnosed with the chronic cluster headache subtype and longer bouts compared with male participants.

The comorbidity of cluster headache, migraine and fibromyalgia does not seem to be infrequent and substantially increases the psychosocial burden and decreases overall quality of life of patients.

Objective

To promote reflections on possible lifestyle factors involved in the chronification of pain, specifically chronic headache and fibromyalgia.

Case Report

E.C.U.M, 58 years old, female, from Castro, Paraná, Brazil, former housekeeper, catholic, married. In April 2015, started severe, incapacitating headache located in the left supraorbital and temporal region, lasting four to five days, associated with conjunctival injection, ptosis, and ipsilateral eyelid edema. Comorbidities included systemic arterial hypertension and migraine without aura for 20 years, which had been controlled for the last 5 years. Former smoker since 35, denied alcohol consumption, sedentary, had non-restorative sleep, insomnia and regular diet. Complementary exams showed no significant alterations. Was diagnosed with probable cluster headache.

Patient remained under outpatient follow-up without pain remission despite several therapeutic attempts. Lifestyle modifications were advised but not adhered to. Continued non-restorative sleep and depressive/anxious symptoms. Progressed to chronic cluster headache and was diagnosed with fibromyalgia in September 2021, with Widespread Pain Index of 19 and Severity Symptoms Scale of 11.

The central sensitization process in these nociplastic pain syndromes explain part of evolving and generalization of pain, but lifestyle choices and systemic chronic inflammation (SCI) may offer additional explanations. SCI is a state of low-grade, persistent, non-infective inflammation and it has been associated with many chronic non-communicable diseases including chronic pain. Recent research has revealed that certain social, environmental and lifestyle factors can promote SCI.

Conclusion

Unhealthy lifestyle factors like smoking, alcohol overuse, sleep disturbances, psychological stress and high BMI seems to be more prevalent among patients with chronic pain. As these factors may contribute to SCI and central sensitization, it is key to inform patients early about the possible risks of their lifestyle choices.

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