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Abstracts

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Ataques de enxaqueca desencadeados pela ingestão de melancia (Citrullus lanatus): fonte de citrulina ativando a via L-arginina-óxido nítrico

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Introdução

A ingestão de alguns alimentos pode desencadear crises de cefaleia em pacientes com enxaqueca, incluindo a melancia. Esta fruta é a principal fonte de citrulina. A citrulina proveniente da dieta ativa a via da L-arginina-óxido nítrico, atuando na fisiopatologia da enxaqueca.

Métodos

O estudo foi um ensaio clínico, intervencionista, controlado e com comparação de grupos. A amostra foi não aleatória, composta por 38 voluntários com enxaqueca, segundo critérios da ICHD-3, e 38 sem cefaleia (controle). Ambos os grupos ingeriram uma porção de melancia para determinar o início das crises de dor de cabeça. Antes e após a ingestão de melancia, foram submetidos a coletas de sangue para determinação dos níveis séricos de nitrito. O resultado primário da pesquisa foi confirmar a ocorrência de ataques de dor de cabeça, enquanto o desfecho secundário foi determinar os níveis séricos de nitrito antes e depois da ingestão de melancia.

Resultados

A amostra estudada foi composta por 76 voluntários (54 mulheres e 22 homens) e caracterizou-se por uma idade média de 22,7±2,45 anos, variando entre 20 e 35 anos. Foram 38 voluntários com diagnóstico de enxaqueca sem aura e 38 controles, cuja média de idade foi, respectivamente, 22,4±1,5 e 22,9±3,1 anos (p=0,791). A cefaleia foi desencadeada pela ingestão de melancia após 124,3±20,5 min de ingestão em 23,7% (9/38) dos voluntários com enxaqueca e em nenhum dos controles (p=0,002). Houve aumento nos níveis séricos de nitrito, tanto nos voluntários com enxaqueca (23,4%) quanto no grupo controle (24,3%) após a ingestão de melancia. Essa diferença foi significativa (p<0,001).

Conclusões

A ingestão de melancia desencadeou crises de cefaleia em pacientes com enxaqueca e aumentou os níveis séricos de nitrito, atestando uma possível ativação da via L-arginina-óxido nítrico.

Palavras-chaves: Enxaqueca, Melancia, Citrulina, Arginina, Óxido nítrico

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Pior cefaléia neurocriptococose em paciente imunocompetente: relato de caso

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Introdução
A criptococose é uma infecção adquirida através dos pulmões e a forma de acometimento do sistema nervoso central é a neurocriptococose. O teste diagnóstico é a investigação de leveduras no líquido cefalorraquidiano com tinta da China. O tratamento utilizado é anfotericina B e fluconazol .
Objetivo
Relatar um caso de neurocriptococose em paciente imunocompetente.
Metodologia
Trata-se de um estudo descritivo, através da análise do prontuário.
Relato de Caso
Feminino, 23 anos, hígida, com cefaleia intensa há 15 dias, pulsátil e em aperto. O exame neurológico inicial transcorreu sem intercorrências. Foi realizada tomografia computadorizada de crânio sem alterações, foi coletado líquor que mostrou células nucleadas 204, presença de levedura, glicose 46, proteínas 28, cloreto 112, VDRL: não reagente e cultura para Cryptococcus gattii, tinta da China positiva. A ressonância magnética cerebral mostrou hipersinal nas imagens T2/FLAIR afetando os sulcos corticais, fissuras encefálicas, folhas cerebelares e na superfície pial do tronco encefálico em associação com leptomeníngea difusa. Redução volumétrica do sistema ventricular supratentorial, achados de leptomeningite de natureza fúngica, relacionada à criptococose. O tratamento foi iniciado com anfotericina B e fluconazol. Ela ainda apresentava cefaleia refratária, necessitando de punções seriadas de LCR para alívio da hipertensão intracraniana. Evoluiu com instabilidade e foi submetida a derivação ventriculoperitoneal direita. No pós-operatório apresentou hemiparesia esquerda. A TC de crânio mostrou hematoma e enfisema de tecidos moles extracranianos adjacentes; lesão cerebral frontoparietal direita e edema de parênquima adjacente. Evoluiu com instabilidade clínica e faleceu após 61 dias de internação.
Conclusão
Este caso apresentou padrão de hipotensão liquórica devido à compressão dos cornos frontais dos ventrículos laterais pelos granulomas. Várias punções repetidas foram realizadas e foi necessária derivação ventriculoperitoneal, mas o paciente apresentou complicações fatais.

Palavras-chave: Neurocriptococose, Leptomeningite, Cefaleia, Secundária

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"I don't just have a pain in my neck or just a migraine": Perceptions of migraine patients with neck pain

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Introduction

Neck pain is very prevalent and can present as a premonitory symptom or during a migraine attack, negatively influencing the natural history of the disease and the quality of life of these patients. Identifying the perceptions of these patients in relation to their pain and its treatment through qualitative research can help us understand the management of these patients' crises.

Objective

To identify perceptions about the cause of neck pain and the treatment approaches adopted by individuals with migraine and self-reported neck pain

Method

This is a descriptive and exploratory qualitative study in accordance with the COREQ and SRQR, and approved by the CEP (CAAE: 58915822.1.0000.5440) which evaluated 12 women between the ages of 18 and 55, diagnosed with migraine according to the 3rd edition of the International Classification of Headaches and with self-reported neck pain. A semi-structured interview was conducted, recorded and transcribed. Thematic analysis and inductive coding were used.

Results

The average age was 37, and the average number of crises per month was 7. After thematic analysis 2 themes emerged: 1) Beliefs about the cause of pain 2) Self-care strategies and perceptions about therapeutic conduct. In the first theme, the categories found were: a) Relationship between neck pain and headache: "I don't know if it's the neck that causes me to have a migraine or if it's a migraine that causes another pain in the neck, you know? I never know because the two are always very close together"; b) Posture "I blame it on my bad positioning, when I get into a bad position". The codes were: muscle tension, migraine, posture. In theme 2, the following categories were identified: a) Performing exercises for the cervical region "It's an aggression, if I'm going to feel that I'm straining a muscle that's related to my migraine, why am I going to do it? even... "Oh, it'll get better..." No, I don't want to", "What really helped me was to do the neck exercises and leave my sedentary lifestyle aside and get my body moving. That's what really helped me"; b) Manual therapy in the cervical region "I'm afraid of releasing it and it being a trigger point and that's it, you know? So... I keep quiet" "I usually do massage, I like massage"; c) Taking medication: "I take, I think, miosan... I think it takes effect in eight minutes, so I already feel it loosening up here, and it also makes me sleepy, right?"; "Apart from the neurologist, he gave me there, he clarified and gave me the coordinates and gave me the medication, but it was with the physiotherapist that my pain, like... dropped ninety percent." The codes were: Strength exercises, stretching, manual therapy, medication, physiotherapy.

Conclusion

Although neck pain can be one of the premonitory symptoms of migraine, the individuals did not always relate it to the headache crisis, but they also considered poor positioning during their daily lives to be a possible cause of neck pain. With regard to preferred therapeutic approaches, the results of the analysis were divergent in relation to the experiences of these patients. Therefore, we believe that health professionals should listen to and develop individualized treatments, respecting patients' preferences and experiences, as well as taking into account studies on the profiles of responders and non-responders to headache treatments.

Keywords: Migraine Disorders, Neck Pain, Qualitative Research, Primary Headache

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Translation and cross-cultural adaptation of the Migraine Disability Assessment (MIDAS) to Brazilian Portuguese

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Introduction

Migraine represents a significant challenge for global health, due to the disability associated with it. In addition to being a highly prevalent disorder, its impact on quality of life places migraine as the fifth leading cause of disability worldwide. The Migraine Disability Assessment (MIDAS) questionnaire was designed to evaluate the impact caused by migraine, classifying the different degrees of disability. Although widely adopted, a version translated with methodological rigor of MIDAS will ensure accuracy in assessing the impact of migraine among individuals in Brazil.

Objective

To carry out the cross-cultural adaptation of the MIDAS questionnaire for the Brazilian population. Methods

This is a methodological study (CEP UFPE: 4.891.495), conducted with women aged between 18 and 55 years, with diagnosis of migraine stablished based on the International Classification of Headache Disorders (ICHD) criteria. For the process of translation and cross-cultural validation, the criteria established by The Professional Society for Health Economics and Outcomes Research (ISPOR) were followed, which includes 10 steps: preparation, translation, reconciliation, back-translation, review of back-translation, harmonization, cognitive facilitation, cognitive facilitation review, review and final report.

Results

All phases observed on ISPOR were carried out, respecting the sociocultural values of the Brazilian population. In the preparation phase, three evaluators (> 10 years in the headache field expertise) were recruited to clarify any ambiguities and the concepts behind the items, to avoid misinterpretation. In the translation phase, three translators independently performed the questionnaire translation. Afterwards, the reconciliation was done by two researchers (DAO and HF) to resolve discrepancies between the translations and create a single version.

Four terms from the original questionnaire were altered. Posteriorly, back-translation and revision of the reconciled back-translation were performed by two translators. After this review, an expert committee was formed to ensure cross-cultural semantic equivalence. As a result of these phases, three other concepts needed to be adjusted, concluding the pre-test version. This version was applied to 30 women with migraine, mean age of 44±8 years, to assess the level of comprehensibility and cognition of the translated version (cognitive facilitation phase). Then, cognitive facilitation was reviewed with 82 women with migraine, mean age of 38±12, to incorporate the conclusions of the cognitive facilitation process. A researcher (DAO) analyzed the items and no modification was necessary in these phases. Lastly, the final version was checked for possible spelling, grammatical or other remaining errors and the final report was edited.

Conclusion

The MIDAS questionnaire was translated and transculturally adapted to Brazil.

Palavras-chave: Migraine Disorders, Surveys and Questionnaires, Translation, Data Reliability

Headache Medicine

Central Sensitization and Neck Disability in individuals with Temporomandibular Disorders

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Background

The association between Temporomandibular Disorders (TMD) and neck pain has already been demonstrated in several studies. There is moderate to strong evidence that individuals with TMD have worse self-reported neck disability. These two conditions, as they are chronic pain, are characterized by hypersensitivity induced by Central sensitization (CS).

Objective

The present study aimed to determine the correlation between the Central Sensitization Inventory (CSI) and Neck Disability Index (NDI) scores and if self-reported CS-related symptoms differ according to neck disability levels in individuals with TMD.

Methods

A cross-sectional study was conducted in a sample of 52 individuals diagnosed with TMD, aged between 18 and 40 years of both genders. Edentulous individuals who do not use a prosthesis, with a history of systemic diseases, neurological disorders, history of trauma, or surgery in the head or neck less than one year ago, and who were incapable of cooperating, were excluded. The diagnosis was made using Axis I of the Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) instrument, which divides TMD into groups according to established criteria. The neck disability was assessed by the NDI. It consists of 10 questions; each question can receive a score from 0 to 5 (0 = no pain or disability and 5 = total pain or disability), and the sum of the scores determines the levels of disability. More specifically, higher scores imply greater disability. Scoring interpretation is: 0-4 = no disability; 5-14 = mild disability; 15-24 = moderate disability; 25-34 = severe disability; over 34 = complete disability. The CS was evaluated using the CSI, a widely used self-administered questionnaire for assessing CS-related symptoms in clinical studies. Part A of the CSI comprises 25 CS-related items with total scores ranging from 0 to 100. The higher the scores, the more likely the involvement of mechanisms consistent with central sensitization. Part B of the CSI assesses whether seven CS-related diseases were previously diagnosed. Mean, standard deviation and frequency were analyzed to characterize the sample. The correlation between the CSI and NDI scores was verified using the Spearman correlation. The difference in self-reported symptoms of CS (CSI score) between the neck disability levels was calculated by One-way ANOVA. The Bonferroni test was conducted as a post-hoc test analysis.

Results

52 individuals of both sexes were evaluated, of which 45 (86%) were women. The mean age of the sample was 30.27 (±6.13) years. Most had a diagnosis of mixed TMD (painful disorder associated with joint disorder) (71.2%). Self-report of neck pain was present in 92.3% of these patients. Of these individuals, 7.7% had no neck disability, 67.3% had a mild disability, 17.3% had a moderate disability and, 7.7% had a severe disability. The mean CSI score was 46.12 (±1.63) e the mean for NDI score was 12.04 (±0.92). A strong and positive correlation was found between the CSI and NDI scores (ρ=0.71; p=0.00). One-way ANOVA showed that there is an effect of neck disability levels on the CSI score [F(3,48)=15.37; p=0.00]. The post-test showed that there is a difference in the average CSI score between all groups, except between the moderate and severe disability groups.

Conclusion

There was a strong and positive correlation between the CSI and NDI scores, where higher NDI scores are related to higher CSI scores in individuals with TMD. Self-reported symptoms related to CS differed according to neck disability levels. However, this difference is not found between the moderate and severe disability groups.

Keywords: Temporomandibular Joint Dysfunction Syndrome, Central Nervous System Sensitization, Neck Disability

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Epidemiological analysis of hospitalizations of individuals in university-age range due to headaches in the municipality of Barbalha, Ceara

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Introduction

According to the ICHD-3, primary headaches are defined by the lack of etiological evidence in clinical or laboratory tests, while secondary headaches are caused by an existing pathological process, having great diagnostic relevance. Migraines, the 3rd most prevalent disorder globally, are primary headaches that present with or without aura, a range of reversible unilateral neurological symptoms, usually of sensorial or visual aspect. The presence of cephalgic disorders such as migraines are prevalent in women, and their severity is shown to be influenced by stressing environmental factors.

Considering this correlation and the documented increase of chronic stress in students, the importance of epidemiological analysis of reports and hospitalizations due to headaches of young people in pre-university and undergraduate education age ranges arises.

Objectives

To analyze the epidemiological profile of patients aged 15 to 29 that were hospitalized due to migraines and cephalic algies in the municipality of Barbalha.

Methodology

The number of hospitalizations due to migraines and headaches in the population aged 15 to 29 years between 2013 and 2023 in the state of Ceará, and most specifically, in the town of Barbalha, was collected using the available data of the System's Information of Aggravation in the Notification of Diseases (SINAN) constructed by the Ministry of Health, available on the DATASUS platform. For statistical analysis, the Google Sheets algorithm was used.

Results

When analyzing the number of hospitalizations of people in the age range of 15 to 29 from 2013 to 2023 due to headache syndromes, 1661 cases were found. An unexpected predominance was reported in the CIR region of Juazeiro do Norte, that represented 909 (54.7%) cases of the sample, surpassing the number of cases in large urban centers, such as Fortaleza, that related only 328 cases.

Among Juazeiro do Norte's cases, 803 (88.3%) occurred in Barbalha. When carrying out a comparison of the annual samples of cases in Barbalha in each year, a reasonable growth rate is observed between 2013 and 2018, with an average increase in incidence of 7 cases per year, period of 44 to 79 cases, until a sudden increase in hospitalizations between 2018 and 2020, reaching an average of 103 cases per year, returning to previous levels in 2021. Among Barbalha's sample, 802 of the hospitalizations took place in the Saint Antonio Maternity Hospital, in which 751 (95.3%) cases were labeled as urgent and 52 (4.7%) as elective. In the profiling of the patients, 456 (56.7%) patients were female and 347(43.3%) were male; 227(28.9%) were in the 15 to 19 age group and 576 (71.7%) were in the 20-29 age group. Ethnically, 667 (83%) were declared as biracial, with 118 (14.6%)not being identified. There were 10 (1.24%) deaths homogeneously distributed in this period, 8 being of patients aged 20 to 29 years.

Conclusion

In summary, the disproportionate distribution of hospitalizations of young people for migraines and other types of cephalic pains in Barbalha in comparison to other areas of Ceara with a larger population volume suggests a greater accessibility of treatment and medical attention of this symptomatology for young people in Barabalha compared to other regions, as Barbalha's Saint Antonio Maternity Hospital provides 24- hour neurological care in its services that may not be available in other regions. The chronology shows probable influence of the COVID-19 epidemic on the increase of cases between 2018 and 2020. However, the elevated proportion of these hospitalizations labeled as urgencies raises concerns that this profile may be an indicator of the presence of pathologies with secondary headaches as symptoms in this group, requiring further epidemiological investigations. This paper was limited to information available in the DataSUS and the inability to compare the clinical patterns of the cases studied, that are safeguarded by the institution.

Keywords: Headaches, Students, Barbalha.

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An analysis on the impact of gender and race in hospitalizations due to headaches in the northeast region of Brazil

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Introduction

The identification of heterogeneity in a population and its influence on epidemiological patterns is integral for the establishment of health care strategies. Among the factors of influence in clinical headaches, gender is one of the most recognized by literature, with the occurrence of headaches in men:women being between 1:2 and 1:3, with greater effects of hormonal influence. Another factor that requires further investigation on Brazil's epidemiology on headaches is the impact of ethnicity. According to the IBGE census, 42.8% of brazilians self-identify as white, 45.3% as biracial and 10.6% as black. The northeast region has the biggest proportion of non-white population in the country, with 63.1% identifying as biracial, 11.4% self-declared as black, 25.5% as white, being an area propitious for analysis.

Objective

To analyze and compare the influence of gender and race on the rate of hospitalizations due to cephalic algies in the northeast of Brazil.

Methods

Using the available data of the System's Information of Aggravation in the Notification of Diseases (SINAN) constructed by the Ministry of Health, available on the DataSUS platform, it was made an analysis of hospitalizations due to migraines and cephalic algies on the northeast region between 2012 and 2023, separately considering age, gender and race to determine patterns of epidemiologic relevance. For statistical analysis, the Google Sheets algorithm was used.

Results

Among all samples collected, there were a total of 28.674 related hospitalizations due to migraines and cephalic algies in the northeast region between 2013 and 2023. Overall, there was a pattern of increase of occurrences between ages 7 to 49, following decrease in later years. There weren't enough native indigenous patients to allow analysis. Women composed the majority of registered hospitalizations, in a 77% higher rate than men, totalizing 18.154 cases (63.3% of all hospitalizations). Biracial women expressed the majority of the sample, with 11.985 (66% of all women) in every age group. There were also 4020 (22.1%) non identified, 1101 (6%) white women, 290 (1.5%) black women and 743(4%) asian women hospitalized. The age range of higher concentration of cases was in ages 20 to 29 with 3606 cases (19.8% of the total of women), from 30 to 39 with 3550 (19.5%) cases, and from 40 to 49 with 2929 (16.1%). The total number of men's hospitalizations in the same criteria was 10.251(36.7% of all hospitalizations). Men's most significant age ranges were ages 20 to 29, with 1478 (14.4%) cases; ages 30 to 39, with 1.699 (16.5%) cases; ages 40 to 49 with 1.613 (15.7%) cases. This distribution was heavily influenced by the hospitalizations of biracial men, who composed 7.128 (69.5%) of male patients. Of the remaining male patients, 553 were white (5.3%), 189 (1.8%) were black and 344 (3.3%) were asian, and 2.030 (19.8%) weren't identified.

Conclusion

The group most prevalent in the quantity of hospitalizations were biracial women, followed by biracial men. Overall, there were consistently more women than men compared to their respective ethnic group, but results show that despite women presenting a greater biological propensity to cephalgia according to literature, biracial men are more affected than white women and less than biracial women. While a higher percentage of the population in the northeast declares themselves as biracial rather than white or black, the diffe-ring rates of hospitalizations between biracial patients and other ethnicities is highly disproportionate to the population distribution, regardless of gender, indicating a deep influence of race. That can be connected to both genetic and socioeconomic factors, which highlights the importance of further studies to analyze their effects on the health of biracial and black people in Brazil. This study was limited by the data available on DataSUS and the uneven criteria of ethnic self-identification among the population.

Keywords: Headaches; Northeast; Ethnic disparities; Gender Disparities

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Acoustic voice analysis of women with migraine: preliminary results

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Introduction

The voice reflects physical and emotional factors, providing general health indicators. The study of voice characteristics in migraine is recent, and is based on the fact that migraine shares pathophysiological aspects with the vagus nerve, which also innervates the larynx. The systemic disautonomies related to migraine (nausea, vomiting, gastroparesis and diarrhea) are manifestations whose control involves the vagus, which communicates anatomically with the trigeminal nerve, involved in migraine nociception related to hyperexcitability of the trigeminal-cervical complex, at the nucleus of the solitary tract, and both innervate part of the dura mater. Furthermore, vagus nerve stimulation seems to be a promising acute treatment of migraine, modulating the transmission of pain and reducing headache intensity. Thus, we speculate that to identify laryngeal neuromuscular imbalance in migraineurs can be of assistance in the diagnosis management of these patients.

Objective

To acoustically evaluate the voice and identify the vocal profile of women with migraine.

Methods

This is a cross-sectional study (CEP UFPE: 6.038.427) conducted with 28 women (21 migraineurs in the Migraine Group - GM; and 7 women with < 5 episodes, throughout life, of headache with characteristics of primary headaches, according to ICHD-3, in the Control Group - GC). To evaluate the acoustic parameters, voice recordings were performed, where were analyzed: fundamental frequency (f0) (number of vibratory cycles per second performed by the vocal folds, measured in Hertz and with normality value for female voices between 150 Hz and 250 Hz); loudness (how loud or soft a voice can be perceived, measured in decibel, with normality value of 60 decibels); jitter (disturbance of f0 cycle by cycle, measured in percentage, with a normal limit value of up to 0.6%); shimmer (variability of sound wave amplitude of vocal folds vibration cycle by cycle, with normality value of up to 6.5%); glottal to noise excitation ratio (GNE) (it indicates whether the vocal signal is being originated by vibration of the vocal folds or by the turbulent air current originating in the vocal tract, measured in decibel, with normality value ≥ 0.5 decibel) and Phonatory Deviation Diagram (PDD) (a two-dimensional chart in which the horizontal axis relates the measurements of jitter, shimmer and their correlations, while the vertical axis presents the measurements of the GNE. Normal voices are represented in the lower left quadrant). The voice samples (count from 1 to 10 and sustained emission of the vowel /ɛ/) were collected in a quiet environment and in interictal period.

Results

The mean age of both groups was 25±4.7 years. Regarding the vocal parameters, f0 remained within normality values in 85.7% and 57.1% of the GM and GC volunteers, respectively. The loudness parameter presented altered values for 100% of GM volunteers and 71.4% of GC. There were jitter alterations in 48% of the volunteers of the GM and in 14.2% of the GC, and shimmer was altered in 52.3% of the GM and 16.6% of the GC. The GNE parameter was altered in 66.6% of GM, remaining within normal values in 100% of GC. The PDD was altered in 66.6% of the GM and 33.3% of the GC.

Conclusion

Women with migraine present fonatory instability and laryngeal neuromuscular imbalance. Considering this is a preliminary study, these results should be interpreted with caution.

Keywords: Migraine Disorders, Voice, Speech, Language and Hearing Sciences.

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Relationship between Central Sensitization and Clinical Features of Migraine

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Introduction

Central sensitization (CS) is highly prevalent in individuals with migraine. The clinical manifestation of CS can be presented through cutaneous allodynia (CA) and hyperalgesia. The presence and severity of CA are an indication of susceptibility to migraine chronification, since the frequency of CA increases as migraine attacks increase. Even though the presence of CS in migraine patients has been established, the relationship between sensitization and the clinical features of migraine is still being discussed. Objective: To evaluate the correlation between clinical migraine variables, such as frequency, intensity and duration, in years, of headache, with CS, measured by the Central Sensitization Inventory (CSI), Allodynia Symptom Checklist (ASC-12) and the Pressure Pain Threshold (PPT).

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, along with the ASC-12 and CSI questionnaires, and the PPT of the craniocervical muscles (temporal, trapezius, sternocleidomastoid, suboccipital, scalene, and levator scapula). The Shapiro-Wilk test was performed to verify data distribution of data and then Pearson's correlation was used to verify the association between CSI and the clinical features of migraine (headache frequency, intensity and duration). A posteriori, the correlation between the CSI and ASC-12 and between the CSI and the PPT of the craniocervical muscles was performed. For the interpretation of the magnitude of the correlation, a range of -1 to 1 was considered, considering <0.3 as a weak correlation, between 0.3 and 0.7 a moderate correlation and >0.7 a strong correlation. To identify the craniocervical muscles with lower and higher sensitivity, through the PPT, ANOVA was performed.

Results

The evaluated individuals had a mean age of 36.6 years (standard deviation [SD]= 9.7), with a mean body mass index of 26.1 (SD= 4.2). Mean illness duration was 17.1 (SD=10.1), with mean frequency of 13.8 (SD=8.8) headache days per month, with mean intensity of 7.9 (SD= 1.8). The mean score of the CSI questionnaire was 50 points (SD=15.8) and the ASC-12 was 6.4 (SD=3.8). A weak significant correlation was found between migraine intensity and CSI (r= 0.22; p<0.05), between migraine frequency and CSI (r= 0.27; p<0.001) and between the frequency and the ASC-12 (r= 0.24; p<0.001). The illness duration correlates moderately with ASC-12 and significant correlations were observed between the frequency of migraine and the PPT of the trapezius (r= -0.32; p<0.05), sternocleidomastoid (r= -0.36; p<0.05) and suboccipital (r= -0.33; p<0.05) muscles. The correlation between the ASC-12 and the CSI was moderate (r= 0.35; p<0.001). No statistically significant correlation was observed between craniocervical muscle PPT and questionnaire scores (CSI and ASC-12). According to the ANOVA from the PPT, the most sensitive muscle was scalene and the most less sensitive muscle was the trapezius.

Conclusion

The CSI correlates with the frequency and intensity of migraine, the PPT and the ASC-12 correlate with the frequency of migraine and illness duration. Therefore, the CSI and PPT could be used to identify migraine individuals who are more sensitive to pain and more likely to develop central sensitization. However, we cannot suggest that these tools be used alone to assess central sensitization in these patients.

Keywords: Migraine Disorders, Central Sensitization, Cutaneous Allodynia

Headache Medicine

Primary Headaches In Transgender Men: A Pilot Study

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Introduction

The prevalence of headaches in transgender individuals using crossed hormone replacement therapy is not well established in the literature.

Objectives

To compare the frequency, characteristics, and impact of headaches among transgender men on gender-affirming hormone therapy and cisgender men.

Methods

This was a case-control study carried out at the Hospital das Clínicas of the Federal University of Pernambuco (HC-UFPE). Cases: 25 transgender men, aged 18 years or older and undergoing hormone replacement therapy for reassurance. Controls: 25 age-matched cisgender men with the case group. Exclusion criteria were: individuals with a history of anabolic hormone use, transgender men during pregnancy, and cisgender men diagnosed with hypogonadism. Participants were interviewed by resident physicians and trained medical students. A semi-structured questionnaire, the Headache Impact Test (HIT-6), and the Hospital Anxiety and Depression Scale were used. The research project was approved by the Research Ethics Committee of HC-UFPE (CAAE: 58822022.2.0000.8807 / number: 5.509.844).

Results

We included 50 individuals, 25 of whom were transgender men. The median age of transgender men was 30 years (25; 36) and 32 years (26; 40) for cisgender men (Mann-Whitney; p=0.49). There was no difference in the prevalence of headache in the last 12 months, the prevalence of migraine, or the frequency of headache between the two groups. Transgender men had more severe (Mann-Whitney; p=0.005) and more impactful headaches (chi-square; p=0.002), lower prevalence of tension-type headache (chi-square; p=0.025), and higher prevalence of anxiety (chi-square; p=0.021) and depression (chi-square; p<0.001) when compared to cisgender men.

Conclusion

Transgender men have more severe, high-impact headaches and less tension-type headache than cisgender men.

Keywords: Transgender Persons, Headache, Tension-Type Headache, Migraine Disorders

Headache Medicine

Persistent headache and chronic daily headache after COVID-19: a prospective cohort study

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Introduction

Headache may persist beyond the acute phase of COVID-19. Little is known about the frequency and impact of this persistent headache and about the incidence of chronic daily headache (CDH).

Objective

To assess the incidence, risk factors, characteristics and impact of CDH in patients with COVID-19.

Method

This was a prospective cohort study. In the first stage, 288 patients were interviewed by telephone after the acute phase of COVID-19. Subsequently, 199 patients who presented headache were reinterviewed at least one year after COVID-19. Headaches that persisted beyond the acute phase of COVID-19 and presented frequency greater than or equal to every 45 days over the first three months were considered to be CDH.

Results

123 patients were included: 56% were women; the median age was 50 years (range: 41-58). The median length of time between the acute phase of COVID-19 and the interview was 804 days (range: 739-892). The headache persisted beyond the acute phase of COVID-19 in 52%, and 20.3% had CDH (95% CI: 13.6-28.2). Individuals who previously had headaches and who had headaches of greater intensity during the acute phase were at higher risk of developing CDH. The group with CDH included more women, greater impact of headache, more persistence of headache beyond the 120th day of COVID-19 and less throbbing headache than did the other individuals whose headache persisted.

Conclusion

Patients who had COVID-19 had high incidence of CDH, and this had a negative impact on these individuals' lives. Previous headache and greater intensity of headache were associated with higher risk of CDH.

Keywords: COVID-19, Post-Acute COVID-19 Syndrome, Headache, Headache Disorders, Secondary, New Daily Persistent Headache.

Headache Medicine

Analysis of interexaminer agreement in migraine screening

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Introduction

Migraine diagnosis is based on clinical evaluation, so the International Headache Society proposes diagnostic criteria (International Classification of Headache Disorders - IHCD-3) to standardize the evaluation minimizing underreporting, subjectivity in evaluation and create a unique language among experts. In recent years, the multiprofessional approach has been highlighted in headache disorders patients care and physiotherapy has been recognized as an effective non-pharmacological strategy in the control and prevention of headache episodes. Therefore, it is important for physiotherapists to improve their knowledge about the diagnostic criteria for headaches in order to better manage these patients.

Objective

To analyze the interexaminer agreement in the application of the ICDH-3 criteria in migraine screening performed by physiotherapists.

Methods

This is a cross-sectional study submitted to the Ethics Committee of the Center for Health Sciences, Federal University of Pernambuco - UFPE, under approval number 4.891.495. The research was carried out at the Laboratory of Learning and Motor Control (LACOM), Department of Physiotherapy - UFPE, from July 2021 to July 2022. The study included 30 women with mean age of 32±3 years and a diagnosis of migraine provided by a neurologist according to the ICHD-3 criteria. Two physiotherapists, blinded to the medical diagnosis, and with 8 years of experience in the headache field, classified the patients' headache according to the ICHD-3 criteria. An external judge assessed the results for concordance analysis. Cohen's kappa coefficient was used for interexaminer agreement analysis. The strength of the intervals' agreement was classified as poor (< 0.20); reasonable (0.21 to 0.40); moderate (0.41 to 0.60); good (0.61 to 0.80); and very good (0.81 to 1.00).

Results

Interexaminer agreement was good between physician and physiotherapist 1 (k = 0.667) and between physician and physiotherapist 2 (k = 0.780).

Conclusion

The diagnostic criteria for headache recommended by the International Headache Society, according to ICHD-3, showed good interexaminer agreement when applied by physiotherapists with at least eight years of experience in the management of headache patients. These findings suggest that it is possible to screen migraine in order to better understand its clinical characteristics (frequency, intensity and duration, laterality and location of the episodes), however, caution is needed when diagnosing these patients due to the diversity of subtypes of this clinical condition.

Keywords: Migraine Disorders, Data Accuracy, Diagnosis.

Headache Medicine

Headache in patients with Systemic Lupus Erythematosus: a case-control study

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Introduction

Headache is a symptom frequently reported by patients with systemic lupus erythematosus (SLE). However, the effect of SLE is still not well established. Objectives: To compare the prevalence and characteristics of headaches among patients with SLE and individuals without the disease and to assess whether there was a relationship between headaches and SLE activity.

Methods

This was a case-control study. Those included were examined by a neurologist and interviewed by a neurologist. Cases: patients with SLE. Controls: individuals without SLE matched for sex and age with cases. A semi-structured form, the Headache Impact Test (HIT-6), and the Hospital Anxiety and Depression Scale were used. Disease activity was measured by a rheumatologist using the Physician Global Assessment and quantified using the modified Systemic Lupus Erythematosus Disease Activity Index (modified SLEDAI-2K).

Results

228 individuals were included, 114 in each group. The SLE group had more moderate/severe headaches than controls (OR: 3.21, 95%CI 1.41-7.29, p = 0.005; conditional logistic regression). Comparing patients with active SLE with those without disease activity, there was no difference in headache prevalence, type, frequency, intensity, or impact. The magnitude of SLE activity (modified SLEDAI-2K) had no statistically significant association with the impact or monthly frequency of headaches.

Conclusions

Headache is a frequent symptom of SLE, but the prevalence is similar to that of the population without the disease. Patients with SLE have a more severe headache than those without SLE, but there is no association between headache and SLE activity.

Keywords: Systemic Lupus Erythematosus, Headache, Pain

Headache Medicine

Acute Anemia and Intracranial Hypertension - A case report

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Introduction

Acute anemia is commonly described as a risk factor for idiopathic intracranial hypertension (IIH). However, the relationship between anemia and IIH remains controversial. Larger controlled studies have failed to reveal an association between anemia and IIH, despite numerous case reports supporting their causal relationship. The most convincing evidence for a direct relationship between IIH and anemia comes from the observation that there is an improvement in symptoms and neurological signs only when addressing the underlying anemia. For this reason and others, such as the fact that many cases occur in non-obese individuals and that many patients with anemia and IIH do not respond to intracranial pressure reduction therapy, there is currently a question as to whether it is secondary intracranial hypertension or truly idiopathic.

Objective

To describe the case of a patient who developed intracranial hypertension in the context of acute anemia.

Case report

A 25-year-old woman, eutrophic, with no known comorbidities, presented with a new, bifrontal, pulsatile, progressive headache for 14 days, associated with tinnitus on the left, also pulsatile, photophobia, phonophobia, intermittent episodes of paresis and paresthesia in the upper limbs and visual clouding, both lasting up to 5 minutes, without nausea, vomiting or visual loss. During hospitalization, bilateral papilla edema was found and eyer ultrasound showed papilledema, grade III on the right and grade II on the left, computerized visual field showed right eye with nonspecific diffuse scotomas (MD -6.59; PSD 5.28) and left eye with inferior nasal scotomas (MD -3.29; PSD 5.21), brain magnetic resonance and magnetic resonance angiography were normal, cerebrospinal fluid without alterations, with an opening pressure of 15 cmH2O and was detected a microcytic and hypochromic anemia of iron deficiency etiology due to hypermetrorrhagia secondary to myomatosis, with a hemoglobin of 3.6 g/dL at the time. Blood transfusion was performed and abnormal uterine bleeding was treated with desogestrel, ferrous sulfate replacement and uterine myomatosis resection, with improvement of all symptoms. The patient was evaluated 8 months after hospitalization, without recurrence of headache, visual alterations and tinnitus and objective improvement was detected, with visual acuity 20/20 in both eyes, perimetry by confrontation without alterations and eye fundus with intact right optic disc, without regular blurring and contours and intact left optic disc, with discreet blurring in the upper nasal region.

Conclusion

In the case described, there was complete improvement of symptoms after addressing the anemia in a patient who did not have obesity and other well-described risk factors for IIH. Therefore, the possibility of acute anemia should always be considered in all patients with IIH, as treatment can prevent serious permanent complications of visual loss.

Keywords: Intracranial, Hypertension, Acute, Anemia, Papilledema

Headache Medicine

Impact of somatosensory tinnitus and painful temporomandibular disorder in patients with migraine

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Introduction

Tinnitus is defined as a perception of sound in the absence of an external sound stimulus. In somatosensory tinnitus (SST), there may be changes in the perception of frequency or intensity of sound due to different stimuli to the somatosensory system, such as through increased muscle tension in the masticatory or cervical muscles. Individuals with Temporomandibular Disorders (TMD) have a high prevalence of tinnitus, reaching up to 80%, and are approximately twice as likely to have some type of headache, such as migraine. When muscle pain is involved, the presence of migraine seems to be a factor that increases the risk of tinnitus. Chronic pain presented by individuals with TMD, fibromyalgia, neuropathic pain, migraine and other pain syndromes are related to the central sensitization process. Central Sensitization Syndrome (CSS) represents an abnormality of the nociceptive system, where neuronal hyperexcitability generates poor processing and deficit in pain modulation, which contributes to its expansion and chronicity. Painful TMDs, tinnitus and migraine are conditions that share many similarities with respect to associated comorbidities and pathophysiology, indicating that they are disorders where there is CSS involvement.

Objective

The present study sought to verify the association between SST and painful TMD in migraine patients.

Results

The mean age among the individuals in this study was 40.9 years (12.7). Among patients with migraine, most were female (n=24; 88.9%) and there was no statistically significant difference in age between groups. Of the patients with migraine, about 66.7% (n=18) had SST and complaints of dizziness or vertigo, and this association was statistically significant (p=0.032; p=0.008 respectively), with patients with SST having 2 .86 times more likely to have migraine (95% CI: 1.08-7.58). Ear fullness was present in 40.7% of patients with migraine (p=0.014), with a 3.7 times greater chance of this symptom being a complaint of these patients (95% CI: 1.26-10.8). The degree of discomfort due to hyperacusis, measured using a visual analogue scale, had a median of 4 (0-8; p=0.025) among patients with migraine, despite this symptom not being statistically associated in these patients (p=0.352). The presence of SST, painful TMD and higher scores on the Central Sensitization Inventory were positively correlated with the presence of migraine (r=0.243; p=0.032; r=0.295; p=0.009; r=0.378; p<0.001 respectively).

Conclusion

The presence of somatosensory tinnitus and painful TMD can be considered risk factors for migraine, representing comorbidities within CSS. Knowing part of the complex relationships between these conditions helps in the selection of specific treatment modalities, aiming at personalized strategies that seek to reduce tinnitus, pain and suffering.

Keywords: Migraine Disorders, Tinnitus, Temporomandibular Joint Disorders, Central Nervous System Sensitization

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Headache Medicine

Headache attributed to foreign body in pericranium as a late complication of cranioplasty: a case report

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Abstract

Cranioplasty is a surgical procedure for the reconstruction of the cranial vault that has become common in recent decades due to the need for decompression of the skull after traumatic brain injury and management of severe stroke. Cranial deformity can lead to many psychological consequences. Repairment brings several benefits for the patient, mainly aesthetic, but also the return of the cerebrospinal fluid flow, intracranial pressure, and brain blood flow. Headache does not appear as a relevant complication after cranioplasty.

Objective

The purpose of this study is to present a patient with a late-onset headache due to displacement of a cranioplasty plate.

Case Report

A 21-year-old female patient presented persistent left-sided headache near a prior craniotomy site; notably, no radiating pain was reported along the surgical scar. Initially mild, the pain progressed to moderate to severe within weeks. Tactile stimuli, like hair brushing or water exposure, significantly exacerbated discomfort. Phenomenologically, the pain lacks distinct characterization, though neuralgiform attributes were explicitly denied. Limited relief from analgesics led to considerable irritability due to the relentless pain.

At age 10, the patient experienced recurring episodes marked by malaise, visual disturbances, and motor deficits, followed by motor aphasia and right hemiplegia. Imaging confirmed ischemic stroke, attributing it to left middle cerebral artery infarction. The progressive decline prompted decompressive craniotomy.

Subsequent persistent intense headaches led to cranioplasty at age 12, involving iliac crest bone graft and titanium plates. While cranial reconstruction improved headaches, carbamazepine and sertraline were prescribed for potential seizures and mood disturbances. Despite moderate motor aphasia, cognitive recovery allowed academic performance.

At 13, the patient sought neurological consultation for new, frequent, left-sided, pulsatile headaches without aura. The craniotomy scar exhibited good healing without pain. Moderate analgesic use and well-controlled mood were noted. CT scan revealed adapted left frontotemporoparietal cranioplasty, gliosis in opercular, insular, and ganglionic areas, and left corticospinal tract degeneration. Topiramate managed headaches effectively.

Loss of follow-up occurred until the patient returned due to continuous headaches. In the context of a young patient exhibiting enduring consequences stemming from a prior stroke, alongside effectively managed migraine episodes, albeit accompanied by persistent and precisely localized head pain, coupled with notable shifts in sensory responsiveness, discerning primary versus secondary headache was challenging due to atypical attributes.

A CT scan revealed cranioplasty plate displacement, overlapping the posterior plate over the anterior one, necessitating replacement and fixation surgery. Immediately after the operation, pain recovery was complete, without soreness in the cranioplasty scar site. Stability persisted, with no headaches or cranial pain for 6 months.

Conclusion

The case discussed in this article could be classified as “headache or facial pain attributed to other disorders of the skull, neck, eyes, ears, sinuses, teeth, mouth, or other facial or cervical structures." Still, the region that caused pain in the patient, the pericranium, is not cited in this classification. Therefore, as far as we know, this case doesn’t apply to any available category in the literature but could be classified as a headache attributed to a foreign body in pericranium.

Palavras-chave: Headache, Craniotomy, Secondary Headache Disorders, Tension-Type Headache

Headache Medicine

Femininity Contribution To Pain Experience: An Exploratory Cross-sectional Study Among Undergraduates

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Introduction

Pain is multidimensional in its nature, so its perception includes sensory, emotional, social, and symbolic aspects. Population-based studies and literature reviews have shown that pain is more prevalent in females. The terms "sex" and "gender" refer to two distinct but related factors. Sex encompasses a set of biological attributes, such as chromosomes, genetic expression, and anatomical aspects, and gender is related to a complex trait, being dependent on psychological, social, cultural, and political factors and defined as a sociocultural construction of roles, norms, behaviors, identities, and authority relations. Despite this distinction and relevance, in the analysis of sociodemographic data, most studies include only the "sex" variable. When investigating gender roles and their relationship to pressure pain, a significant correlation between masculinity-femininity and pain threshold was observed for men but not for female participants. In clinical pain, higher femininity seems to be associated with a greater number of areas with pain and a greater use of health services.

Objectives

This study aimed to investigate: (1) the prevalence of painful complaints in female undergraduate students, and (2) the association between femininity and painful complaints.

Methods

This is a cross-sectional study in two public dentistry universities in Recife, Pernambuco. The sample comprised 387 female undergraduate students between 21 and 24 years old. Data collected included socio- demographic characteristics, number of painful sites (McGill Pain questionnaire), pain intensity (VAS), and need to communicate pain. Femininity was assessed using the Traditional Femininity and Masculinity (TMF- s) scale, recently developed to identify central facets of self-attributed masculinity-femininity. Pearson's chi- square test and binary logistic regression were performed to analyze differences regarding the degree of femininity and pain characteristics.

Results

The results showed that the regions with the highest frequency of pain were head (56%), spine (50%), shoulder (43%) and face (35%). Participants with greater femininity score reported more painful body regions. Pain in more than three body sites and need to communicate pain were significantly associated with greater femininity. Although not statistically significant, the "very feminine" group had the higher scores for pain intensity (p = 0.136).

Conclusion

In conclusion, compared to participants with less femininity, higher feminine participants had higher frequencies of self-reported painful body regions. Back pain, pain in more than three sites and need to communicate pain were significantly associated with higher femininity. Cultural and psychosocial aspects related to pain experience and communication should be considered in the analysis of gender differences within a biological same-sex group.

Keywords: Femininity, Musculoskeletal Pain, Pain communication, Gender

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Headache Medicine

Primary auriculotemporal neuralgia. Case report

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Introduction

Neuropathic pain results from a primary nervous system injury or disorder, triggered by local trauma or systemic diseases and affecting peripheral or central nervous structures. Considering the symptom, orofacial neuropathic pain may be classified in two categories: episodic or continuous. Episodic neuropathic pain is characterized by pain paroxysms described as electric shock or twinge, similar to what happens with trigeminal neuralgia (TN). Pain paroxysms are in general followed by remission periods, known as refractory periods. Pain may be classified in primary (classic) or secondary (symptomatic) and the difference between them is important for adequate diagnosis and management. While the vast majority of patients have brief, severe and paroxysmal pain, continuous pain may also be present. Most common neuralgias are trigeminal, post-herpetic, glossopharyngeal and occipital. Less frequent are supraorbital and intermediate nerve neuralgia. These disorders may underlie infectious and/or inflammatory neurologic diseases, in addition to other primary headaches. The auriculotemporal nerve (n.AT) is a sensory branch originating from mandibular nerve posterior trunk. Due to its pathway, there is major risk for compression and irritation. Its nervous roots form a short trunk, which supplies several branches and innervates temporomandibular joint (TMJ), temporal region, pinna, and external acoustic meatus. It conducts sympathetic fibers to the scalp and parasympathetic fibers to the parotid gland. Anatomic relationship between n.AT and masticatory muscles, TMJ and surrounding vessels in the infra temporal fossa region, creates favorable conditions for compressive syndromes. Auriculotemporal neuralgia (NAT) is an uncommon condition. In a tertiary center, reported frequency was just 0.4%. It seems to be more prevalent in middle-aged females. Symptoms are excruciating pain attacks, especially in the temporal region. Pain in TMJ, parotid and ear, with irradiation to temporal region is also described and may be relieved by auriculotemporal nerve anesthetic block. Although not having its own classification, the name epicranial neuralgias has been suggested, including neuralgias of other peripheral branches, such as supraorbital, supratrochlear, nasal, greater and lesser occipital nerves.

Objective

This study aimed at reporting a case of NAT where underlying secondary factors were not found, and which has favorably responded to low dose of carbamazepine.

CaseReport

Male patient, 72 years old, who came for assistance complaining of severe left temporal region pain, described as shock. First crisis had been 5 years ago with spontaneous remission. Two months ago pain reappeared, with very short duration, with several episodes varying from 1 to 2 minutes. These episodes were repeated three to four times a day and did not wake up patient at night. At physical evaluation, no pain trigger-zone was found. Patient had controlled diabetes and referred having been submitted to pros-tatectomy due to cancer. Brain magnetic resonance was normal. Panoramic X-rays of jaws and computerized tomography of tempo-romandibular joints had not shown significant changes. Diagnostic hypothesis was NAT. Carbamazepine (200mg) was prescribed during the first two days, continuing with 400 mg for the following 15 days. In the first week using the drug, patient was revaluated and reported lower frequency of shocks (2 to 3 per day), which he defined as "pinching". In the following week, patient referred symptoms remission. Maintenance dose of 200mg was then kept and 4 months later there has been total symptoms control.

Conclusion

This case shows that NAT has clinical presentation similar to that of other neuralgias. The diagnosis of this uncommon condition is primarily obtained by evaluating pain characteristics and by excluding possible secondary causes.

Keywords Auriculotemporal Nerve, Auriculotemporal Neuralgia, Neuropathic Pain

Headache Medicine

Covid-19: Neurological Complications

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Introduction

With the global pandemic established from the outbreak of the coronavirus (SARS-COV- 2), at the end of 2019, the world found itself in crisis – epidemic, economic, political, especially in the year 2020. The disease, which initially appeared to present exclusively pulmonary symptoms, when observing the evolution of the cases, numerous extrapulmonary manifestations were noticed, including neurological involvement.

Objectives

This study aimed to describe the manifestations presented by patients who presented the Covid-19 infection, with special attention to those of a neurological nature, correlating them with the most recent studies.

Methodology

The study was observational descriptive epidemiological cross-sectional with the application of an online questionnaire for people who had COVID-19. People from medical services in the region of Catanduva, located in the interior of the state of São Paulo, as well as other regions, who answered a semi-structured questionnaire, were included.

Results

The sample consisted of 345 people with a mean age of 36.2 years, 69.9% women, half and half married and single. There was 30.4% with ARh+ blood, and most had taken at least 1 vaccine dose. The most common symptoms of covid-19 were: Tiredness/fatigue (9.3%), Headache (9.1%), Body pain (8.5%), Cough (7.7), Change in taste and/or or smell (7.4%). The most common neurological symptoms in the acute phase and days after the illness were: Headache and and alteration of taste/smell. In the longer phase, the most common symptoms were forgetfulness, change in taste/smell, headache, stroke, and depression.

Conclusion

This epidemiological study demonstrated that among people who had Covid-19 at least 1x, the most common neurological complications were taste/smell alteration and headaches. In the later phase, memory impairments are the most common complaints, taste/smell alterations, headache are still in evidence and then, after that, Vascular Accident and depression.

Keywords: Coronavirus Infections, Headaches, Neurology, Stroke, Complications

Headache Medicine

Recurrent Painful Ophthalmoplegic Neuropathy: case series from a tertiary hospital and a systematic review

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Introduction

Recurrent Painful Ophthalmoplegic Neuropathy (RPON) is a rare condition, commonly observed in the pediatric population, in which individuals experience recurrent episodes of headache and ophthalmoplegia. The pathophysiology is not yet well understood, and its diagnosis relies on the patient's clinical history and the exclusion of other causes. A comprehensive evaluation is necessary to rule out underlying conditions. The treatment of RPON aims to address the acute condition and prevent the recurrence of attacks.

Objectives

To explore the clinical manifestations of RPON, to emphasize the importance of diagnosing, distinguishing it from other conditions, and to discuss treatment and management options.

Case Reports

CASE 1: A 47-year-old hypertensive female patient presents with a history of headaches since the age of 20, associated with bilateral ocular movement paresis during or after episodes of pain, with complete improvement within days or weeks. During outpatient follow-up, an extensive investigation was conducted with complementary examinations to exclude underlying conditions justifying the symptoms. Serial magnetic resonance imaging (MRI) scans revealed no alterations, except for the last MRI in 2022, which identified hyperintensity in the T2 STIR sequence in the bilateral lateral rectus muscles. Other exams showed no relevant changes. She began experiencing permanent sequelae from the age of 35, with no complete recovery of abduction paresis in both eyes between headache episodes. For the treatment of RPON episodes, oral corticosteroid therapy with prednisone for 7 days, in combination with symptomatic medication, is administered. Various prophylactic medications were initiated in this context, with no adequate response. Currently, the patient is using venlafaxine with adequate pain control. CASE 2: A 19-year-old healthy female began experiencing episodes of headache associated with ophthalmoplegia at the age of 8, with no family history of neurological diseases. The headache exhibited characteristics of migraine, accompanied by ipsilateral ophthalmoplegia. The patient's past medical history and neurological examination were unremarkable. A diagnostic workup showed no abnormalities. Currently, the patient experiences rare RPON episodes (1 episode per year) and occasional migraine without aura, without ophthalmoplegia. Good control of RPON episodes is achieved with oral prednisone for 7 days, non-steroidal anti-inflammatory drugs (NSAIDs), and sumatriptan. Prophylaxis for migraine without aura is administered with amitriptyline, yielding a favorable response with no observed side effects. CASE 3: A 10-year-old male, with an uneventful personal medical history but with refractive error requiring corrective lenses, began experiencing headache episodes at the age of 2. However, it was only at 6 years old that he was hospitalized due to a presentation of headache, ptosis, mydriasis, and right esotropia. At that time, an extensive diagnostic workup, including laboratory review, MRI, and enhanced MRI, revealed no noteworthy findings. The patient had rare annual episodes of headache associated with ipsilateral ophthalmoplegia. Prophylactic treatment for headaches with flunarizine and abortive treatment with dipyrone were initiated. There is no history of corticosteroid use in the acute phase of RPON, and the events were self-limited without progression to sequelae.

Conclusion

RPON is a rare and highly debilitating condition. Oral steroids may offer potential benefits in treating acute exacerbations. Reports of cases that are resistant to corticosteroids propose other medication alternatives for the acute condition, although their efficacy remains unproven. Case reports exploring headache prevention in RPON patients include first-line prophylactic agents for episodic migraine. Imaging has proven to be an excellent tool in aiding the diagnosis of RPON. Ultimately, RPON remains a clinical challenge.

Palavras-chave: Recurrent Painful Ophthalmoplegic Neuropathy;Ophthalmoplegic Migraine; Headache; RPON; Cranial Neuropathy.

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Headache Medicine

Neurobiology of the relationship between sleep disorders and headaches: an integrative review

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Introduction

Headaches are among the most prevalent and disabling diseases worldwide. Sleep can alleviate, trigger, or modify the pain syndrome. Some headache types are directly related to sleep, such as hypnic headache, while others are indirectly related through neurobiological convergences, such as cluster headache and migraine, or even sleep deprivation (migraine and TTH) or excessive sleep as a trigger (cluster headache).

Objective

In the present study, the relationship between sleep disturbances and primary headaches is highlighted based on neurobiology.

Methods

This is an integrative review paper. A search was performed on PubMed and Google Scholar platforms using the keywords "headache and sleep" and "headache and sleep disorders".

Results

Sleep and headache share several nervous system structures and mechanisms that play a central role in their regulation. The cortex plays a role in sensory processing of pain and its modulation, both in primary sensitivity (nociceptive afferents of the trigeminocervical complex-CTC) and in cognitive and affective processing of pain and modulation of direct and indirect descending pathways for CTC. Studies report alterations in cortical excitability and pain modulation in patients with headache and patients with sleep disorders, such that a reduction in sleep quality promotes a reduction in pain threshold. The hypothalamus, the major structure linking headache and sleep, plays a fundamental role in the pathophysiology of headache, including migraine and cluster headache, and in the regulation of the circadian cycle. In migraine, the hypothalamus has a direct action, through connections with the CTC and an indirect action, through connections with the periaqueductal gray matter (PAG) and with the locus coeruleus (LC); hyperactivation of the hypothalamus is present during the pain crisis as well as during the premonitory phase. Individuals suffering from migraine also exhibit alterations in orexin levels, possibly related to the shortening of REM sleep duration in these individuals, which is related to hyperalgesia during the crisis. In addition, the hypothalamic dopaminergic nucleus A11 participates in CTC modulation and has an inhibitory effect on sympathetic neurons and on the dorsal horn of the medulla. Its dysfunction has been associated with migraine prodrome and restless legs syndrome. In the brainstem, the main related regions are the dorsal raphe nucleus (DDR), LC and PAG, which promote wakefulness and REM-off and modulate nociception. The LC, the main source of cerebral noradrenaline, receives nociceptive afferents from the CTC and hypothalamic nuclei; its activation promotes intracerebral vasoconstriction and extracerebral vasodilation. The NDR, the main cerebral serotonergic nucleus, has an antinociceptive function in the suppression pathway of spinothalamic nociception and promotes wakefulness that follows circadian rhythm. In migraine, there are alterations in serotonin metabolism with a decrease in levels during the interictal phase and an increase during crises12. PAG acts on medullary and trigeminal enkephalinergic internuncial neurons and has an analgesic effect. In the ventrolateral region (vlPAG), its stimulation inhibits trigeminal afferents, and like LC and the NDR, it receives orexinergic afferents.

Conclusion

Sleep disorders and headaches are two closely related conditions. They share common dysfunctions in anatomical structures and neurobiological pathways, so one exacerbates the other when accompanied. Therefore, point out the importance of investigating the presence of alterations in sleep behavior in headache patients to achieve better therapeutic assertiveness.

Keywords: Headache; Sleep disorders; Physiopathology.

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Headache Medicine

The importance of preventive treatment in migraine

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Introduction

In migraine, the preventive approach seeks to reduce the frequency, duration and intensity of attacks by 50%, through the use of medication or changes in lifestyle habits. The Center for the Study of Headaches and Cranial Algias (NECEFAC) was present at the event held at the Federal University of Paraná (UFPR) - Toledo Campus, together with the Toledo Medical Association (AMT) and the Academic Leagues of Neurology, Pediatrics, Gynecology and Obstetrics, with the proposal to establish the drug topiramate as prophylaxis for migraine in the Unified Health System (SUS), as well as to discuss headaches among medical specialties at the 2nd National Headache Symposium.

Objectives

Encourage the democratization of knowledge and broaden the dissemination and development of solid proposals through scientific events; highlight the socio-economic impacts of migraine and emphasize the urgency of establishing headaches and cranial algias in the context of chronic non-communicable diseases.

Metodology

A scientific event brought together doctors from different specialties and public managers to discuss headaches and propose the inclusion of the drug topiramate for the treatment of migraines. Research in the literature was also used to corroborate this use, as well as the impacts on the patient's quality of life and its socio-economic effects.

Results

Chronic Non-Communicable Diseases (CNCDs) are often related to modifiable risk factors and the application of preventive thera-pies is of paramount importance to mitigate the negative impacts on quality of life and the progression of these diseases. According to the International Classification of Headache Disorders (ICHD), migraine is a primary headache characterized by recurrent episodes of pulsating or throbbing pain, unilateral, of moderate to severe intensity, lasting from 4 to 72 hours, and may be accompanied by transient neurological symptoms known as aura, which include visual and/or sensory alterations. Also noteworthy is the prevalence of headaches in different age groups and their relationship with productivity. It was shown that 53.2% of the economically active population in Brazil lost an average of 16.8 days of work per year due to headaches, with indirect costs amounting to nearly R$67.6 billion per year. Prophylactic approaches to migraine involve avoiding triggers by changing lifestyle habits and therapy with tricyclic antidepressants, β-blockers and topiramate. Topiramate emerged as a treatment for generalized tonic-clonic epileptic seizures. However, due to its action at various sites, its indication as a migraine prophylaxis in adults is described in the package leaflet, showing good accep-tance and efficacy in studies and clinical practice. In addition, it is on the 2022 National List of Essential Medicines (RENAME), available free of charge from the SUS. The purpose of the discussions at the 2nd National Headache Symposium, held on June 16, 2023, at the UFPR Campus Toledo, was to raise awareness among doctors, students and public managers about the need to include topiramate as a prophylactic medication for migraine. The event resulted in a request (n° 110/2023), approved at the Toledo City Council session, which was sent to the Ministry of Health.

Conclusion

Considering the data on the number of people who could benefit from preventive treatment for headaches, together with the fact that the prevalence of this condition causes damage and the proposal to promote and implement effective public policies by the Plan to Combat CNCDs, it is extremely important to include migraine as a chronic non-communicable disease and to adopt topiramate as prophylaxis.

Keywords: Migrânea; Profilaxia; Topiramato.

Headache Medicine

Cervicogenic headache, incidence and differential diagnosis

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Introduction

Cervicogenic headache is classified as a secondary headache by the International Headache Society (IHS). It is linked to cervical pathological changes, exhibiting a heterogeneous profile with prodromes. Its incidence has shown an increase following the SARS-CoV-2 pandemic, which may have been due to both social habit changes and pathological side effects.

Objective

To elucidate and guide the medical community on the clinical presentation, diagnosis, and appropriate treatment, emphasizing underdiagnosis and differential diagnosis.

Methods

Literature search in the databases of PubMed, Nature, Scielo, Wiley. Keywords used: cervicogenic headache, spanning from 1980 to 2022. Inclusion criteria comprised articles within this scope, exclusion criteria were articles unrelated to the topic or with outdated information.

Results

1319 articles were found, of which 106 were eligible. After reading and analysis, 27 older articles proved relevant for this study. The etiology and pathophysiology of cervicogenic headache, as suggested by clinical imaging studies, involve referred pain from C2-C3 nerve roots via the trigeminal nerve afferent territory. However, most cases are related to C3 fibers due to disturbances in the C2-C3 vertebral junction, triggered by muscle trigger points, inflammatory cartilage diseases, trauma, home office work, and SARS-CoV-2 infection. Two diverging lines exist regarding the presence of prodromes and organic symptoms in the clinical profile and for diagnosis. The International Study Group of Cervicogenic Headache (CHISG) asserts that cervicogenic headache consists of unilateral pain of varying intensity, worsening and radiating to the frontal, supraorbital, temporal, parietal, and occipital regions after neck movement and improper head positioning. It may involve pain starting in the frontal region and extending through the temporal, parietal, and occipital regions ipsilaterally, respecting dermatomes up to the cervical region. They also highlight the presence of prodromes such as throbbing and stabbing neck and occipital pain ipsilaterally. Accompanying symptoms include hypoesthesia, dysphagia, xerostomia, and stiffness in the passive movement of the upper limbs and neck. IHS does not recognize prodromes, differentiating cervicogenic headache from diagnoses such as tension headache, occipital neuralgia, and migraine. Consequently, there is a decrease in sensitivity and an increase in specificity, leading to up to 50% of cases being mistakenly treated as other pathologies. For treatment, a double-blind study demonstrated the efficacy of pregabalin at a dose of 450 mg/day in reducing the number of days with pain. Gabapentin at a dose of 600 mg/day shows positive effects with a rapid and sustained response (Level of Evidence C). Anesthetic blockade of pain with corticosteroids is effective but presents an average recurrence in 23.5 days. Non-pharmacolo-gical therapy is accepted as a treatment for cervicogenic headache. A Brazilian study compared three groups using corticosteroid blockade associated with physiotherapy techniques or not, demonstrating a significantly greater reduction in pain with Maitland's physiotherapy. Other studies were inconclusive regarding the use and effectiveness of techniques such as nerve excision or radio-frequency neurotomy. Additionally, implant neuromodulation and Coblation showed a partial response in pain reduction. It can be inferred that a combination of therapies forms the basis of treatment with better responses.

Conclusion

Cervicogenic headache presents various manifestations, with lifestyle changes impacting its incidence, necessitating medical training for identification. Confounding factors should be ruled out, and regarding treatment, the use of medications should be combined with physiotherapeutic methods to enhance positive results. Finally, cervicogenic headache should be included in the diagnosis of primary headaches, avoiding underdiagnosis and inadequate treatment.

Keywords: Cefaleia; Cervicogênica; SARS-CoV-2.

Headache Medicine

Epicrania fugax: a case report

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Introduction

Epicrania fugax (EF) is a primary headache characterized by episodes of brief, paroxysmal pain that runs across the surface of the head, in a linear or zigzag trajectory, through territories of different nerves. There are two variants described at that time, the posteroanterior and the anteroposterior. Actually is included in the Appendix of the third version of the International Classification of Headache Disorders (ICHD- 3).

Objective

To describe a case of EF.

Case report

A 79-year-old woman had a severe headache that started about 5 years ago. She described the headache attacks as paroxysms of pain that lasted seconds, and ran across the surface of the head, in a linear trajectory, from occipital to frontal region, duration of seconds and happened with a frequency of 2-3 episodes per month. During these attacks, she did not have trigeminoautonomic symptoms, aura, photophobia, phonophobia, nausea, vomiting, or worsened with physical exertion. Additionally, she had another headache that fulfilled the criteria for migraine without aura, with a frequency of 5 attacks per month. The temporal artery palpation revealed no abnormalities.

Neurological examination was completely normal. Magnetic resonance imaging of the head was normal. Amitriptyline, 25 mg per day, was prescribed for the prophylactic treatment of migraine. We chose not to treat EF due to the low frequency of attacks.

Conclusion

Epicrania fugax is a rare and still little- known primary headache. The description of new cases contributes to a better understanding of their patterns.

Keywords Headache Disorders; Primary; Headache; Epicrania fugax.

Headache Medicine

Prevalência de dor em outras topografias em indivíduos com cefaleia - dados preliminares de uma coorte brasileira

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Introdução

Estudos mostram a existência de comorbidade entre cefaleia e outras condições dolorosas. Há estudo demostrou que pacientes com cefaleia tem duas vezes mais chance de relatar dor musculoesquelética que aqueles sem cefaleia. Outro estudo mostrou que 83% dos pacientes com cefaleia apresentam dor cervical, sendo essa de alta frequência (média de 13 dias de dor por mês) e moderada intensidade (média de 6/10). Os fatores participantes da comorbidade entre quadros dolorosos descritos são à obesidade, a inatividade física, a ansiedade, a depressão, o estresse, os fatores ocupacionais e os fatores genéticos, que podem influenciar o limiar à dor. Sendo assim, esse estudo foi desenvolvido para explorar a relação entre cefaleia e dor em outras topografias.

Objetivo

1. descrever a prevalência de dor em outras topografias em indivíduos com cefaleia, 2. verificar se há associação entre dor em outras topografias e presença de cefaleia, 3. verificar se há associação entre dor em outras topografias e o tipo de cefaleia (episódica e crônica) e 4. verificar se há correlação entre frequência de cefaleia e frequência de dor em outra topografia. MÉTODOS: estudo analítico e descritivo com os dados da quarta coleta de uma coorte de nascidos vivos (1978/79) na cidade de Ribeirão Preto/SP. As perguntas de interesse foram: 1. Presença e frequência de cefaleia nos últimos 3 meses. 2. Considerando os últimos 3 meses, você teve dor em algum local desses? 3. De acordo com a figura, qual o local de maior dor? As regiões foram separadas da seguinte forma: cervical, dorsal, lombar, membros superiores, membros inferiores, abdome, tórax e pelve.

Resultados

compareceram a essa entrevista 1775 indivíduos, com idade média de 38,13±0,579, sendo 52,3% do sexo feminino. Sessenta e três porcento (n=1113) referiam ter apresentado cefaleia nos últimos 3 meses, sendo que 16,3% desses tinham cefaleia crônica (≥15 dias de dor por mês). Dentre os pacientes com cefaleia nos últimos 3 meses, a presença de dor em outra topografia foi de 51%. Dentre os pacientes com cefaleia e dor em outra topografia, dor em região cervical foi observada em 12,1%, região dorsal em 8,7%, região lombar em 37,4%, membros superiores em 8,7%, membros inferiores em 24,6%, abdome em 3,2%, tórax em 0,9% e pelve em 4,4%. Houve associação entre cefaleia e dor em outra topografia [X2(1)= 21,743, p= 0,001], sendo as regiões cervical (82,9% versus 17,1%) e dorsal (79% versus 21%) significativamente mais prevalentes entre os indivíduos com cefaleia quando comparados com os indivíduos sem cefaleia [X2(7)=17,778, p=0,013]. Houve associação entre dor em outra topografia e cefaleia crônica [X2(1)= 5,079, p= 0,024]. Houve correlação entre frequência de cefaleia e frequência de dor em outra topografia (rs= 0,165, p< 0,001), porém desprezível em termos estatísticos.

Conclusão

Essa é uma análise preliminar entre presença de cefaleia e presença de dor em outras topografias em uma coorte de nascidos vivos. Em indivíduos com cefaleia nos últimos 3 meses, a prevalência de dor em outras topografias foi de 51%. Dor em região cervical foi observada em 12,1%, região dorsal em 8,7%, região lombar em 37,4%, membros superiores em 8,7%, membros inferiores em 24,6%, abdome em 3,2%, tórax em 0,9% e pelve em 4,4%. Observou-se associação entre presença de cefaleia/presença de cefaleia crônica e dor em outra topografia, sendo dor nas regiões cervical e dorsal significativamente mais prevalentes em indivíduos com cefaleia. Não houve correlação entre frequência de cefaleia e frequência de dor em outra topografia.

Palavras-chave: cefaleia;dor;cervicalgia;dorsalgia.

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Headache Medicine

Assesment of response of peripheral nerve blocks in patients with headache in a tertiary service in Fortaleza

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Introdução

Headache is one of the most prevalent, disabling and undertreated conditions of humanity. The performance of peripheral nerve blocks with anesthetic is a practice that has grown among neurologists, especially those who deal more with headaches, in the last 20 years. This minimally invasive procedure aims to interrupt nerve conduction in the peripheral nervous system to relieve headaches, which can last from weeks to months. There is no consensus on how the technique should be used, as well as the type of local anesthetic, the use of corticosteroids, frequency and interval between applications. Finally, each center performs the peripheral nerve block according to its local protocol, in view of the scarcity of robust studies on the subject. The most commonly nerves included in the block are the greater occipital, lesser occipital and branches of the trigeminal nerve, such as the supraorbital, supratrochlear, and auriculotemporal nerves. Among the main indications of this procedure are the prophylactic and abortive treatment of primary and secondary headaches, especially migraine and trigeminal-autonomic headaches.

Objective

To evaluate the peripheral nerve blocks response in patients with headache. Methods: This is a retrospective cohort of 49 patients followed at the headache outpatient clinic of the Hospital Geral de Fortaleza (HGF) who underwent peripheral nerve block with anesthetic between january and may 2023. It was evaluated by the HIT-6 questionnaire and the number of days of pain per month, analyzed before and at least 4 weeks after the blockade. During follow-up, 16 patients could not be contacted for reassessment. The McNemar test was used for dichotomous variables between two dependent groups and the Wilcoxon test for the ordinal variables. SPSS software for Macintosh version 23.0 performed the analysis.

Results

81.6% of the patients had a severe HIT-6 (60-78 points), 8.2% intense (56-59 points), 6.1% moderate (50-55 points) and 4.1% mild (36-49) in the pre-blockade evaluation. Post-blockade evaluation shows that 27.3% of the patients scored it as severe, 18.2% as intense, 30.3% as moderate and 24.2% as mild. The majority (85.7%) of the patients had more than 15 days of pain in the month before the blockade. In the post-blockade evaluation, 69.7% of the patients had less than 15 days of pain in the month. There was a significant reduction in the disability caused by headache in the evaluated patients, with a decrease in the percentage of severe scores and an increase in the percentages related to mild and moderate scores after peripheral nerve blocks. Additionally, there was a reduction from 85.7% to 30.3% of patients with more than 15 days of pain per month after the blockade. These data denote an improvement in the patient's quality of life, considering the decrease in disability and in the number of days of pain, showing that this procedure is a good alternative treatment for patients with headache. However, we must consider the methodological limitations from a study without a control group to exclude, for example, the placebo effect.

Conclusion

Peripheral nerve blocks proved to be effective in the treatment of headaches, reducing disability and the number of days of pain per month in most patients.

Keywords: cefaleia; dor; cervicalgia; dorsalgia.

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Headache Medicine

Adherence to the headache diary in a specialized outpatient clinic of a tertiary service in Fortaleza

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Introdução

Headache is the most commonly evaluated symptom by neurologists, with a global prevalence of 35% of the population. Moreover, it is one of the most disabling clinical conditions, causing suffering and negative repercussions in the personal, social and professional scope of the patient, leading to direct and indirect costs for society. Faced with this negative impact on functionality and quality of life caused by headaches, there is a need to better understand the frequency and intensity of pain in patients to guide therapeutic goals. A strategy used for this purpose is to fill in the headache diary, where the patient performs a self-report, mainly the number of headache days per month and its intensity. In our service, a trained nurse gives a lecture in the waiting room, presenting the headache diary, its importance and guiding its correct completion. In addition, residents participating in the outpatient clinic are instructed to approach and encourage patient adherence to the diary during the consultation.

Objective

To know the prevalence of completing the headache diary in the specialized outpatient clinic of the General Hospital of Fortaleza (HGF). Methods: This is a cross-sectional and descriptive study carried out with a sample of 65 patients followed at the HGF headache outpatient clinic, from March to May 2023. A questionnaire was made with sociodemographic data, time of follow-up at the outpatient clinic and reason for the patient not to bring the headache diary with him/her to the current appointment.

Results

Of the 65 patients interviewed, we found that the average age was 48 years and that 89.2% were women and 10.8% were men. Most patients (46.2%) had more than 8 years of schooling, 32.3% from 4 to 8 years and 21.5% had less than 4 years of schooling. Most patients (53.8%) had been followed up for more than 3 years at the outpatient clinic, 12.3% from 2 to 3 years, 15.4% from 1 to 2 years and 18.5% less than 1 year. 42 patients (64.6%) did not take the headache diary and, when asked about the reason, 11 patients (16.9%) reported forgetting to take the diary, 11 patients (16.9%) reported not having received it before or that they were in their first consultation, 5 patients (7.7%) reported not having been instructed to fill in the diary, 3 patients (4.6%) lost the diary sheet and 9 patients (13.8%) did not think it was important or did not understand how to fill it in. Other justifications presented that were not divided into categories were 2 patients with daily headache and 1 patient with visual impairment. We found no statistically significant relevance between sex, age, education or follow-up time and filling out the diary. Our sample is mainly composed of a young population with good education, understanding the importance of the headache diary being expected. However, most patients did not adhere to this strategy, not taking the diary to the consultation for various reasons. Furthermore, 13.8% of patients did not realize the importance of this instrument, denoting a lack of communication between the service and the assisted population. As a specialized service, we must prioritize and insist on this gold standard strategy for the therapeutic follow-up of patients, intensifying, for example, the doctor's approach during the consultation. One possibility of optimizing the filling in of the diary would be to give the patient the option of doing so through a smartphone application for those who prefer, considering that most patients forget to physically take it to the appointment.

Conclusion

Most patients did not adhere to completing the headache diary for several reasons, the main ones being forgetfulness and not understanding its importance.

Palavras-chave: Headache;Diary;Adherence;Pain;Funcionality;Quality of Life.

Headache Medicine

Phytocannabinoids in Migraine: integrative review

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Introduction

In recent years, several studies have shown a relationship between the endocannabinoid system and pain processing. This has prompted discussions about the exogenous use of phytocannabinoids for controlling epileptic seizures, neuropathic pain, and more recently, their analysis for treating primary migraine headaches.

Objective

This review aims to revisit existing literature studies that have employed phytocannabinoids in migraine treatment and analyze their outcomes, assessing the applicability of phytocannabinoids in managing migraines.

Method

Based on a literature search across databases from the past twenty years, using descriptors such as "endocannabinoids and migraines," "phytocannabinoids and migraines," "juvenile migraine and cannabidiol," and "('Migraine Disorders"[Mesh]) AND "Cannabinoids"[Mesh]," we identified 304 articles, of which only 24 fulfilled the inclusion criteria.

Results

The selection yielded 24 articles, including: 4 clinical studies, 12 literature reviews, and 8 analyses in animal models, most of which revealed favorable results for the therapeutic use of the drug.

Conclusion

While this is a highly relevant topic, the literature lacks an adequate number of studies for the clinical evaluation of the use of medicinal cannabis in migraines. Findings from animal models and review data demonstrate favorable evidence for usage. However, speculating about the dosage, safety, or clinical effectiveness of its use is not feasible based solely on these. Further randomized clinical research involving humans is necessary.

Keywords: Migraine; Phytocannabinoids; Children.

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Headache Medicine

Analysis of the Use of Erenumab for the Prevention of Chronic Migraine: A Systematic Literature Review

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Introdução

Migraine is a neurological condition characterized by recurrent and debilitating headaches of varying intensity, ranging from moderate to severe. It can be classified based on frequency into episodic migraine (EM), with fewer than 15 headaches days per month, and chronic migraine (CM), with a frequency equal to or greater than 15 headaches days per month for at least three months, with at least eight days of migraine. This condition is the second leading cause of years lived with disability, demonstrating its potential to significantly impact the daily lives of both patients and their families, with its disability increasing as the migraine progresses, especially chronic migraine. The most commonly reported symptoms of migraine include unilateral headache lasting from 4 to 72 hours, often accompanied by nausea, vomiting, photophobia, phonophobia, and preceded by sensory disturbances (aura). These symptoms are often associated with the use of acute headache medications (AHM) in approximately 90% of patients, including triptans, opioids, non-steroidal anti-inflammatory drugs, and barbiturates, which can lead to various medical complications with long term use. The utilization of monoclonal antibodies in migraine therapy and prevention is grounded in the understanding of the involvement of the trigeminal system with the release of calcitonin gene-related peptide (CGRP) in migraine pain. Monoclonal antibodies work by binding to CGRP receptors and inhibiting their effects. Erenumab was the first fully human monoclonal antibody selective blocker of the CGRP receptor. Studies have shown its effectiveness at doses of 70 and 140 mg in the prevention of migraine in adults.

Objectives

Analyze the advantages, effectiveness, adverse effects, and response of Erenumab in individuals with chronic migraine.

Methodology

For the present study, the DeCS/MeSH descriptors 'monoclonal antibodies' and 'chronic migraine' were used, employing the boolean operator 'and' in the PubMed database. Filters applied included publication year between 2020 and 2023, free full text in English, and Clinical Trial in PubMed itself. The selected studies for final analysis had in their methodology the investigation of only Erenumab for the treatment of chronic migraine.

Results

It was demonstrated that with 12 weeks of Erenumab 70mg intravenous usage, there was a reduction of at least 50% in monthly migraine days and a decrease of 5.34 days in monthly acute headache medication (AHM) use. In this context, 8.6% of patients reported constipation, and 9% reported upper respiratory tract infections such as nasopharyngitis, while 1.9% developed antibodies against Erenumab during the study. Regarding the response time, other study showed that for patients who used 140mg, 52.5% had responses in the first month, and 84.2% in the second month. For the 70mg group, 41.7% had a response in the first month, while 77.8% had it in the second month, suggesting that 140mg may be a better option for chronic migraine (CM). The effects of Erenumab tend to persist or increase with continued treatment at both dosages. Studies have also shown a reversion from CM to episodic migraine (EM) in 53.9% of patients using 70mg and 52.2% with 140mg. Erenumab has also proven effective in individuals who did not respond to other treatments such as Botulinum toxin type A.

Conclusion

Erenumab has proven effective in improving the symptoms of chronic migraine (CM), including its reversal to episodic migraine (EM). Due to its longer half-life and selectivity, it has shown few adverse effects, contributing to treatment adherence. However, cases such as allergies and antibody production have been reported, representing a potential disadvantage alongside its price and possible fear of needles. Long-term follow-up studies should be encouraged to better assess the outcomes of the use of anti-CGRP monoclonal antibodies.

Palavras-chave: Erenumab;chronic migrane;monoclonal antibodies.

Headache Medicine

NSAIDs versus Acetaminophen efficacy in the treatment of Tension Headache: A Systematic Review

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Introdução

Tension Headache (TH) is a common cause of daily pain, which is normally treated with the use of Nonsteroidal Anti-Inflammatory Drugs (NSAIDs) and Acetaminophen (Paracetamol). However, there is no definitive evidence about which of the medicines has better efficacy in the remission of the headache, leaving the patients to their own devices to find the best treatment.

Objectives

Show and compare the effectiveness between NSAIDs and Acetaminophen in the daily use for TH treatment.

Methods

Randomized Controlled Trials (RCT) were selected to compare the use of NSAIDs and Acetaminophen in patients that suffered from TH. PubMed and Embase medical data bases were used for searching pertinent articles, totalizing in 838 relevant papers. For the screening, the following inclusion criteria were used: 1) Patients that have Tension Headache; 2) Only Randomized Controlled Trials selection; 3) The article needed to be in English; 4) The trial must have data comparing the use of acetaminophen and NSAIDs; 5) It must have the 2 hours after medication pain-free and/or pain reduction in the Visual Analog Scale (VAS) and/or pain relief by hour data of each drug. Only 19 passed the first screening and the second screening selected 7 for the use in this systematic review. Results: A total of 1771 patients (835 NSAIDs and 936 Acetaminophen) were analyzed. The articles showed a mean pain-free after 2 hours of 26,1% (375 patients) in the use of nonsteroidal anti-inflammatory drugs and 18,9% (406 patients) in the paracetamol use for tension headache. The NSAIDs group presented a mean pain relief by 2 hours of 58% (496 patients), versus 44% (510 patients) in the other group. However, the studies proved no remarkable difference (P>0.05) between the medications in a follow-up greater than 3 hours.

Discussion

The data show a slightly better efficacy for the NSAIDs group, showing an overall superior pain-free percentage at 2 hours and pain relief in

the VAS at that same time. Nonetheless, the paracetamol presented also with reliable results in the treatment of tension headache. However there still some questions about the reality of this results since the analysis of time windows longer than 3 hours shows no significant changes in the data. Other factors that compromise the quality of the analyses are the small number of studies that fitted in the inclusion criteria, the subjectivity inherent to pain quantification and the variety of drugs that compound the NSAIDs class.

Palavras-chave: Tension Headache; NSAIDs; Acetaminophen; Paracetamol.

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Headache Medicine

Headache Secondary to Temporomandibular Dysfunction in Adolescents: Case Report

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Categoria: Cefaleias Secundárias

Introdução

the diagnosis of headache secondary to Temporomandibular Disorder (TMD) is given when faced with a headache in a patient who has TMD; it disappears with the control of the DTM. Temporomandibular dysfunction consists of a set of clinical joint and muscular changes and/or associated structures in the orofacial region. It presents a complex and multifactorial etiology, associated with predisposing, initiating and perpetuating factors, such as parafunctional habits, anxiety, among others.

Although TMD is present mainly among young and middle-aged adults, studies carried out in children and adolescents seem to indicate an increase in cases at this stage. Since the symptoms and signs of TMD such as pain in the head, TMJ and muscles, restriction in the range of movement of the mouth, among others, can begin in childhood and last until adulthood. It is interesting to investigate its presence and associated factors in this age group, so that adequate clinical monitoring can be carried out.

Treatment must be carried out in a multidisciplinary manner, and the integration of physiotherapeutic and dental therapies has proven to be quite effective.

Objective

the present work aims to describe the resolution of the clinical case of a teenager who presents with headache and TMD, detailing the basis of the diagnosis and establishment of an appropriate treatment plan, in search of satisfactory results in the treatment proposed for the patient.

Case description

the patient arrived with pain in the left temporal region (site of the headache), pain in the left masseter and left pre-auricular region. The DC/TMD questionnaire (Diagnostic Criteria for Temporomandibular Disorder) was applied. The established diagnosis was Disc Displacement Without Reduction (DDSR) - with limited opening in the left TMJ, Myofascial Pain with reference (left temporal region) and headache with tension-type headache phenotype (secondary to TMD?). The patient and her guardian were informed about the treatment possibilities and accepted the proposed approach.

After the diagnosis of TMD and the headache to be clarified, treatment was instituted with the integration of physiotherapeutic and dental therapies, to resolve the patient's signs and symptoms, and improve her quality of life. To control the TMD presented in this clinical case, 1 weekly treatment was scheduled for 6 weeks. With the following behaviors for self-management by the patient: cognitive behavioral therapy, thermotherapy (moist heat), self-massage, stretching and home maintenance exercises. Conducts during care: kinesiotherapy, manual therapy (intra and extra-oral myofascial release, muscle stretching and joint mobilization techniques), electrotherapy (use of transcutaneous electrical stimulation (TENS) - conventional

mode for 20 min; and low-power LASER – infrared wavelength, energy 6J/point), dry needling at trigger points, anesthetic block of the auriculotemporal nerve and functional taping (resource chosen - knesio-tape at the end of the care).

At the end of the proposed treatment, the patient had satisfactory muscle and joint function and no headaches. He reported that they did not interfere with his well-being and he no longer took anti- inflammatories to control his symptoms. In a return visit, after a year, he mentioned that he had other episodes of pain, but that he knew what to do to control it. She highlighted that by knowing what she had and how to handle it, she felt safe, helping with her daily activities.

Conclusion

it can be stated that simple and reversible procedures were efficient in controlling the TMD and headache in question. Success is achieved mainly in providing the patient with the necessary information about this condition and how to control it. Furthermore, it is important to highlight that therapeutic success depends on the correct diagnosis and execution of therapies.

Palavras-chave: TMD; adolescents; Headache.

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Headache Medicine

Biobehavioral Management of Headaches

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introdução

Headache disorders rank as one of the most widespread and incapacitating health issues on a global scale, with an estimated global active prevalence that reaches 52%, being a major public health issue to be managed. In the context of acute and prophylactic management of headaches, although pharmacological approaches such as over-the-counter medications (i.e., simple analgesics and NSAIDs) and even opioids are predominant, biobehavioral treatments like cognitive behavioral therapy, biofeedback, relaxation techniques, mindfulness-based therapies, and acceptance and commitment therapy can be applicable for managing headaches, both in the context of immediate relief and long-term prevention. Despite its treatment value, non-standard proposals may present obstacles to be accepted and sustained by patients.

Methodology

We conducted a comprehensive search of relevant literature in databases such as PubMed, UptoDate and Cochrane Library to gather information on non-pharmacological management of headaches. We aimed to find literature published between 2017 and 2023 and applied specific keywords to narrow down the search results e.g. “Headache”, “Non- pharmacological management”, "Psychological management" and “Behavioral management”. 8 articles have been selected, between systematic reviews, meta-analysis and case control studies.

Objectives

To analyze the existence and applicability of behavioral and psychological strategies on the management of headaches in the context of pharmacological overuse.

Discussion

It is well known that the overuse of medication for headache can lead to potentially harmful effects to patients who suffer from this kind of pain. A peculiar example is the Medication- Overuse Headache (MOH), a chronic secondary headache disorder caused by the frequent and regular administration of acute antimigraine drugs or analgesics in patients with a primary headache. Educating patients about their condition, which includes advising them to avoid medication overuse, is still the most important form of prevention to MOH, combined with rational prescriptions of analgesics by clinicians. In this sense, evidence shows that despite the treatment setting, behavioral interventions and psychological counseling should be part of an interdisciplinary treatment approach. Also, being stress the most common headache trigger, psychological therapies are pertinent in managing the pain process. Considerable research demonstrates the effectiveness of cognitive behavioral therapy (CBT) in relieving headache; for instance it is observed as benefits of CBT a low consumption of medications and less frequent, less intense and less lasting headache episodes. CBT allows that, through perception in contexts of stress, the patient takes actions that protect him from starting, maintaining or prolonging pain. The integration of the CBT method with mindfulness components, specifically nonjudgmental acceptance of moment-to-moment experience, provides the ability to exercise full attention and to accept pain, without exaggerating it emotionally. Thus, biobehavioral treatments allow patients to deal with the subjective experience of pain associated with his beliefs, evaluations and confrontation of pain, equipping him with self-efficacy, (i.e., with control over pain), daily changing his maladaptive cognition. Despite the established efficacy of nonpharmacological interventions in the treatment of headaches, there is still limited availability and low adherence by patients, which makes these approaches arduous to apply.

Conclusion

Behavioral and psychological approaches, evidencing CBT and Mindfulness-Based Stress Reduction, may be a less iatrogenic option to treat and prevent headaches. Important obstacles to the nonpharmacological treatment success are patient’s attitudes and beliefs about behavioral interventions, patient’s lack of motivation to change and the unawareness of headache triggers, such as stress and medication-overuse.

Palavras-chave: Headache;Biobehavioral treatment;Cognitive behavioral therapy;Medication-Overuse.

Headache Medicine

Migraine aura mimics: when to suspect? Cases presentation

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Categoria: Cefaleias Secundárias

Introdução

Migraine aura (MA) refers to a transient neurological symptom that accompanies a headache in 30% of patients with migraine. The onset is gradual, disappearing within 5 to 60 minutes and visual aura occurs in over 90% of MA patients. Spreading cortical depression forms the electrophysiological basis of migraine aura phenomena: vascular changes associated with initial hyperemia followed by decreasing blood flow in the corresponding cortex. Differential diagnosis of migraine aura is wide, encompassing transient ischemic attack (TIA), strokes, seizure, ocular pathology, psychiatric disorder and others secondary structural pathology, including arteriovenous malformation (AVM). The medical literature reccurently reports association between migraine aura and AVM which describes in more than 58% of women. Furthermore, the overwhelming correlation between the side of the headache, aura and AVM is essential in diagnostic suspicion.

Objective

To describe potential differential diagnoses for migraine-like presentations related to AVM.

Case 1: a 41-year-old woman had been experiencing migraine aura since 12. The cephalalgia was pulsatile, always in the right frontotemporal region, severe intensity, two hours of duration and three times per week. Crisis episodes were associated with nausea, vomiting, photophobia, and phonophobia, often preceded by visual aura with a fortification spectrum and perioral paresthesia during 20 minutes always on the left side.

Neurological examination outside the crisis period was normal and migrainous symptoms presented a limited response to prophylactic medications and worsening to acute therapy with ergotamines and triptans while frequent episodic migraine was hypothesized. At 32, afterward sharpening headache with lipothymia, a cranial computed tomography angiography revealed an extensive right parietoccipital AVM which involved the branches of the middle and anterior cerebral artery with superficial drainage. Targeted embolization was indicated to control symptoms with reduction in frequency and intensity of pain as well as visual aura after four embolization sessions.

Case 2: a 66-year-old woman, smoker, systemic hypertension, previous family history of hemorrhagic stroke, developed migrainous headache since thirties. The pain was always on the left temporoccipital region, throbbing, during 24 to 48 hours, severe intensity, accompanied by nausea and vomiting, once a week, occasionally preceded by visual aura with shimmering scotomas and right homonymous hemianopsia.

Analgesic infiltration for cervicogenic pain and oral non steroidal anti inflammatory to infrequent episodic migraine controlled the symptoms. Around 58, she developed exacerbated migraine-like symptoms with worsening when taking serotonergic agonists. Then, cranial arteriography identified a left temporoccipital AVM involving the left middle and temporal cerebral arteries with sigmoid sinus drainage. The patient gained relief upon control of cerebrovascular risk factors, multidisciplinary monitoring and periodic neuroradiological accompaniment opted for conservative approach and neurological surveillance.

Conclusion

Both cases fulfilled diagnostic criteria for migraine aura, but only the case one performs the International Classification of Headache Disorders (ICHD-3) criteria for secondary cephalalgia attributed to AVM. Although, the second case arrived with a clinical characteristics of vascular disorder etiology.

Therefore, they highlight the importance of considering differential diagnoses of migraine aura according to presentation patterns, such as affect the same side, age of onset, drug response and evolution of AVM associated with migraine. Thus, AVM's intervention alternatives must be carefully chosen according to individual risks, benefits and severity of symptoms, which studies are inconclusive in relation to reducing risks for outcomes such as strokes.

Palavras-chave: Migraine; Migraine-like; Aura; Aura mimics; Arteriovenous Malformations.

Headache Medicine

National campaign to raise awareness about headache disorders: results of the event "Three's a crowd" in the city of Recife.

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Categoria: Educação Sobre Cefaleias Para Profissionais de Saúde e Pacientes

Introdução

the Global Burden of Disease Survey classifies headache disorders as one of the five most prevalent diseases in the world population, especially primary headaches: migraine (14%) and tension-type headache (26%). In addition to the its high prevalence, headaches are responsible for causing disabilities in this large population, whether of personal, professional or social nature. However, headache disorders are still under-recognized, under-diagnosed and under-treated globally. Reports from patients claiming to suffer from this condition are common, but they do not seek professional health care, trying to manage it with self- medication or other practices guided by unqualified professionals. An initiative of the Brazilian Headache Society to raise awareness among the population and health professionals about the importance of correct diagnosis and treatment of headache disorders is the National Campaign "Maio Bordô (Burgundy May)". Objective: to describe the sociodemographic profile and headache clinical characteristics of the interviewees during the event.

Methods

this is a cross-sectional study, conducted by the Laboratory of Learning and Motor Control (LACOM - Department of Physiotherapy) and the Medicine Memorial, both belonging to the Federal University of Pernambuco, in partnership with the Brazilian Headache Society. The event was held on May 19th, 2023 and was conducted by neurologist, physiotherapists, undergraduate and graduate students. The interviews were conducted with 101 volunteers (n = 61 females and n = 39 males) and information on age, sex, presence of headache, search for specialized assistance, as well as clinical characteristics of their headaches, based on the International Classification of Headache Disorders, were collected. The data were organized according to the variables evaluated and inserted in an electronic database.

Results

headache was prevalent in 89.5% (n=77/101) of the sample and women were more affected than men (x^2 $p < 0.001$). The mean age was 47.4 years (SD 18.7, Mann-Whitney U P.0.029) and 68.6% (n=53/77) of the volunteers never sought professional help. Out of the 31.2% (n=24/77) who did, the professionals sought in increasing order of demand were a) neurologist (18.2%), b) general practitioner (13%), c) cardiologist (6.5%), d) otorhinolaryngologist (1.3%). Pulsatile pain was the most prevalent in the sample 59.5% (n = 44/77). Regarding the events, behaviors and exposures that precede or accompany headache episodes, the main triggering factors were stress (20.6%); caffeine withdrawal (5.9%) and anxiety (5.9%). When compared by gender, women presented a higher frequency of intense pain (27.1%) than men (14.1%), however, no statistically significant (Mann-Whitney U P = .0.608) difference between the groups was observed. Regarding the strategies adopted aiming pain relief, 60.5% (n = 52/77) of the volunteers reported the usage of analgesic medication, while 18.6% of the sample did not use any strategy. About 11.6% of the sample only rests and 9.3% used various strategies to relieve their headaches.

Conclusion

there was a high prevalence of headache disorders in the sample and women were the most affected. More than half of the volunteers who reported headache did not seek medical help and this probably justifies the high rate of drug consumption as a strategy to manage the headache episodes. These findings indicate the urgent need of further clarification for the population about headaches and their impacts on health. Moreover, such investigations can provide valuable insights to improve the management and treatment of headache disorders.

Palavras-chave: migraine disorders; surveys and questionnaires; data reliability.

Headache Medicine

Ways to Prevent Migraines: A Literature Review

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Categoria: Tratamento Preventivo da Enxaqueca

Introduction

migraine is a primary headache of high prevalence and strong intensity, compromising routine and causing several disorders. It is known that recurrent episodes of this headache can be functionally disabling and impair the individual's quality of life. Therefore, after treatment of acute migraine, all patients must be evaluated for the need for preventive therapy, aiming to reduce the frequency, severity and duration of headache attacks. Furthermore, prophylaxis can increase responsiveness to acute therapy and improve quality of life. However, prophylactic treatment is not curative and most patients will still require abortive medications on some occasions. Thus, the implementation of healthy habits and medication administration can contribute to improving patients' lives.

Objective

literature review seeking to compile and update various forms of migraine prophylaxis.

Methodology

literature review using the MEDLINE and EMBASE databases, with the following descriptors: migraine disorders, migraine prevention, preventive headache treatment and their combinations. Original articles published in Portuguese, English and Spanish between 2017 and 2023 were included, with themes relevant to the object of study, with 8 studies being selected to compose this review.

Results

migraine prevention should include a combination of pharmacological and non-pharmacological measures; Natural supplements, vitamins or minerals and Lifestyle changes. It is important to maintain an active routine, with exercise, as during these activities endorphins and serotonin are produced, which block pain stimuli in the brain, also helping to reduce symptoms of anxiety and depression, conditions that can worsen migraines. . Furthermore, getting quality sleep every night and adequate nutrition are essential, considering that a lack of restful sleep and an unbalanced diet culminate in migraine attacks. Furthermore, reducing stress and using a migraine diary have been shown to be effective in preventing attacks. When it comes to drug therapies, different classes of drugs are used, such as lipophilic beta blockers, anticonvulsants, anti-calcitonin gene-related peptides (CGRP), antidepressants, natural supplements, neuromodulation devices and neurotoxins. Often, the doses used for migraines are different compared to the original intended purpose, making it necessary to be careful when prescribing these medications. Regarding nutritional supplements, vitamin and mineral complexes are generally well tolerated by most patients, although the evidence of effectiveness, in many cases, is not yet robust. Riboflavin, magnesium, and MIG-99 (feverfew) are likely effective.

Conclusion

A preventative strategy focuses on reducing the frequency, severity, or intensity of symptoms and improving responsiveness to acute medications when needed. The benefits of a successful migraine prevention plan include reducing the level of disability, reducing overuse of acute treatments, and improving the patient's quality of life. Despite many studies on the subject, there is still no ideal medication for migraine prophylaxis, requiring a case-by-case assessment, seeking a better therapeutic response with a minimum of undesirable side effects. In these cases, prescribing supplements can be an interesting option as they are well-tolerated medications with few restrictions, even for geriatric age groups.

Keywords: Migraine Disorders; Headache Disorders, Primary; migraine prevention.

Headache Medicine

Impact of pharmacological and behavioral interventions on post-traumatic headache in children: a literature review

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Categoria: Cefaleias em Crianças e Adolescentes

Introduction

The diagnosis of Post-traumatic headache (PTH) in children presents challenges, mainly attributed to the limited understanding of the pathology by general pediatricians, together with the greater vulnerability to traumatic brain injuries in this pediatric age group. The incidence of this pathology among children is between 3 and 11%, being higher among girls and adolescents compared to children. By definition, headache that develops within 1 week after head trauma (or within 1 week after regaining consciousness) is referred to as PTH. Although the majority of PTH resolves within 6-12 months after injury, approximately 18-33% of PTH persists beyond 1 year. Most post-traumatic headaches are migraine or tension headaches (TTH), but occipital neuralgia, cervicogenic headache, and medication overuse headache also occur. The most common clinical presentations of this headache are neck pain, cognitive complaints and psychological and psychiatric symptoms. This symptomatology is still an undertreated condition due to limited pharmacological treatment options. Thus, multimodal non-pharmacological approaches, which account for comorbidities and psychosocial factors, are often used in patients with PTH.

Objective

review the scientific literature in order to analyze the impacts of drug therapy on post-traumatic headache in children.

Methodology

this is a bibliographical research conducted in the MEDLINE and EMBASE databases, using the descriptors traumatic headache, post trauma headache, secondary headache, traumatic brain injury, posttraumatic headache, pediatric and their combinations. Original articles published in Portuguese and English between 2017 and 2023 were included, with themes relevant to the object of study, with 6 studies being selected to compose this review.

Results

PTH treatment requires a multidisciplinary approach and includes a combination of drug-free and pharmaceutical methods. Increasing evidence suggests that combined pharmacological and non-pharmacological interventions, encompassing non-invasive neuromodulation, physical therapy, cognitive behavioral treatment, and education, may be the best approaches for PTH and related comorbidities. For acute treatment, nonsteroidal anti-inflammatory drugs can be used. If headaches have migratory characteristics and nonsteroidal anti-inflammatory drugs are not effective, triptans may be beneficial. For preventive treatments, some reports indicate that amitriptyline, gabapentin, or topiramate may be beneficial. Amitriptyline is a good choice because it can be used to treat migraines and tension-type headaches. Nerve blocks, nutraceuticals (e.g., melatonin), and behavioral therapies may also be helpful, and lifestyle factors, especially proper sleep hygiene and strategies for coping with anxiety, should be emphasized.

Conclusion

rigorous assessment and diagnosis are vital to treating post-traumatic headaches effectively. A multidisciplinary approach is needed to address all possible factors contributing to headaches and any comorbid conditions that may delay recovery or alter treatment choices. Improved acute post-traumatic headache therapy may reduce the likelihood of developing chronic headaches, which can be especially problematic to manage effectively and can be functionally debilitating.

Palavras-chave: traumatic headache; post trauma headache; secondary headache; traumatic brain injury; posttraumatic headache; pediatric.

Headache Medicine

Cannabis Use in Headache Treatment: A Literature Review

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Introduction

headaches are classified in various ways and have significant global prevalence, affecting millions of people, impacting their quality of life and daily productivity. Although a variety of therapeutic approaches have been developed over the years, some remain insufficient in terms of effectiveness and tolerance, which induces patients to seek alternatives for pain relief. In this scenario, cannabis, a plant that has been used for millennia for medicinal purposes, emerges as a promising candidate in headache treatment. Cannabis is known for its active compounds, cannabinoids, which include delta-9- tetrahydrocannabinol (THC) and cannabidiol (CBD). These compounds interact with the body's endocannabinoid system, which plays a important role in pain and inflammation regulation. This complex interaction between cannabinoids and the endocannabinoid system has intrigued researchers and led to a series of clinical and preclinical studies on the use of cannabis in headache treatment.

Objective

to review the scientific literature in order to analyze the use of cannabis in headache relief.

Methodology

this is a bibliographic research conducted on the EMBASE and MEDLINE databases using descriptors such as headache disorders, medical marijuana, headache treatment, cannabis treatment and their combinations. Original articles published in English between 2018 and 2023 relevant to the study's objective were used. Five studies were selected for this review.

Results

the use of cannabis for headache treatment is considered promising due to a convergence of data. Analyses emphasize the beneficial short- and long-term effects of medicinal cannabis in treatment. It has shown efficacy in reducing dependence on analgesics, pain intensity, and daily use of these medications. Patients have reported prolonged improvements in their physical and mental health with continuous use of medicinal cannabis, especially for managing chronic pain and mental health issues. However, it is important to note that repeated use may lead to tolerance, although it does not appear to cause medication overuse headache as seen with other conventional treatments.

Nevertheless, the lack of updated evidence, considering that cannabis contains a wide range of pharmacological and biochemical compounds, many of which are not fully understood, due to the lack of studies on this subject and the restrictive social convention ir carries, coupled with the lack of professional training and uniform guidelines, has led some healthcare professionals to hesitate in recommending medicinal cannabis.

Conclusion

while there is a growing interest in cannabis as a treatment for headaches, controlled clinical trials are essential to confirm efficacy, determine optimal dosages, and understand possible long-term effects. The field of medicinal cannabis continues to evolve, promising more personalized and effective treatments for patients with chronic pain and headaches.

Palavras-chave: Headache disorders; Medical marijuana; Headache treatment.

Headache Medicine

The effects of caffeine on migrain headache: a literature review

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Centro Universitário Christus - Unichristus, Fortaleza - CE - Brasil.

Introduction

migraine is an episodic neurological disorder characterized by intense, throbbing headaches often accompanied by symptoms like nausea, vomiting, light sensitivity, and sound sensitivity. Migraine attacks can last from 4 to 72 hours and occur in four phases: premonitory, aura, headache, and postdrome. It can be classified as with or without an aura, depending on the presence of transient neurological symptoms before or during the headache. The frequency of attacks determines if it's episodic or chronic migraine. Caffeine, a chemical compound found in certain plants and commonly consumed in beverages like coffee, acts by stimulating the central nervous system and is mainly used as a stimulant, working as an antagonist to adenosine receptors. The complex interaction between caffeine and migraine has been widely studied for many years, both as a trigger and a treatment for migraine.

Objective

to review the literature and explore the triggering and therapeutic effects of caffeine in relation to migraine.

Methodology

this is a literature review conducted using the EMBASE and MEDLINE databases with keywords "Headache," "Migraine," "Caffeine," "Caffeine treatment," and "Caffeine in migraine." Original articles published in English between 2006 and 2022, relevant to the study's objective, were included, resulting in 7 studies being used for this review.

Results

the effects of caffeine on headache are complex and involve various nuances. Caffeine has been associated with migraine for many years, but its influence on headaches is ambiguous. Some studies indicate that caffeine consumption, whether in the form of coffee or other products, as well as abrupt caffeine withdrawal, can trigger migraine in a small proportion of individuals with this type of headache. However, this relationship is not always clear, as it can be challenging to distinguish between true migraine triggers and premonitory symptoms like yawning, decreased energy, and sleepiness, which may lead to caffeine consumption. Another important point is that there is not enough provoking evidence to confirm that caffeine is a direct migraine trigger. On the other hand, caffeine, when used alone or as part of specific medications, has shown to be safe and effective in the acute treatment of migraine. It exerts its effect primarily through the antagonism of adenosine receptors, resulting in additional vasoconstriction and reduced cerebral blood flow. However, it's essential to highlight that chronic excessive caffeine use can lead to the chronicization of migraine, and sudden caffeine withdrawal can trigger migraine attacks. Therefore, individuals suffering from migraine should be aware of their caffeine intake, and if they choose to continue consuming this substance, they should maintain their daily intake as consistent as possible to avoid headaches due to withdrawal.

Discussion

caffeine has a complex role in headaches, potentially acting as both a trigger and an effective tool in migraine treatment. Its proper use and effects can vary significantly from person to person, and further studies are needed to fully understand this intricate relationship.

Palavras-chave: Caffeine; Headache treatment; Migrain disorder.

Headache Medicine

Prevalence of headache in children and adolescents: a literature review

Otavio Pereira da Silva Filho; Giulia Rebouças Pinheiro; Melyssa Maria Fernandes da Rocha Nunes; Ana Clara Mendes Soares; Marina Pinheiro Uchoa Azevedo; Lívio Martins Lousada; Isadora Pinheiro Coutinho; Lucas Eliel Beserra Moura.

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Categoria: Cefaleias Em Crianças E Adolescentes

Introduction

headaches represent a group of pathologies that are quite common in children and adolescents and which have a high chance of damaging the individual's well-being if not treated correctly. This condition can be classified as primary headache or secondary headache depending on its etiology. The causes of the disease in children and adolescents differ between etiologies, for example, secondary headache is usually caused by an underlying systemic condition and is a consequence of a disease, such as meningitis. The symptoms caused by headaches can be the result of a stressful routine of children and adolescents. They are very diverse and range from hypersensitivity to stimuli, such as light and sound, to eyelid drooping, so they can negatively affect the daily activities of people in this age group, such as studying and, in some cases, their work productivity.

Objective

to understand the general aspects of the prevalence of headaches in children and adolescents.

Methods

this is a bibliographic review using articles published in the PubMed (National Library of Medicine) and Scielo (Scientific Electronic Library Online) databases, using the science and health descriptors: headache, routine, children and adolescents. The inclusion criteria for this review were articles and texts published between 2008 and 2022, available free of charge in Portuguese in the databases related to the subject of the abstract. Articles published before 2008 that did not satisfactorily address the subject of the study and the study inclusion criteria were removed from the simple.

Results

migraines are very common in children and adolescents, with around 1 in 10 people in this age group having experienced an episode of this headache. Its etiology has various causes, from emotional fatigue to genetic factors. This condition is the most common reason for consultations in child neurology clinics. In this sense, chronic and intense headaches can be substantially prejudicial to children, negatively influencing their well-being and having various consequences, such as significant damage to the child's or adolescent's cognitive and social development. Therapeutic approaches for primary headache, especially in children, are complicated by difficulties in communication and a lack of robust evidence. Therefore, the most commonly used treatment for this condition in this age group is to change the child's or adolescent's daily habits.

Conclusion

headache is a heterogeneous pathology, from the initial clinical symptoms to the choice of therapy. Therefore, at the same time, the disease is related to a tiring routine, causing adverse effects in the social sphere, at school and in the development of children and adolescents. In addition, diagnosis in children can be hampered by a lack of communication and evidence, demonstrating the need to use skills aimed at these individuals.

Palavras-chave: Headache; Children; Adolescents; Routine.

Headache Medicine

Alternative therapeutic methods for headache: a literature review

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Introduction

headache represents a group of diseases with a great potential for harmful effects on well- being, if not treated appropriately and efficiently. This condition can be classified as primary or secondary. Primary headaches are more frequently associated with less severe etiologies and are often related to emotional stress or fatigue. The symptoms caused by headaches are very diverse and can affect people's daily activities, such as work and study. This condition can be treated with simple analgesics, however, it may be necessary to use combinations and therapeutic associations. Alternative therapeutic methods, such as yoga and acupuncture, are being successfully used as adjuvants in this therapy.

Objective

to review the scientific evidence relating the effectiveness of alternative therapies in the treatment of headaches. Methods

this is a bibliographic review using scientific products published in the PubMed (National Library of Medicine) and Scielo (Scientific Electronic Library Online) databases, using the science and health descriptors: headache, alternative therapies and analgesics. The inclusion criteria for this bibliographic review were articles and texts published between 2001 and 2022, available free of charge in full in Portuguese in databases related to the subject of the summary. Articles published before 2001 that did not satisfactorily address the study topic and review criteria were removed from the sample.

Results

the most prevalent etiology of the disease is primary headache, which can be caused by a tiring and stressful routine. In this context, some people may have contraindications to the use of the drugs most commonly used to treat headaches, such as allergic reactions or a history of drug addiction. Alternative therapies consist of mitigating stress in the person's body; acupuncture, for example, uses the application of needles to specific points so that this excess energy is released, mitigating stress and, consequently, headache episodes. In this sense, acupuncture can work as a non-opioid analgesic with a better safety profile. In the case of yoga, this alternative therapy is related improving headache duration, headache frequency, and pain intensity in patients suffering from tension-type primary headaches.

Conclusion

headache is a heterogeneous pathology that has various therapeutic methods, which may involve the administration of analgesic drugs or not. Therefore, at the same time, alternative treatment measures for this condition are emerging to mitigate the harmful effects caused by the headaches on the patient's daily activities and to cover as many people as possible in headache therapy. Therefore, it is necessary to introduce measures to inform the population about these alternative methods of treating headaches.

Keywords: Headache; Methods; Therapeutic; Acupuncture; Yoga.

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Headache Medicine

Acute treatment of severe migraine: a literature review

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Categoria: Tratamento Agudo da Enxaqueca

Introduction

Migraine is a neurological, genetic, and chronic disease that profoundly affects people's quality of life. It is characterized as a generally pulsating, unilateral pain aggravated by physical activity and lasting between 4 and 72 hours. It is estimated that acute migraine attacks are responsible for 1.2 million visits to the emergency department every year in the USA. Treatment for these attacks is being studied with the aim of advancing therapeutic efficacy and safety.

Objective

the purpose of this review is to assess which drug therapy has been most beneficial in stopping acute severe migraine attacks.

Methods

this is a review of the literature, which evaluated studies on the recommended therapies for the management of severe migraine attacks. Pubmed, Medscape, and Embase were used as databases, and papers published in the last five (5) years were analyzed using the descriptors "Migraine headache", "acute treatment", and "severe migraine attack".

Results

the abortive treatment of severe migraine attacks aims to quickly and safely stop the pain symptom and associated manifestations such as nausea, the sight of scotomas, photophobia, and phonophobia. However, despite the high availability of therapies, it can be difficult to achieve this goal. Triptans, 5-hydroxytryptamine-1 (5-HT1) agonists, are generally used as first-line treatment for this type of headache, as they have strong evidence of efficacy, tolerance, and safety. The choice of triptan should be individualized for each migraine pattern, as this class has great pharmacological heterogeneity and, consequently, different responses. In addition, the best results occur when they are taken at the beginning of the crisis, with pain relief being achieved within 2 hours in 42 to 76 % of cases. Sumatriptan is the most studied and has the most favorable evidence and results, especially in its subcutaneous form. Triptans have proven to be safe for most patients; however, it is recommended that they be avoided in cases of ischemic stroke, ischemic heart disease, and uncontrolled hypertension. Its combination with the NSAID naproxen sodium is widely used in clinical practice. This combination reduces the number of tablets increases patient compliance, and has shown superior efficacy to monotherapy. As a second-line therapy, calcitonin gene-related peptide (CGRP) antagonists, which mediate trigeminovascular pain transmission, have been shown to be very effective in the abortive treatment of severe migraine, as they have a rapid onset of action, around 15 minutes. However, studies show that they require higher doses compared to triptans for the absence or relief of pain. Rimegepant and ubrogepant have received approval from the Food and Drug Administration (FDA) in the USA for the treatment of acute migraine and are very effective in patients who have not responded to or have contraindications to triptans. The FDA has also approved Lasmiditan for the treatment of acute migraine, which is a selective agonist of the serotonin 1F receptor, used in patients with contraindications to the use of triptans due to their cardiovascular risk because they do not have vasoconstrictive activity.

Conclusions

there are numerous drugs with proven efficacy and safety for the treatment of acute severe migraine attacks. The use of triptans is recommended in these cases, given their rapid and long-lasting action, combined with the reduced number of contraindications. In addition, the sumatriptan-naproxen combination has proved to be very effective, reducing pill burden and increasing patient compliance. Other therapies, such as CGRP antagonists and Lasmiditan, are of great importance as second-line drugs. Therefore, these therapies should be chosen carefully according to the individuality of each patient.

Keywords: Migraine Headache; Acute Treatment; Severe Migraine Attack.

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Headache Medicine

Clinical Features and Treatment Options for Cluster Headaches and Other Trigemino-Autonomic Headaches: A Literature Review

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Categoria: Cefaleia em Salvas e outras Cefaleias Trigêmino-Autonômicas

Introduction

Trigemino-autonomic headaches represent a distinct and complex group of headache disorders. Although considered rare, they are an extremely debilitating condition, and their severity and impact on the quality of life should not be underestimated. This group comprises various complex types of primary headaches, such as cluster headaches, paroxysmal hemicrania, and SUNCT (short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing). These conditions are characterized by severe headache pain, often unilateral, and accompanied by autonomic symptoms like nasal congestion, facial redness, and tearing. Despite their rarity compared to other headache types, individuals suffering from these disorders still face a challenge in finding effective relief options, highlighting the importance of a better understanding of clinical characteristics and therapeutic approaches used by healthcare professionals.

Objectives

This study aims to address cluster headaches and other types of trigemino-autonomic headaches, focusing on their clinical characteristics and the most commonly used therapeutic approaches today.

Methods

This research was conducted through a systematic literature review, covering headache- related topics and classifications, using the PubMed and Scielo databases. The inclusion criteria involved English and Portuguese languages, with publications from 2010 to 2023.

Results

Among trigemino-autonomic headaches, cluster headaches are the most common. They are clinically characterized by an extreme, intense, and excruciating pain pattern, typically located around the eye, lasting approximately 15 minutes to 3 hours. Cluster headaches occur in episodic patterns, with patients experiencing daily or multiple attacks per day for weeks or months, known as "clusters," followed by remission periods. One distinctive feature during these episodes is restlessness; patients become agitated and restless, sometimes resorting to self-harm for pain relief. Currently, the most commonly used therapeutic approaches for these patients include high- flow oxygen inhalation, providing rapid relief during attacks, acute medications such as triptans and local anesthetics like nasal lidocaine, which aid in pain reduction, and preventive medications such as Verapamil for chronic cases, prescribed to reduce the frequency and severity of attacks.

Conclusion

In summary, the treatment of trigemino-autonomic headaches can be complex and varies depending on the specific condition and individual response. It is essential for patients to seek evaluation and treatment from a neurologist or headache specialist to develop a treatment plan tailored to their needs and conditions. Furthermore, it is important to emphasize the need for ongoing research to enhance te understanding of these rare conditions and identify more effective treatment options for affected individuals.

Keywords: Trigeminal Autonomic Cephalalgias; headache disorders; headache.

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Headache Medicine

Epidemiological Analysis of Migraine in Brazil's Macroeconomic Regions

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Categoria: Epidemiologia, desfechos e impacto das Cefaleias

Introduction

Migraine is a highly prevalent chronic neurological condition in Brazil, characterized by recurrent headache attacks often associated with photophobia, phonophobia, and nausea. This significantly impacts the quality of life of affected individuals, as it requires a well-established diagnosis and treatment to positively affect patient well-being. This information is essential for effective healthcare resource management. Additionally, it's vital to identify risk factors associated with migraine, such as family history, sedentary lifestyle, and smoking, as this analysis can contribute to effective population prevention measures. Furthermore, it is pertinent to assess the impact of migraine on the quality of life of individuals, considering factors like pain intensity, frequency, duration, the presence of aura, and how these conditions, together or separately, can impair daily life to varying degrees. In this context, it's essential to emphasize the need to evaluate patients' access to various pharmacological treatments such as analgesics, tricyclics, beta- blockers, anticonvulsants, and SSRIs, as well as non-pharmacological treatments like adopting a healthy diet to avoid fatty foods and alcohol, engaging in daily physical exercise, and undergoing cognitive-behavioral therapy to manage stress triggers for migraine attacks.

Objective

To analyze how hospitalizations and mortality due to complicated migraines have evolved over a fifteen-year period in the Brazilian macroeconomic regions within the Unified Health System (SUS).

Methods

This study is an ecological time-series analysis that utilized data from the Health Information System (TABNET), provided by the Department of Health Informatics of the Unified Health System (DATASUS). Information regarding the treatment of complicated migraines was collected from the Hospital Information System of SUS (SIH/SUS) of the Ministry of Health. The analysis covered the period from January 2008 to July 2023. The data obtained were analyzed quantitatively using the "Microsoft Excel" software. This study utilized publicly available secondary data, thus obviating the need for ethical review.

Results

The Northern region shows an increasing trend in the number of hospitalizations (IS) with an accumulation of 5,086, an average cost per hospitalization (VMP) of R$136.9, an average length of stay (MDP) of 3.0 days, and 46 deaths (OS). The Northeast region demonstrated an increasing trend in IS with 18,626 cases, VMP of R$147.2, MDP of 3.2 days, and 102 deaths. The Southeast region exhibited an increasing trend in IS with 33,337 cases, VMP of R$209.7, MDP of 3.4 days, and 110 deaths. The Southern region showed an increasing trend with a total of 22,756 IS, VMP of R$228.6, MDP of 3.3 days, and 38 deaths. Finally, the Central-West region represented an increasing trend with a total of 5,776 IS, VMP of R$156.2, MDP of 2.5 days, and 92 deaths.

Conclusion

In light of the above, it can be inferred that the ecological time-series study, based on TABNET data provided by DATASUS, indicates that hospitalization rates due to complicated migraines are progressively increasing, as shown by the increasing trend line, resulting in considerable costs, extended lengths of stay, and deaths in all macroeconomic regions of Brazil. Regarding IS and VMP statistics, the Southern and Southeastern regions stand out with significantly higher values compared to other regions. Despite the Southeast having a larger population, both the average number of IS and VMP are still higher than in other parts of Brazil. However, this quantity does not reflect a decrease in deaths in the Southeast, but a decrease is observed in the Southern region. Nevertheless, the Northern region showed the lowest numbers. Therefore, it is evident that there is a deficit in the treatment and approach to patients with migraines, constituting a public health issue.

Keywords: headaches; migraine; Unified Health System.

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Headache Medicine

Discussion of Current Approaches and New Therapies for the Treatment of Acute Migraine: A Literature Review

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Categoria: Tratamento Agudo da Enxaqueca

Introduction

Headache is one of the most prevalent neurological disorders worldwide, with migraine standing out among the various types due to its highly debilitating nature, significantly impacting the quality of life for many individuals. Additionally, due to its disabling nature, it has a substantial economic impact, including direct medical expenses, loss of productivity, and work absenteeism. Furthermore, migraine can be classified based on the presence of aura and duration, either as acute or chronic. In light of this, it is important to understand the aspects related to current approaches to this condition, such as availability, cost, and benefits, and to be aware of new therapies for the treatment, particularly for recurrent or difficult-to-control forms of migraine with current therapies.

Objective

The purpose of this work is to compare current pharmacological approaches and new therapies developed for the treatment of acute migraine, highlighting their advantages and disadvantages.

Methods

This study was conducted through a systematic literature review, covering headache- related topics and classifications, using the PubMed and Scielo databases. The evaluation parameters included English and Portuguese languages, with publication dates ranging from 2013 to 2023.

Results

It was found that the current approach to acute migraine primarily involves pharmacological measures, such as over-the-counter analgesics, nonsteroidal anti-inflammatory drugs (NSAIDs), and triptans. The most commonly used are over-the-counter analgesics like Dipyrone and Paracetamol, which offer pain relief but have limitations regarding moderate to severe migraines. Often, they are combined with a nonsteroidal anti-inflammatory drug (NSAID) like Ibuprofen, which can alleviate pain and inflammation associated with migraine but is not effective for all patients. Finally, there are triptans, such as Sumatriptan, a prescribed class of medications that specifically target migraines, relieving symptoms of pain, nausea, and photophobia. However, triptans have more side effects and are not effective for all patients. Regarding new therapies, monoclonal antibodies, neuromodulation devices, and oxygen therapy stand out, with monoclonal antibodies like Erenumab and Fremanezumab being the most common. These therapies work by blocking CGRP proteins, which play a significant role in migraine pathophysiology. These medications have shown significant efficacy in reducing the frequency and severity of migraine attacks and have fewer side effects than some older medications. However, they are associated with a high cost and may not be accessible to a large portion of the population.

Conclusion

In summary, the ideal approach to acute migraine treatment varies from person to person, considering socioeconomic status, symptom severity, treatment response, and potential side effects. Conventional approaches using analgesics, NSAIDs, and triptans are the most commonly used. Nevertheless, newer therapies like monoclonal antibodies represent significant advances in migraine treatment, providing effective relief with fewer side effects compared to some older therapies, benefiting many individuals. However, ongoing development of new therapeutic options and personalized treatment for migraine sufferers are areas of research that need to be encouraged and supported to improve the quality of life for these individuals.

Keywords: migraine; Quality of life; Analgesics.

Headache Medicine

Pain intensity in cluster headache - case report

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Categoria: Cefaleia em Salvas e outras Cefaleias Trigêmino-Autonômicas

Introduction

Cluster headache has been considered as one of the worst painful conditions, based on comparisons made by patients, which includes women who underwent vaginal delivery without anesthesia. The pain is so intense that this type of headache has been termed by some as suicidal headache, due to the ideations provoked. A study involving 4876 subjects, comparing pain from different causes, revealed cluster headache as the worst of all, with an average score on the Visual Analogue Scale (VAS) of 9.7, a number significantly higher than the one found in childbirth (7.2), in acute pancreatitis (7.0) and nephrolithiasis (6.9). A cluster headache attack hardly occurs simultaneously with a severe pain from another cause, allowing direct comparison.

Objective

To present a clinical case in which the individual suffered an open fracture of the Tibia and Fibula concomitantly with a cluster headache attack, allowing comparison regarding the intensity of the pain.

Case report

A 44-year-old white male patient, diagnosed six years earlier with chronic cluster headache, which became refractory to preventive treatments, and remained responsive to injectable sumatriptan and/or inhalation of moist oxygen during attacks. This patient, in general, used to rate the intensity of the pain in the attacks between 9 and 10 in de Visual Analogue Scale (VAS). Once while using injectable sumatriptan for pain relief during an attack, he fainted (syncope), falling into a position that caused open fracture of the right tibia and fibula. Having undergone orthopedic surgery, the man was asked to classify both pains that had been felt simultaneously. The pain of the cluster headache attack was rated 10 and the pain of open fracture was rated 6 by the patient. Asked to compare the suffering caused by both pains, the patient reported that de headache was much more intense than the pain caused by fracture, and added, using a colloquial expression, in Brazil: "The pain of the fracture was pleasant compared to the pain of cluster headache".

Discussion

Cluster headache pain has been considered one of the worst or even the worst among several causes of intense pain, by patients reports and studies designed for this purpose. Cluster headache will rarely be felt simultaneously with another cause of intense pain. The reported case presents the particularity of having allowed the direct comparison between two concomitant intense painful conditions and cluster headache was considered more intense than the open fracture, confirming what has been widely reported in the literature.

Keywords: Headache disorders; Cluster headache; Pain intensity.

Headache Medicine

Relation between Depression and Anxiety Disorders with Migraine

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introduction

Migraine is a disabling primary headache, characterized by repetitive episodes and often associated with nausea, vomiting, photophobia and phonophobia. Migraine, as a chronic condition, significantly affects patients' quality of life, so that, according to the Global Burden of Disease 2019 study, it is the second biggest cause of disability in the world and the first among young women. It is also worth highlighting the fact that approximately 80% of people who suffer from migraines will be affected by depression and anxiety.

Objective

Review and analyze the correlation between migraines and anxiety and depression.

Methodology

A search for scientific articles was carried out in the LILACS (Latin American and Caribbean Literature in Health Sciences) and SCIELO (Scientific Electronic Library Online) databases, using the descriptors "Migraine Disorders", "Depression" and "Anxiety ", the inclusion criteria were: articles in English, Portuguese or Spanish published in the last 5 years. After analyzing titles and abstracts, 5 articles were included in the present study. Results

The main correlations established were based on: dysregulation of the circadian cycle, which is a risk factor for the development of depression, and which would be very present in patients with migraine, due to fragmented sleep in an attempt to alleviate their symptoms during day; in greater pain intolerance in patients with chronic migraines, who would have less capacity to resist anguish and discomfort and to deal with vulnerable situations, such as social isolation, shame, abuse or insufficient self-control, which would lead to the development of depressive symptoms; in greater sensitivity to stimuli, due to an increase in neuronal excitability, which would be due to a common pathophysiological mechanism of central sensitization in both migraine and depression, a hypothesis corroborated by the fact that medications, such as tricyclic antidepressants, treat both diseases, therefore, it is estimated that this hypersensitivity causes patients to focus more on their bodily sensations and, as a result, they are more susceptible to interpreting certain bodily stimuli as disturbing and catastrophic, and this exacerbated reaction can be related to anxiety and depression; and in dysfunctional eating activities, a thesis supported by two of the articles, according to which the incorporation of certain eating habits would be secondary to depression and anxiety disorders and these habits can trigger headache attacks.

Conclusion

The mechanisms by which migraine is related to depression and anxiety disorders are not yet completely elucidated, however, several significant correlations have been highlighted and it can be speculated that this relation occurs in a multifactorial and reciprocal way, since changes of habits, such as sleep hygiene and diet, can be a result of migraines and also depressive and anxiety disorders, thus, the pathology causing these habits would influence the emergence of the other, in addition, greater intolerance to pain and hypersensitivity to stimuli, which are explanations related to the central nervous system, point to a possible shared mechanism between migraine and depression, suggesting a common pathophysiological basis.

Furthermore, it is worth highlighting the need for more robust studies on the topic.

Keywords: Headaches Disorders; Affective Disorders; Circadian Rhythm; Sleep Disorders.

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Headache Medicine

Understanding the Process Involved in Post-COVID Headache Development and What the Literature Suggests as Therapeutic Approach: A Literature Review

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Categoria: Cefaleias Secundárias

Introduction

After the emergence of SARS-CoV-2, numerous individuals were affected and continue to experience lingering effects, prompting extensive research. Headache, being a common worldwide condition, was observed in the post-COVID-19 context, leading to the identification of a phenomenon known as "long COVID," a wide range of symptoms that arise after recovery from acute SARS-CoV-2 infection, persisting for more than 12 weeks after the onset of the disease.

Significant research in the literature indicates prevalent neurological manifestations in post-COVID- 19 syndrome, whether due to neuroinvasion or systemic infection. Post-infection headache, well- documented and recognized by the International Classification of Headache Disorders, 3rd edition (ICHD-3), gains attention as a complication in this context, due to its potential for moderate to severe intensity and its persistence, which contribute to the resulting disability associated with headache. In this study, we will review what the literature says about this phenomenon and the most recommended therapeutic approaches for these patients. **Objective**

This study was conducted through a systematic literature review, addressing the topic of headache and COVID-19, in the PubMed, Scielo, and UpToDate databases. The parameters used for evaluation include English and Portuguese languages, with publication dates ranging from 2019 to 2023.

Methods

The purpose of this work is to understand the inflammatory process responsible for post- COVID headache, aiming to establish a line of reasoning that facilitates decision-making in the therapeutic approach to these patients by non-specialist physicians. **Results**

Post-COVID condition is not directly related to active viral infection and infectivity but rather to a prolonged pro-inflammatory res-ponse (cytokine storm), which can lead to mast cell hyper-responses, neuroinflammation through IL-6, and overactivation of ACE2 receptors, the same mechanisms associated with tension headaches and migraines. Therefore, SARS-CoV-2 infection shares common mechanisms with the pathophysiology of headaches, supporting the idea that patients with no previous history of headaches may subsequently develop a persistent headache of post-infectious origin. This manifestation may meet the criteria for New Daily Persistent Headache (NDPH), characterized by severe and continuous pain from its onset, following a systemic trigger, and with a phenotype resembling migraine or tension-type headache. In light of this, it has been observed that the therapy for these individuals is based on the inflammatory characteristic of the headache, suggesting the use of common analgesics, non-steroidal anti-inflammatory drugs (NSAIDs) for pain relief, lifestyle changes to reduce stress, and physiotherapy to reduce muscle tension. Furthermore, it is recommended that patients previously diagnosed with headache continue with specific treatment, and for patients diagnosed with post-COVID headache, therapy should be tailored to the subtype that best fits their presentation.

Conclusion

Post-COVID headache is a relatively new condition, and although there are already studies on the subject, they are still very recent, making it challenging to establish defined protocols and treatments for this condition. However, in light of the pathophysiology better established by the data collected to date, it can be understood that this condition originates from an inflammatory process similar to tension headaches and migraines. Therefore, an individualized therapeutic approach for each patient is recommended. Additionally, the use of pain relief medications and the management of precipitating or aggravating factors are also advised. It is further emphasized the importance of research in this area to develop new therapeutic options and personalize treatment for these individuals, aiming to better understand this condition and improve the approach to these patients.

Keywords: SARS-CoV-2; COVID-19; headaches; Migraine Disorders.

Headache Medicine

Therapeutic Approach to Post-Traumatic Headache in Brazil: A Literature Review

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Categoria: Cefaleias Secundárias

Introduction

Traumatic brain injury (TBI) can be considered one of the major problems worldwide, being one of the leading causes of morbidity and mortality among young adults. After a TBI, various symptoms emerge, with headache being the most prominent complaint. It is a complex and challenging condition in Brazil, as it depends on precise diagnosis for proper treatment. In this context, this condition can be classified based on its manifestation: acute, which persists for an average of 3 weeks after the trauma; and chronic, which can last for months to years, depending on the severity of the injury. It can also be stratified as mild, moderate, or severe, and can be exacerbated by other factors such as patient age, location of the TBI, and the patient's pre-existing health, demonstrating its multifactorial nature. Furthermore, it can be inferred that post-traumatic headache has various causes beyond the impact of TBI, including inflammatory processes, neurotransmitter alterations, or even psychological factors such as post-traumatic stress.

Objective

This study aims to analyze the prevalence of different types of post-TBI headaches in Brazil, their impact on the population, and the therapeutic approach suggested by the literature.

Methods

This study was conducted through a systematic literature review, focusing on the topic of post-traumatic headache, using the PubMed and Scielo databases. The evaluation criteria included publications in English and Portuguese, with publication dates ranging from 2018 to 2023.

Results

It was observed that various references define post-traumatic headaches (PTH) as conditions in which individuals experience headaches after cranioencephalic trauma or head injuries. However, this condition is further subdivided into various types, with six common subtypes in the population: post-TBI tension-type headache, post-TBI migraine, post-TBI cervicogenic headache, post-TBI tension-type hybrid headache type II, post-traumatic persistent headache, and post-TBI headache syndrome (PCS). Additionally, it was found that this condition affects more men than women (3:1) and results in functional impairment for approximately one year, after which it usually disappears. However, despite numerous studies, it remains a complex condition that varies significantly among patients, making precise diagnosis and subsequent individualized treatment challenging.

Conclusion

In conclusion, post-TBI headache is an extremely complex condition, subdivided into various types, with multifactorial involvement and different presentations in each individual. It requires an individualized and specific approach. Treatment depends on the type of presentation and the severity of the pain, which may involve pain-relief medications, non-pharmacological methods such as relaxation techniques, physiotherapy, and cognitive-behavioral therapy. In cases with well-defined headache patterns, a specific therapeutic approach for the subtype, such as migraine, may be attempted. However, evaluating patients with PTH remains challenging, as many of them continue to experience headache complaints beyond the one-year period due to the absence of objective findings. This underscores the need for a multidisciplinary approach to PTH treatment. Furthermore, more research in this area is needed to better understand this phenomenon and develop methodologies to assist non-specialist physicians in decision-making.

Keywords: Brain Injuries, Traumatic; Headache; Post-Traumatic Headache.

Headache Medicine

Physical Exercise Strategies as a Therapeutic Alternative for Headache Control: Approaches, Evidence, and Clinical Benefits

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Categoria: Tratamento Preventivo da Enxaqueca

Introduction

Headaches affect numerous people worldwide, causing discomfort and impairing the quality of life. Although many have turned to traditional approaches for headache treatment, the search for effective therapeutic alternatives has grown, with physical exercise emerging as a promising option among these alternatives. In a scenario where pharmacological treatments are still widely adopted for headache control, many individuals are increasingly interested in less invasive approaches with a lower likelihood of side effects. Physical exercises, with their variety of modalities such as aerobics, yoga, and weightlifting, offer an attractive alternative that not only addresses headaches themselves but can also improve the overall health of the individual. As we advance in this field, it is crucial to recognize that physical exercise strategies should not be considered in isolation but as part of an integrated approach to headache treatment.

Objective

The purpose of this study is to investigate the beneficial effects of physical exercise in the treatment of headache disorders.

Methods

This study was conducted through a systematic literature review that addressed the beneficial implications of physical exercise in the control of headache disorders on the PubMed and Scielo databases. The evaluation parameters included English and Portuguese languages, with a publication date range from 2015 to 2023.

Results

It was observed that both therapeutic manipulation and specific exercise significantly reduced the frequency and intensity of headaches, serving as a preventive measure for migraine attacks as they improve the overall quality of life of patients, including improved sleep and reduced stress. The combination of therapies did not show significant superiority but provided additional relief for 10% of the patients. The results demonstrated an effect on moderate and clinically relevant symptoms. These findings support the effectiveness of physical exercise as a valuable therapeutic alternative for headache control and emphasize the importance of integrated approaches in treating this condition.

Conclusion

Therefore, it was observed that physical exercise strategies have proven to be an effective therapeutic alternative in the treatment of headaches, as both therapeutic manipulation and specific exercise resulted in a significant reduction in the frequency and intensity of headaches. Additionally, they contributed to an improvement in the patient's quality of life by reducing stress and enhancing emotional well-being. Furthermore, the combination of therapies, although not statistically superior, offered additional relief to a significant group of patients. These results underscore the importance of considering physical exercise strategies as an integral part of headache treatment. Besides their potential to reduce headaches, physical exercises also have the additional benefit of improving overall health, including cardiovascular health, weight reduction, and muscle strengthening. However, it is crucial to emphasize that each patient is unique, and therapeutic approaches should be personalized to meet individual needs, accompanied by qualified healthcare professionals, as a strategy for the genuine control of this condition.

Keywords: headaches; exercise; quality of life.

Headache Medicine

A Study on Medical Conditions Associated with Primary Headaches and Their Impact on Diagnosis and Treatment

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Categoria: Cefaleias Secundárias

Introduction

Primary headaches are a group of neurological disorders characterized by recurrent headaches, with the most common types being migraine, tension-type headache, and cluster headache. While these conditions are well-known, their diagnosis and treatment can be complex due to their association with various medical conditions. Primary headaches often share symptoms with other diseases, which can lead to misdiagnosis and delays in appropriate treatment. Moreover, certain medical conditions can worsen the frequency and intensity of headaches, making the management of these headaches even more challenging. It is understood, then, that primary headaches are a significant health issue, and their relationship with other medical conditions is crucial for proper diagnosis and treatment. This study aims to uncover the various connections and risk factors associated with the prevalence and impact they have on the clinical approach to individuals with headaches.

Objective

This study aims to investigate the risk factors associated with headaches in individuals.

Methods

A systematic literature review was conducted, focusing on investigating the risk factors associated with headaches in individuals. PubMed and Scielo databases were used as research sources. Our analysis will focus on studies published in English and Portuguese, with a publication range from 2015 to 2023.

Results

This study highlights the need for a more holistic approach to the diagnosis and treatment of primary headaches. Furthermore, understanding the connections between these headaches and other medical conditions is essential to improve the quality of life of patients, as headaches are often accompanied by other physical and/or emotional symptoms. Additionally, when analyzing the studies conducted, it was possible to observe an increasing incidence in age groups of 8 years and older, with several of these studies identifying the following risk factors for headaches: dysfunctional family situation, regular alcohol consumption, caffeine consumption, smoking, low levels of physical activity, physical or emotional abuse, bullying by peers, and lack of free time.

Conclusion

Ultimately, understanding the connections between these headaches and other medical conditions, as well as their risk factors, is essential to improve the quality of life of patients. Moreover, it is of utmost importance to identify the increasing incidence of this condition in certain groups. When considering primary headaches in a broader healthcare context, it is possible to significantly improve diagnosis and treatment, providing relief to patients suffering from these debilitating headaches, provided that healthcare teams manage and understand the various risk factors associated with this condition. Thus, it is essential for healthcare professionals to adopt a more comprehensive and personalized approach to ensure the well-being of individuals suffering from primary headaches.

Keywords: Primary headaches; Quality of life; Risk factors.

Headache Medicine

Evaluation of the impact of psychological and behavioral factors on the presentation of headaches

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introduction

Headache is one of the most prevalent pathologies in the healthcare context, often being a primary motive for seeking medical attention. Furthermore, pain, as defined by the IASP (International Association for the Study of Pain), "is an unpleasant sensory and emotional experience associated with actual or potential tissue damage." In other words, it is a complex concept influenced by biological, psychological, and social factors. Within this framework, it is intriguing to note that the occurrence and etiology of headaches vary among individuals, not only due to variations in symptom severity but also due to intrinsic aspects of the individual's experience. Just as the consumption of certain foods or substances can impact the intensity and frequency of pain, so too can a person's family and personal history. In this context, establishing the relationship between pain and the patient's biopsychosocial aspects can offer insights into various aspects, from improving headache management to reducing episode intensity and even enhancing long-term prevention.

Objective

This study aims to explore potential connections between psychological and behavioral factors and the manifestation of headaches.

Methods

The present study conducted a systematic literature review, focusing on the relationships between key psychological and behavioral factors and the clinical presentation of headaches.

Databases utilized for this review were PubMed and Scielo. The inclusion criteria encompassed articles in English and Portuguese languages published between 1968 and 2023.

Results

Migraine exhibits direct associations with psychological and behavioral factors, with multifaceted explanations for this comorbidity. Among these, there is the recognition of both unidirectional and bidirectional relationships between migraine and depression, indicating that individuals with either condition are prone to developing the other. Moreover, genetic predisposition plays a role in the shared link between migraine and psychiatric disorders.

Individuals with Generalized Anxiety Disorder (GAD) are up to 5 times more likely to experience migraines than the general population. Studies conducted in Canada have demonstrated that the likelihood of individuals with migraine also having GAD is twice as high as in those without this condition. Additionally, research has revealed a higher prevalence of depression among migraine patients, serving as a risk factor for the chronicization of this condition, although the incidence varies significantly within a range of 8% to 48%. Furthermore, an association was observed between migraine patients and difficulties in both initiating and maintaining sleep.

Conclusion

In summary, the robust correlation between migraines and psychological factors, including depression and Generalized Anxiety Disorder (GAD), involves intricate bidirectional relationships. Genetic factors contribute to this linkage, and the elevated occurrence of depression among migraine sufferers complicates their management. Additionally, migraines can significantly disrupt sleep patterns, underscoring the significance of holistic approaches to diagnosis and treatment that consider both the physical and psychological dimensions of the condition.

Keywords: Headache disorders; Migraine; Social factors; risk factors.

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Headache Medicine

Headache in Primary Care: Prognosis and Treatment - A Literature Review

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction

Headache is an extremely common symptom in the general population. This symptom, in turn, has distinct categories, classified as primary and secondary, based on their causes. Primary headaches are those without an identifiable specific cause, while secondary headaches result from specific organic conditions, originating within the skull or associated with systemic problems, such as cardiovascular or psychiatric conditions. Moreover, headache is one of the main reasons people seek medical attention and is part of the daily activities of healthcare teams, whether patients come in spontaneously or during previously scheduled appointments, representing a frequent reality in Primary Health Care (PHC) in Brazil.

Objective

This work aims to analyze the role of the Brazilian Unified Health System (SUS) in the prognosis and treatment of headaches in primary care in Brazil.

Methods

This study uses the systematic literature review method, addressing the topic of headaches in PHC, using the PubMed and Scielo databases. The evaluation parameters include English and Portuguese languages, with publication dates from 1994 to 2023.

Results

In Brazil, the annual prevalence of migraine is 15.8%, affecting approximately 22% of women and 9% of men, with the highest prevalence among individuals aged 30 to 50. Furthermore, among the various categories of headaches, migraine and tension-type headache are conditions influenced by gender and age, being more common in women and less prevalent in older age groups. The predominance in women can be attributed to clinical factors associated with female hormones. There is no clear evidence of any connection between sociodemographic factors and the occurrence of migraine or tension-type headache. Tension-type headache is correlated with various psychosocial variables, while migraine does not show this evident relationship. Thus, it is essential to highlight that primary care plays a crucial role in addressing these situations because it is at this level of care that prevention, early diagnosis, and proper management of these conditions can be effectively carried out. The prognosis of headaches can vary significantly depending on the specific type of headache, its underlying cause, and how it is treated, which, if effectively managed, contributes to improving the quality of life for patients.

Conclusion

In the Brazilian territory, the annual incidence rate of a specific type of headache called migraine affects approximately 15.8% of the population, impacting around 22% of females and 9% of males. It is important to emphasize that primary health care plays a fundamental role in addressing and treating conditions associated with various etiologies of headaches. Regular monitoring, prognosis, and proper guidance of patients by healthcare professionals in primary care can significantly contribute to symptom relief and improved quality of life for individuals affected by these types of headaches.

Keywords: Headache; Primary Care; Primary Headaches; Secondary Headaches.

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Headache Medicine

Clinical Aspects and General Manifestations of Migraines in the General Population - Literature Review

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction

Headache, or head pain, is a chronic condition with a significant impact on public health, negatively affecting various aspects of life including social interactions, personal well- being, and work performance. It is the most common neurological complaint and a frequent reason for medical consultations at primary healthcare levels in Brazil, accounting for approximately 9% of these consultations. Headaches can originate from various sources, including structural problems, systemic or functional issues, some of which may have serious potential. In 1988, the International Headache Society categorized headaches into 6 different etiological categories: primary, originating from dysfunction in the head region itself and not resulting from other pathological conditions, and secondary, merely a symptom resulting from some other structural problem. Among the primary types, tension-type headache, migraine, and cluster headache are prominent. Understanding this scenario, it is known that migraine is one of the primary headache types worldwide, occurring in intermittent or prolonged episodes, with signs and symptoms typically lasting from 4 to 72 hours and often being debilitating. The pain usually affects one side of the head, has a pulsating character, worsens with physical activity, and is accompanied by symptoms such as nausea and increased sensitivity to light, sound, or odors. The diagnosis of this condition primarily relies on clinical evaluation, representing a frequent and evidently recurrent reality in various medical consultation scenarios.

Objective

This work aims to explore new therapies and innovations in the management of complications associated with migraines.

Methods

This study employs a systematic literature review method to address the topic of exploring new therapies and innovations in the management of complications associated with migraines, using the PubMed and Scielo databases. The evaluation parameters include English and Portuguese languages, with publication dates from 2000 to 2023.

Results

The significant worldwide diversity in migraine occurrence rates is a matter of curiosity. Geographical factors may be responsible for this variation, but after analyzing existing studies, it can be concluded that there is no consistent pattern indicating that a specific region consistently has higher rates of migraines compared to others. Furthermore, the observed characteristics of migraines, such as throbbing or pulsating pain and difficulties in daily activities, in the studied sample align with documented literature. Finally, it is noteworthy that women have a higher risk of developing migraines compared to men, a result widely accepted in the literature and attributed to hormonal fluctuations women experience throughout their menstrual cycle.

Conclusion

Migraines are complex and debilitating symptoms that significantly impact the quality of life for many individuals. This study revealed the absence of consistent geographical incidence patterns, emphasizing the importance of innovative therapeutic approaches. Additionally, the influence of hormones in women and the presence of various associated disorders, such as insomnia, should be considered regarding the incidence of this condition.

Keywords: Migraine; Public health; Primary headache.

Headache Medicine

Headache in Children and Adolescents: Challenges in the Treatment

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Categoria: Cefaleias em Crianças e Adolescentes

Introduction

Headache is a common complaint reported by children and adolescents. It is estimated that 60% of children and adolescents experience headaches, and around 8% have migraines, causing impairment in both academic performance and quality of life. To diagnose headaches, it is necessary to obtain a detailed medical history and perform a comprehensive physical examination. Concerning the detailed medical history, children under 6 years of age often struggle to provide details about their headache history, requiring parental involvement to provide most of the information. In the case of adolescents, they typically provide a complete headache history, with minimal parental assistance, and parents may be excluded from the consultation to investigate alcohol and drug use.

Objectives

To review and to summarize challenges in the treatment of children and adolescents presenting headache based on a critical and up-to- date analysis of existing literature.

Methods

This study is an integrative literature review. Was used a search engine with the DeCS/MeSH descriptors "Headache," "Pediatric," and "Treatment" in the PubMed, ScienceDirect, and BVS databases. The period covered was from 1998 to 2023. In this way, 289 articles were found, according to inclusion criteria, in English, Portuguese, or Spanish, with full-text availability. In the end, 100 articles were analyzed, of which 8 were selected for this review.

Results

Based on the analysis of the articles, it is evident that the quality of life of pediatric and adolescent patients can be improved through the application of preventive treatment for acute migraine episodes. The treatment of migraines can be divided into two categories: preventive treatments and acute treatments. Regarding preventive treatment, it has been found that approximately 60% of children and adolescents improve with a three-pronged approach: 1 - counseling on lifestyle management (including sleep, exercise, hydration, caffeine, and avoiding skipping meals); 2 - acute therapy with optimal dosing, specifically non-steroidal anti-inflammatory drugs and triptans; and 3 - preventive treatment with some evidence of efficacy. As for acute treatment, most episodes are managed on an outpatient basis. Since acute medications are more effective when taken while the pain is still mild. It is generally recommended that families and adolescents have these medications readily available. This review also demonstrated that new routes of administration, such as transdermal absorption, can be explored to enhance the acceptance of pharmacological treatment at home, in addition to the need to assess the prevalence of the placebo effect in clinical trials with pediatric patients. The introduction of a stable sleep schedule (averaging 8 hours), regular aerobic exercise, and a balanced diet serve as complements to pharmacological therapy.

Conclusion

The integrative treatment approach for migraine in pediatric and adolescent patients holds promise for improving quality of life. In addition to traditional pharmacological treatments, new administration routes may offer more accessible solutions. The incorporation of healthy habits, such as adequate sleep, regular exercise, and a balanced diet, complements pharmacological treatment. Cognitive-behavioral therapy also stands out as an effective resource, especially for adolescents with chronic migraines. This comprehensive approach can provide a more positive prognosis, surpassing results achieved with medication alone or isolated lifestyle changes.

Keywords: Headache; Pediatric; Treatment.

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Headache Medicine

Mechanisms of Neuromodulation in Headache: A Literature Review

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Categoria: Neuromodulação na Cefaleia

Introduction

The neuromodulation is a growing area in pain medicine that encompasses both invasive and non-invasive electrical therapies. Some types, such as occipital nerve stimulation and transcranial stimulation have been studied to treat patients with headache, yet the results are optimistic and they are inconclusive.

Objective

To assess clinical efficacy of neuromodulation as potential treatment of headache based on a critical and updated analysis of literature.

Methods

The present study is an integrative literature review. Was searched through the DeCS/MeSH descriptors "Headache", "Neuromodulation" and "Cluster Headache" for the search in the PubMed, ScienceDirect and BVS databases. The period was from 1998 to 2023. 333 articles were found according to the inclusion criteria: language in English, Portuguese and Spanish, free text in full. In the end, 100 articles were analyzed, of which 6 were selected to compose the present review.

Results

This review focuses on neuromodulation therapies for treatment of primary headaches. Single- pulse transcranial magnetic stimulation and supraorbital nerve stimulation are identified as effective abortifacient treatments for episodic migraine, while initial positive evidence suggests their potential in preventing chronic migraine, is also recommended for symptomatic treatment of migraine and as a preventive treatment for cluster headache. In addition, external vagus nerve stimulation has demonstrated efficacy in the acute treatment and in the prevention of cluster headaches, continuous hemicranial headaches, and paroxysmal. Spinal cord stimulation compared to conventional medical management, appears to be more effective in cases of neuropathic pain in patients with spinal surgery failure syndrome. In general, noninvasive neuromodulation offers better tolerability due to the absence of systemic side effects and drug interactions, although pain intensity is not affected significantly. On the other hand, invasive approaches require multidisciplinary discussions and specialized teams in functional neurosurgery. Despite the notable advantages, neuromodulation techniques should be reserved for patients with headaches refractory to pharmacological treatments and still face barriers to being put into practice. Limitations include the difficulty of producing reliable data in clinical trials, the high cost of the devices, and the need for more randomized control trials to evaluate long-term efficacy.

Conclusion

There is evidence of existing efficacy for the different neuromodulation interventions in regard to the acute and chronic treatment and prevention of the various classes of headaches described in the literature. The non-invasive methods showed better adherence due to the absence of systemic side effects and pharmacological interactions and reduction in headache frequency. The notable advantages of these techniques are highlighted, but it is emphasized that they should be reserved for patients with headaches refractory to conventional treatment. Finally, it is pointed out that numerous barriers and limitations still need to be overcome for these techniques to be put into daily practice, but it has been shown to be a promising therapeutic alternative.

Keywords: Chronic Pain; Electric Stimulation Therapy; Headache; Neurology.

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Headache Medicine

Mechanisms of Neuromodulation in Headache: A Literature Review

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Categoria: Neuromodulação na Cefaleia

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Objective

To assess clinical efficacy of neuromodulation as potential treatment of headache based on a critical and updated analysis of literature.

Methods

The present study is an integrative literature review. Was searched through the DeCS/MeSH descriptors "Headache", "Neuromodulation" and "Cluster Headache" for the search in the PubMed, ScienceDirect and BVS databases. The period was from 1998 to 2023. 333 articles were found according to the inclusion criteria: language in English, Portuguese and Spanish, free text in full. In the end, 100 articles were analyzed, of which 6 were selected to compose the present review.

Results

This review focuses on neuromodulation therapies for treatment of primary headaches. Single- pulse transcranial magnetic stimulation and supraorbital nerve stimulation are identified as effective abortifacient treatments for episodic migraine, while initial positive evidence suggests their potential in preventing chronic migraine, is also recommended for symptomatic treatment of migraine and as a preventive treatment for cluster headache. In addition, external vagus nerve stimulation has demonstrated efficacy in the acute treatment and in the prevention of cluster headaches, continuous hemicranial headaches, and paroxysmal. Spinal cord stimulation compared to conventional medical management, appears to be more effective in cases of neuropathic pain in patients with spinal surgery failure syndrome. In general, noninvasive neuromodulation offers better tolerability due to the absence of systemic side effects and drug interactions, although pain intensity is not affected significantly. On the other hand, invasive approaches require multidisciplinary discussions and specialized teams in functional neurosurgery. Despite the notable advantages, neuromodulation techniques should be reserved for patients with headaches refractory to pharmacological treatments and still face barriers to being put into practice. Limitations include the difficulty of producing reliable data in clinical trials, the high cost of the devices, and the need for more randomized control trials to evaluate long-term efficacy.

Conclusion

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Keywords: Chronic Pain; Electric Stimulation Therapy; Headache; Neurology.

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Headache Medicine

Impact of Headache on Quality of Life: A Multidimensional Analysis

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Categoria: Fatores Psicológicos E Comportamentais No Manejo Das Cefaleias

Introduction

Headache, a pervasive symptom prompting numerous neurology consultations and accounting for 9% of Primary Care visits, stands as a pressing public health concern. Its persistent or chronic nature has far-reaching implications for the quality of life of those afflicted, transcending mere physical discomfort. This impact reverberates across occupational, economic, and social spheres. A meticulous clinical diagnosis, essential for excluding alternative etiologies and categorizing the headache type, guides tailored approaches to symptom alleviation and, consequently, quality of life enhancement. Treatment options encompass both pharmacological and non-pharmacological modalities, individualized to meet each patient's unique needs.

Objective

The article aims to conduct a multidimensional analysis, using scales, regarding the impact of headache on the quality of life of affected patients.

Methods

This study is an integrative literature review, which searched through the DeCS/MeSH descriptors "Headache" and "Quality of life" in the PubMed, ScienceDirect, and BVS databases. The period covered was from 1998 to 2023. In this way, 274 articles were found, according to inclusion criteria, in English, Portuguese, and Spanish languages, with full-text availability. In the end, 100 articles were analyzed, of which 10 were selected to compose this review.

Results

The European Quality of Life Assessment - Visual Analog Scale (EuroQoL-VAS), EuroQoL- VAS19, and a questionnaire specific to migraine, the Migraine-Specific Quality of Life (MSQ), were also used. The investigation revealed that patients with chronic headache had lower scores in terms of bodily pain and social functioning when compared to those with clinically refractory headache or migraine. The research also demonstrated significantly negative differences in quality of life scores when comparing the general population to those suffering from chronic or refractory headache. The impact of headaches on daily activities was assessed through questionnaires such as the Headache Impact Test (HIT-6) and the Migraine Disability Assessment (MIDAS), which showed negative and disabling results for this population with headaches. Another sample showed a higher comorbidity with anxiety and depression. Furthermore, the results indicated a high level of daily life restrictions, especially during active cluster periods. They also experienced restrictions in participating in family, work, or social activities. Due to these incapacities, many lost their jobs or retired early. Regarding the use of medical services, patients with headaches had higher utilization rates compared to the general population.

Conclusion

Notably, individuals afflicted with chronic headaches exhibited markedly lower scores in bodily pain and social functioning, when compared to those with clinically refractory headache or migraine. Moreover, the comparison between headache sufferers and the general population unveiled significant negative differences in quality of life scores. The debilitating consequences of headaches on daily activities were corroborated through the application HIT-6 and MIDAS, revealing profound negative impacts on this population. This, regrettably, translated into job losses and early retirements for many individuals grappling with chronic headaches. This comprehensive review substantiates the urgent need for other management approaches that encompass not only pharmacological interventions but also psychosocial support and patient education. It is only through such multifaceted strategies that we can aspire to alleviate the pervasive suffering endured by headache patients and enhance their overall quality of life.

Keywords: Headache; Life quality; Migraine.

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Headache Medicine

Correlation between headache and psychiatric disorders: A narrative review

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Categoria: Fatores Psicológicos E Comportamentais No Manejo Das Cefaleias

Introduction

Psychiatric comorbidities, including depression, anxiety, and bipolar disorder, play a crucial yet sometimes neglected role in headache treatment. These psychological factors can trigger and exacerbate headache episodes, leading to a worse prognosis. While the intricate mechanisms connecting headaches and psychiatric disorders remain speculative, it's evident that the presence of psychiatric conditions impacts the outcome of various headache subtypes.

Objective

This literature review aims to provide a comprehensive analysis of existing data, enhancing our understanding of this correlation and guiding more effective prognosis and treatment strategies.

Methods

This study is a literature review that used the DeCS/MeSH descriptors "Headache" and "Psychiatric Disorders" to search the PubMed, ScienceDirect, and BVS databases. The period was from 1998 to 2023. A total of 274 articles were found, according to the inclusion criteria, which were in English, Portuguese, or Spanish, and had full text available for free. In the end, 100 articles were analyzed, of which 10 were selected to compose this review, four of which were systematic reviews.

Results

Of the ten studies selected for review, three associated a higher prevalence of depression and anxiety disorders in individuals with migraine compared to the general population, two found an association between migraine and bipolar disorder, especially bipolar type II, and one also reported that carriers of sleep disorders and post-traumatic stress disorder are more likely to suffer from migraine. A systematic review associated headache in children with family conflicts, unhappiness, stressful environments, and adverse events, especially bullying, with emotional abuse during childhood being a risk factor for chronicization. Patients with wake bruxism are 5 to 17 times more likely to have tension-type headaches.It has been noted that patients with mutations for Familial Alzheimer's Disease have more headaches than patients without mutations. It has been concluded that cognitive behavioral therapy, which is commonly used as a tool in the treatment of psychiatric disorders, significantly reduced headache frequency with few adverse effects. In addition, transcranial magnetic stimulation showed moderate evidence for the treatment of headache. Headache and psychiatric disorders, such as depression and anxiety, often co-occur, meaning that a person who experiences headaches is more likely to also have a psychiatric disorder. Treatment may involve medications to relieve headache pain and medications or therapy to address psychiatric disorders, depending on the individual needs of the patient. Additionally, complementary therapies, such as cognitive-behavioral therapy, may be beneficial for patients with this comorbidity.

Conclusion

In summary, a clear and bidirectional correlation exists between headache and psychiatric disorders. The presence of one can elevate the risk of developing the other, with shared environmental and genetic factors contributing to this link. Notably, treatments for psychiatric disorders have demonstrated effectiveness in alleviating chronic headache symptoms. Hence, when treating patients with either condition, it is crucial to consider and address both the headache and the associated psychiatric condition

Keywords: Chronic Pain; Headache; Neurology; Psychiatry; Psychiatric Disorder.

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Headache Medicine

Sentinel Headache as a Prodrome of Aneurysmal Rupture: a Systematic Review

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Categoria: Cefaleias Secundárias

Introduction

The Sentinel Headache (SH) is a secondary headache known for sudden onset, and duration of hours or days. It can be the thunderclap type or a change in the usual headache pattern. Usually precedes a subarachnoid hemorrhage (SAH) in days or weeks and can have multiple etiologies, like intracranial aneurysm rupture (IAR).

Objective

Describe the epidemiology, temporality, headache pattern, rebleeding odds, and the ability to recognize the SH as a prodrome of IAR based on a systematic literature review.

Methods

A search was performed using the descriptors "Sentinel Headache" AND ("aneurysm" OR "intracranial aneurysm" OR "aneurysm rupture" OR "ruptured aneurysm") in the databases PubMed, Scopus, and ScienceDirect. There was no date limit. Grey literature was not researched. Only observational studies, like cohort, transversal, and case control were selected. Other etiologies related to SH, intervention studies that analyzed only radiologic features, and reviews were excluded. The article selection was made independently by 2 authors with a high concordance index (k=0,967). The checklist of Prisma 2020 was followed. Rayyan app was utilized to organize the articles by peer analysis. After duplicate exclusion, 60 articles remained.They were screened by title (25 exclusions) and abstract (26 exclusions), and 9 were included in the review.

Results

The 9 selected studies estimated the incidence of SH in SAH cases by IAR. Two of them were retrospective based on medical records analysis with an incidence ranging from 6-13,8%, with the possible bias of forgetting or not asking about SH. Another 7 studies made the same evaluation by questioning the patients or their family members about thunderclap headaches or changes in headache patterns before the IAR. The incidence of SH in these studies ranged from 17,3 - 47,5%, in line with a 2003 systematic review that estimated this incidence to be between 10-43%. In a study, of the 148 cases with possible SH, 37 (25%) were due to SAH, with IAR being confirmed in 21 (14,2%) of these cases. Of the IAR confirmed cases, 6 did not perform the cranial CT scan, 6 had a normal result, and 4 evolved to death before the exam. Distinct temporality definitions of SH corroborate the heterogeneity of available epidemiological data.Two studies analyzed the average length of days before the IAR with the presence of SH, with an average of 5 days and 10,6 days, with 91,7% occurring within 30 days before the SAH. Two other studies analyzed the SH pattern within 3 months before the SAH caused by IAR. One found a thunderclap pattern in 7 (17,5%) of 40 patients, changes in headache pattern in 11 of 31 patients who presented chronic headache, and the onset of new headache in 3 (7,5%) patients.This was the only study to analyze the headache pattern according to International Headache Society. The other found that out of 91 patients with SAH, 24 presented SH; 13 (54,2%) described a throbbing headache, 10 (41,6%) reported an explosive headache, and 1 (4,2%) described a heavy headache. Only 9 (37,5%) of these sought medical care, of which 6 (66,7%) were submitted to a cranial CT scan with normal findings and without a vessel study, essential to early identification of the aneurysm. Two studies analyzed the SH and the bleeding risk with different findings. One found a rebleeding chance 10 times higher before the obliteration of the aneurysm in patients who previously had SH compared to those without SH. However, other study did not show statistical significance in the increased risk of rebleeding among patients who presented SH.

Conclusion

SH is commonly associated with IAR, preceding the event in about a month in most cases. The recall bias is a limitation that can discord the real incidence of SH. There is a need for more studies to evaluate the relationship between SH and IAR and rebleeding. The knowledge of SH by the physician is relevant, once the early aneurysm diagnosis can reduce morbimortality.

Keywords: Sentinel headache; Aneurysmal; Subarachnoid hemorrhage.

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Greater Occipital Nerve Block in Migraine: Efficiency and Safety, a Systematic Review

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Categoria: Tratamento Agudo da Enxaqueca

Introduction

Migraine is a complex neurological disorder that can significantly impact the quality of life of many individuals. This condition can cause debilitation, intense pain, nausea, and high sensitivity to light and sound. Therefore, the study of techniques that enable the management of migraines represents an important measure for promoting the well-being of patients.

Objective

To investigate the efficacy and safety of the greater occipital nerve block technique in treating migraine.

Method

The established inclusion criteria included articles published from 1996 to 2023, utilizing the DeCS/MeSH descriptors "greater occipital block," "headache," and "treatment." These terms were combined using the Boolean operator "AND" for searches on the PubMed and Web Of Science platforms. The findings of these analyses have been compiled for the purpose of this review.

Results

Among the one hundred and eight articles obtained through the methodology, twelve were selected and subsequently analyzed by two different authors, following the PRISMA recommendations. In a study involving 55 patients with severe migraines, the greater occipital nerve (GON) block with lidocaine and triamcinolone demonstrated effectiveness in reducing the frequency of migraine attacks by 5.7 per month (p=0.002). This treatment was also more effective in cases of chronic migraines, showing significant reductions of approximately 60% in intensity (p=0.001) and 40% in attack frequency (p=0.001). The greater occipital nerve block is a promising option for the treatment of acute migraines in emergency departments, with a 64% reduction in pain perception 5 minutes after the application, without severe adverse effects. Both unilateral and bilateral techniques showed similar effectiveness, with 74% of patients undergoing 2 GON blocks having a significant response, compared to 36% of patients who received only 1 GON block. Side effects were mild and did not differ between groups, with only 4.5% of patients experiencing vasovagal symptoms during the injections, but no severe adverse effects were observed. The greater occipital nerve block with lidocaine is a safe alternative for patients with persistent moderate to severe headaches, with a rapid effect observed in 31% of patients after 30 minutes (p=0.035). Some disparities in results may be attributed to different studied populations, professional skills, and placebo effects.

Conclusion

The greater occipital nerve block is an effective technique for treating migraines, showing benefits for both acute pain episodes and chronic headache situations. Moreover, this technique has been proven safe for patients, with no severe side effects observed in any of the analyzed studies, and only a few mild side effects reported. Lastly, it's important to consider that disparities in results among some of the studies may be related to population differences, variations in healthcare professionals' skills, and placebo effects in some cases.

Keywords: migraine; treatment; review.

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Headache Medicine

The common pathophysiology between migraine and cluster headache: a literature update

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Categoria: Fisiopatologia Das Cefaleias - Ciência Básica

Introduction

In accordance with the International Classification of Headache Disorders, migraine and cluster headache are two primary headaches that are distinguished clinically but share common pathophysiological mechanisms. These mechanisms are important for the pharmacological treatment of these disorders, including triptans and anti-CGRP monoclonal antibodies.

Objective

To investigate and update literature data on potential similar mechanisms involved in the pathology, structure, and neural physiology of migraine and cluster headache.

Method

The established inclusion criteria included articles published from 2016 to 2023, using the DeCS/MeSH descriptors "cluster headache," "migraine," and "pathophysiology." These terms were combined using the Boolean operator "AND" for searching the PubMed database. Following these criteria, eight articles were selected from a total of sixty-four results and subsequently analyzed for the purpose of this review.

Results

While the exact mechanisms underlying migraine and cluster headache are not yet fully understood, there are clear pathophysiological links between these two disorders involving the Trigeminovascular System (TVS), in which three key structures interact with cortical areas as well: the trigeminocervical complex, trigeminal autonomic reflex, and the hypothalamus. In the trigeminocervical complex, nociceptive fibers originating from the trigeminal ganglion and intracranial blood vessels in the meninges and cerebral arteries project signals to the Trigeminal Cervical Complex (TCC). These projections terminate on the neurons of the trigeminal brainstem nuclear complex, transmitting somatosensory information to the thalamus and hypothalamus.

These structures then reach cortical areas involved in pain processing. The trigeminal autonomic reflex is the connection between the trigeminal caudal nucleus and the superior salivatory nucleus, constituting a parasympathetic vasodilator pathway. Neurons from the superior salivatory nucleus project to cranial blood vessels, including the dura mater, directly contributing to the cranial autonomic symptoms found in cluster headache and up to 50% of migraine patients. Activation of this pathway induces dilation of intracranial vessels and a cascade of events that results in plasma protein extravasation, release of neuropeptides, and activation and sensitization of the trigeminal vascular system. Regarding the hypothalamus, specifically the paraventricular and lateral nuclei, it has significant connections in pain regulation in migraines and cluster headaches. This is evident through MRI studies that have shown increased gray matter volume in the hypothalamus during headache periods in cluster headache and migraine patients. Deep brain stimulation of the posterior hypothalamus has been used to treat refractory cluster headaches, with positive outcomes in about 60% of patients.

Conclusion

Understanding new conceptions about the physiopathological relationships between migraine and cluster headache is of fundamental importance for patient management by physicians and for the development of therapeutic mechanisms that provide a better quality of life for individuals suffering from these disorders.

Keywords: pathophysiology; cluster; migraine; update.

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Headache Medicine

Dialysis-Associated Headache in Brazil: a narrative review

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Categoria: Cefaleias Secundárias

Introduction
Patients undergoing dialysis are subject to many possible complications, with dialysis- associated headache being one of the more common ones. This condition is described in ICHD-3 as a headache without specific traits, that occurs during and due to hemodialysis. However, some aspects of this harmful disease to the quality of life of those patients are still obscure, a situation that demands additional investigations about this topic.

Objective
To review the knowledge produced in Brazil about dialysis headache and its characteristics, epidemiology, pathophysiology, clinical manifestations, diagnosis and treatment.

Methods
Searches for the terms "dialysis headache" and "Brazil" were conducted in the Pubmed database. 17 articles were retrieved, with 6 of them being chosen for the review as they had the most relevant information on the disease.

Results
Dialysis headache occurs in 28 to 73% of dialytic patients. Recent studies point that this type of headache has a stronger association with patients that are women, have higher schooling levels, are undergoing hemodialysis for a longer length of time and have a history of primary headaches, such as migraine and tension-type headache, and psychiatric diagnoses, such as anxiety and depression. Almost all patients in dialysis with high impact headaches are stricken with dialysis headache. Its pathophysiology is subject of controversy, as many possible mechanisms, such as variations in blood urea, sodium, magnesium and arterial pressure, the dialytic disequilibrium syndrome, arterial hypotension, high CGRP (calcitonin gene- related peptide) levels, and the production of nitric oxide are cited. The involvement of the blood-brain barrier with associated cerebral edema due to changes to the osmotic gradient during dialysis is a possibility. A reduced pulsatility index at the median cerebral arteries bilaterally was reported on transcranial doppler examination of patients with active dialysis headache, suggesting that vasodilation has an important role in the development of this disease. Clinically, it's a throbbing headache with a typically insidious start, mean intensity of 6.7/10 with a standard deviation (SD) of ±2.1, and mean duration of 215.2 (SD: ±429.2) minutes, associated, in greater to lesser degrees, with nausea, phonophobia, photophobia, vomiting, worsening through exercise, aura and autonomic signs. Its pattern is typically tension-type, but it can also be migraine- like. It occurs mainly bilaterally, diffusely or in temporal areas. It usually happens after two hours of dialysis, and ends approximately 180.4 (SD: ±421.1) minutes after the end of the session. Dialysis headache is usually treated with intravenous dipyrone and paracetamol, presenting good results in some cases, even though this treatment isn't backed by any trials. Angiotensin converting enzyme inhibitors were once used to treat dialysis-associated headache episodes with little success. Apparently, dialysis headache tends to become less frequent and less intense over the months.

Conclusion
Even though certain aspects of dialysis headache are well described in literature, its pathophysiology is still wrapped in uncertainty and its most common treatment doesn't have solid evidence backing it yet. Moreover, our research was not capable of finding an association with the manifestation of dialysis headache and chronic kidney disease prognosis. Therefore, new and more complete studies are deeply needed to fill the gaps in the knowledge about this recurrent complication of dialysis. Furthermore, as it's a narrative review, it wasn't possible to exclude selection bias in this study.

Keywords: Dialysis; Headache; Dialysis Headache; Brazil.

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Headache Medicine

The use of medications for the treatment of headache during pregnancy and its consequences: a literature review

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Introduction
Pregnancy represents a period characterized by a series of physiological changes in both the maternal and fetal bodies. These alterations often result in discomfort and occasionally painful experiences, potentially leading to the development of new clinical conditions. Headaches, a common health issue, are no exception within this spectrum. However, it is crucial to acknowledge that these morphological transformations also significantly influence how the body metabolizes, absorbs, and distributes drugs, subsequently affecting the body's response to medications. Additionally, it is important to emphasize that certain substances can cross the placental barrier during pregnancy, directly impacting fetal growth and development. Moreover, depending on the gestational stage, medication excretion through breast milk can affect the infant's well-being. In this intricate and delicate context, every therapeutic decision must be meticulously evaluated. Nevertheless, it is worth noting that there is a scarcity of pharmacological research in this specific context, primarily due to ethical and biological constraints posed by the aforementioned situations. The urgency to expand knowledge in this field is evident, given the imperative need for safer and more effective approaches to managing headaches in pregnant women.
Objective
This study aims to assess the implications of utilizing medications for headache treatment in pregnant patients.
Methods
The present study conducted a systematic literature review in September 2023, focusing on headaches and the repercussions of drug usage for prophylactic and acute treatment in pregnant women. The research was conducted using the PubMed database with the keywords "Headache Disorders" and "Pregnancy" as descriptors. Inclusion criteria comprised articles in English and Portuguese languages published between 2013 and 2023.
Results
During pregnancy, non-pharmacological treatments are preferred; however, in specific cases, medication use is warranted, but it should be administered at the lowest effective dosage. Analysis of the studies confirms that several drugs used in headache treatment exhibit teratogenic effects, the mechanisms of which are not yet fully elucidated but are primarily hypothesized to involve antagonistic interactions with folic acid and the generation of free radicals and oxidative stress. Notably, non-steroidal anti-inflammatory drugs may lead to first-trimester abortion and third- trimester prematurity and are safer when used during the second trimester. Moreover, steroid anti- inflammatory drugs should be avoided in the first trimester. Among anticonvulsant medications, valproic acid is associated with neural tube defects, heart defects, and urinary tract defects, while topiramate carries a potential risk of low birth weight. In contrast, recommended drugs during pregnancy do not pose a risk of congenital defects and have fewer overall risks. This category includes Lamotrigine and Levetiracetam.
Conclusion
In summary, the management of headaches in pregnant women is a complex endeavor that prioritizes non-pharmacological treatments whenever feasible during pregnancy. When medication usage becomes imperative, it is crucial to carefully weigh potential risks, as many drugs are linked to adverse effects that are not yet fully understood. For instance, non-steroidal anti-inflammatory drugs may be associated with first-trimester abortions and third-trimester prematurity when used during pregnancy. Therefore, maternal-fetal safety should be the primary consideration when selecting headache treatments for pregnant women, with continual updates to clinical guidelines to ensure high-quality care that minimizes risks to the health of both pregnant women and their infants.

Keywords: Headaches; Pregnancy; Medications; Adverse effects.

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Headache Medicine

Symptomatology of Central Sensitization in Subgroups of Migraine

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Categoria: Comorbidade das Cefaleias Primárias

Introduction
Central sensitization (CS) is highly prevalent in individuals with migraine. It has been proposed that an increase in sensitization mechanisms may play a key role in the chronicity of migraine, since with increased sensitization, there is a greater susceptibility to the next migraine attack, leading to a vicious circle, in which the increase in the frequency of headache becomes a risk factor for migraine chronification. Even with the evidence of presence of CS in migraine patients, the relationship between central sensitization and the frequency of migraine is still being discussed.

Objective
To assess if the presence of CS-related symptoms measure by Central Sensitization Inventory (CSI) questionnaire, differs according to migraine subgroups: migraine without aura (MoA), migraine with aura (MA), and chronic migraine (CM).

Methods
The local Research Ethics Committee (5,253,045/2022) approved this cross-sectional study. One hundred and five individuals diagnosed with migraine according to the third edition of the International Classification of Headache Disorders were recruited. Sociodemographic data were collected, along with clinical features of migraine and the CSI questionnaire, which scores from 0 to 100 and was developed to assess signs and symptoms related to central sensitization. The clinical characteristics of the individuals were analyzed through the mean and standard deviation (SD) for each group. Data normal distribution was verified, in addition to the homogeneity of variances, to determine the best statistical test to be performed. A posteriori, Welch's ANOVA, and Games-Howell Post-hoc Test were performed to verify the differences between the CSI mean score in migraine subgroups. Levene's test was performed to verify the homogeneity of the variances of the groups, and it was found that the variance of the groups is not homogeneous. Thus, a Welch's ANOVA was performed to verify the difference in CSI' scores between the migraine subgroups [$F(2, 64.673) = 10.827$; $p < 0.001$].

Results
The evaluated individuals had a mean age of 33.8 (SD=9.1), 36.6 (SD=10.1), and 40.1 years (SD=9.7) for the MoA, MA, and CM groups, respectively. Mean attacks frequency was 11.7 (SD=7.4), 8.8 (SD=5.7), and 20.1 (SD=11.7) for the MoA, MA, and CM groups, respectively. The MoA group presented a mean CSI score of 47.8 (SD=17.7), the MA group 46 (SD=14.2), and the CM group 58.6 (SD=10.2), $F(2, 64.673) = 10.827$; $p < 0.001$]. The Games-Howell Post-hoc Test showed that the CM group has 10.7 ($p=0.008$) points more in the CSI score when compared to the MoA group and has 12.5 ($p<0.001$) points more than the MA group. The difference between the MoA and MA groups was not significant, 1.7 points ($p= 0.889$).

Conclusion
The CM group presents more CS-related symptoms than the MoA and MA groups. There was no difference between the MoA and MA groups. These results suggest that chronic migraine exhibits more sings of CS than the episodic migraine. Furthermore, the presence of the aura does not seem to influence the symptoms of sensitization.

Keywords: Migraine Disorders;Headache Frequenc;Central Sensitization.

Headache Medicine

Pharmacological Treatment of Headache

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Categoria: Fisiopatologia das Cefaleias - Ciência Básica

Introduction
Headache, or cephalgia, is a common health issue affecting millions of people worldwide. There are various approaches to treating headaches, including the use of medications. This summary discusses pharmacological strategies for the treatment of headache, highlighting the most common types of drugs and their efficacy.

Objectives
The aim of this summary is to examine the pharmacological treatment of headache, emphasizing the different types of medications used, their mechanisms of action, and their effectiveness in relieving headache pain.

Methods
We conducted a systematic literature review based on research in the PubMed database, using the descriptors "headache," "pharmacological treatment," and "headache medications." Filters were applied to select review articles and randomized clinical trials with full-text availability. We obtained 150 articles from the PubMed database, of which 15 were selected, and 6 were used for this summary.

Results
There are several classes of medications used in the treatment of headache, including analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), triptans, ergotamines, and preventive medications. Analgesics such as acetaminophen are often used to relieve mild to moderate headaches. NSAIDs, such as ibuprofen, can be effective in treating tension-type headaches and migraines. Triptans, such as sumatriptan, are specific for migraine treatment and work by causing vasoconstriction and reducing cerebral inflammation. Ergotamines are also used in migraine treatment, although they have limited efficacy and can cause side effects. Additionally, preventive medications like topiramate and propranolol are prescribed for patients with chronic or recurrent headaches to reduce the frequency and severity of attacks. The choice of medication depends on the type of headache, the severity of symptoms, and the individual patient's medical conditions.

Conclusion
Pharmacological treatment of headache is an effective approach to relieving headache pain and improving patients' quality of life. Medication choice should be individualized, taking into consideration the type of headache and the patient's medical conditions. It is also important to monitor side effects and treatment response over time to adjust therapy as needed. Ongoing research is necessary to develop new medications and enhance pharmacological treatment options for headache.

Keywords: Treatment; Headache; Medications.

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Headache Medicine

Non-Pharmacological Treatment of Headache: Non-Drug Therapeutic Approaches Such as Cognitive-Behavioral Therapy, Acupuncture, Biofeedback

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introduction
While medications can be effective in managing headaches, non-pharmacological approaches also play a significant role in alleviating headache symptoms. This summary explores various non-drug therapeutic strategies, including cognitive-behavioral therapy (CBT), acupuncture, biofeedback, and relaxation techniques, and their role in headache management.

Objectives
The objective of this summary is to provide an overview of non-pharmacological treatments for headaches, explaining how these therapies work and their potential benefits in reducing the frequency and severity of headaches.

Methods
We conducted a review of the existing literature, including studies from PubMed and reputable medical sources, to gather information on non-pharmacological treatments for headaches.

Results
Cognitive-Behavioral Therapy (CBT) is a form of psychotherapy that helps individuals identify and modify thought patterns and behaviors contributing to their headaches. It teaches coping strategies, stress management techniques, and relaxation exercises. CBT has been shown to be effective in reducing the frequency and intensity of tension-type headaches and migraines, especially when psychological factors are involved. Acupuncture is an ancient Chinese practice that involves inserting thin needles into specific points on the body. It is believed to stimulate the body's natural healing processes. Some studies suggest that acupuncture may provide relief for both tension-type headaches and migraines. Its effectiveness may be related to its ability to release endorphins and promote relaxation. Biofeedback is a technique that helps individuals gain awareness and control over physiological functions like muscle tension, heart rate, and skin temperature. By learning to regulate these functions, individuals can reduce headache triggers related to muscle tension and stress. Biofeedback is particularly useful for tension-type headaches and has been shown to decrease their frequency. Various relaxation techniques, such as progressive muscle relaxation, deep breathing exercises, and mindfulness meditation, can help manage headache symptoms. These techniques reduce stress and promote relaxation, which can be especially beneficial for individuals whose headaches are triggered or exacerbated by tension and anxiety.

Conclusions
Non-pharmacological treatments offer valuable options for individuals seeking to manage their headaches without relying solely on medications. Cognitive-behavioral therapy addresses psychological factors, while acupuncture, biofeedback, and relaxation techniques focus on physiological and stress-related contributors. These therapies can be used alone or in combination with medication, and their effectiveness often depends on the individual's specific headache triggers and needs. Incorporating non-pharmacological approaches into headache management can improve overall well-being and reduce the impact of headaches on daily life.

Keywords: Treatment; Headache; Non-Pharmacological.

Headache Medicine

What's new in SUNCT and SUNA? An umbrella review of the last 5 years

Leonardo José Rodrigues de Araújo Melo; Francisco Luciano Honório Barreto Cavalcante; Francisco Duque de Paiva Giudice Junior; João Marcelo Albuquerque Beserra de Sousa; Kauane Emilly Ribeiro Aureliano; Emanuela Freire Caetano Davi; Pedro Vitor Ferreira Rodrigues; Leonardo Elias Araujo Dos Santos; Mariana Alcântara Tavares; Rodrigo Fagundes da Rosa; Bruno Henrique Alcântara Lopes de Sousa

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Categoria: Cefaleia em Salvas e outras Cefaleias Trigêmino-Autonômicas

Introduction
Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing (SUNCT) and short-lasting unilateral neuralgiform headache with autonomic symptoms (SUNA) are trigemino-autonomic headaches characterized by rapid episodes of pain associated with autonomic symptoms. They are rare headaches with limited literature available.

Objective
To do an overview of reviews on SUNCT and SUNA from the last 5 years to update information on epidemiology, pathophysiology, and treatment.

Methods
A literature search was conducted using the DeCS/MeSH descriptors "Short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing," "SUNCT," "short-lasting unilateral neuralgiform headache with autonomic symptoms," and "SUNA." Boolean operators "OR" were used for the acronyms and "AND" between the rest in the PubMed database. Inclusion criteria for articles were reviews published in English, between 2019 and 2023.

Results
A total of 31 articles were found according to the search, of which 11 met the inclusion criteria. Regarding epidemiology, SUNCT/SUNA has an estimated prevalence ranging from 6.6 to 100 cases per 100,000, with an estimated annual incidence of 1.2 cases per 100,000. The onset age varies between 40-70 years, with an average age of 48, and rare pediatric cases. The male-to-female ratio is 1.5:1. Approximately 90% of SUNCT/SUNA patients have the chronic form of the disease, with attacks lasting for more than 1 year without remission periods or with remission periods lasting less than 1 month.
Concerning pathophysiology, it is not fully understood but involves dysfunction that, possibly related to variations in nociceptive receptors and abnormal production of substance P and CGRP, make the trigeminovascular system more sensitive to painful stimuli. These abnormal stimuli are transmitted to the trigeminal ganglion and the trigeminal caudate nucleus in the medulla, forming the trigeminocervical complex. This abnormal transmission intensifies signaling in the pain processing pathway and activates the trigeminal reflex, leading to stimulation of the facial parasympathetic system and the emergence of autonomic symptoms. Additionally, the hypothalamus, especially its posterior region mediated by orexin, can modulate both systems and their interaction, influencing the development of an attack.
Regarding treatment, first-line drugs for prophylactic treatment are antiepileptics, especially lamotrigine, which has a favorable response rate of up to 64% and is safe during pregnancy.Topiramate and carbamazepine were effective in reducing pain in a significant number of patients.For acute pain episodes, the preferred drug is intravenous lidocaine, which has shown pain-free rates of up to 80%. In terms of surgical treatments, microvascular decompression of the trigeminal nerve (MVD) is the only open surgical option that has been effective in SUNCT/SUNA patients but should only be considered in cases with evidence of vascular compression. Neuromodulation treatments have shown promising results, such as deep brain stimulation (DBS) in the posterior hypothalamus area and occipital nerve stimulation.

Conclusion
SUNCT/SUNA primarily affects men over 40 years of age and has a chronic nature. Its pathophysiology is not well understood but involves aberrant activations of pain pathways and the autonomic system mediated by a dysfunctional hypothalamus. Treatment is based on prophylaxis of attacks, especially with lamotrigine, and new methods of neuromodulation are emerging, showing encouraging outcomes.These conditions have limited literature available, particularly in terms of epidemiological studies and double-blind treatment studies, highlighting the need for further research.

Keywords: Umbrella Review; SUNCT; SUNA.

Headache Medicine

What's new in SUNCT and SUNA? An umbrella review of the last 5 years

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Universidade Federal Do Ceará(UFC), Fortaleza - CE - Brazil.

Categoria: Cefaleia em Salvas e outras Cefaleias Trigêmino-Autonômicas

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Regarding treatment, first-line drugs for prophylactic treatment are antiepileptics, especially lamotrigine, which has a favorable response rate of up to 64% and is safe during pregnancy.Topiramate and carbamazepine were effective in reducing pain in a significant number of patients.For acute pain episodes, the preferred drug is intravenous lidocaine, which has shown pain-free rates of up to 80%. In terms of surgical treatments, microvascular decompression of the trigeminal nerve (MVD) is the only open surgical option that has been effective in SUNCT/SUNA patients but should only be considered in cases with evidence of vascular compression. Neuromodulation treatments have shown promising results, such as deep brain stimulation (DBS) in the posterior hypothalamus area and occipital nerve stimulation.

Conclusion
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Keywords: Umbrella Review; SUNCT; SUNA.

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Headache Medicine

Glioblastomas and Headaches: Exploring the Relationship

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Categoria: Cefaleias Secundárias

Introduction
Glioblastomas are aggressive brain tumors known for their debilitating effects on patients. While their primary symptoms involve neurological dysfunction, there is an emerging link between glioblastomas and headaches. This summary delves into the connection between glioblastomas and headaches, shedding light on their potential relationship.

Objectives
The objective of this summary is to investigate the association between glioblastomas and headaches, focusing on the characteristics, patterns, and clinical significance of headaches in patients with glioblastomas. Methods: A comprehensive review of the existing literature, including studies from PubMed and reputable medical sources, was conducted to gather information on the relationship between glioblastomas and headaches.

Results
Glioblastomas can exert pressure on the brain, causing an increase in intracranial pressure. This can result in headaches, which are often severe, persistent, and not relieved by typical over-the-counter pain medications. Headaches associated with glioblastomas may have unique characteristics, such as being worse in the morning, accompanied by nausea and vomiting, and exacerbated by changes in position. Understanding these features can help differentiate them from primary headaches. Distinguishing glioblastoma-related headaches from other types of headaches can be challenging. Clinicians should consider the clinical context, patient history, and neuroimaging studies to make an accurate diagnosis. The presence of headaches in glioblastoma patients may have prognostic implications. Some studies suggest that the severity and frequency of headaches may correlate with tumor progression and patient outcomes. Effective management of glioblastoma-related headaches involves addressing the underlying tumor. Surgery, radiation therapy, and chemotherapy are standard treatments for glioblastomas and may lead to headache improvement if successful in reducing tumor size.

Conclusions
Headaches can be a significant symptom in patients with glioblastomas, and their presence may have diagnostic and prognostic implications. Clinicians should be vigilant in evaluating headaches in individuals at risk for glioblastomas and consider the possibility of these tumors, especially in cases of atypical or severe headaches. Further research is needed to better understand the relationship between glioblastomas and headaches and to improve their management.

Keywords: Glioblastoma; Headaches; Tumors.

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Headaches and Temporomandibular Dysfunction: Examining the Relationship Between TMD and Headache Symptoms

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Categoria: Cefaleias Secundárias

Introduction
Headaches, or head pain, are common symptoms that can be related to various causes, including temporomandibular dysfunction (TMD). TMD encompasses a range of problems affecting the temporomandibular joint and chewing muscles and may contribute to the onset or exacerbation of headaches. This summary explores the association between TMD and headache symptoms.

Objectives
The objective of this summary is to investigate the connection between TMD and headaches, emphasizing how temporomandibular dysfunction can play a significant role in the emergence and persistence of headaches.

Methods
A systematic review of literature was performed based on research in PubMed, Science Direct database and reputable medical sources, to gather information regarding the relationship between TMD and headaches.

Results
TMD can result from various factors such as bruxism, teeth clenching, dental malocclusion, and jaw trauma. These issues can lead to muscle tension in the head and neck region, triggering or contributing to tension-type headaches. Tension-type headaches are a common type of headache associated with muscle tension. TMD, with its symptoms of jaw pain and limitations in mouth opening, may contribute to muscular tension in the head and neck, thus triggering tension-type headaches. While the relationship between migraines and TMD is more complex, studies suggest that TMD can worsen migraine symptoms. Jaw pain and dysfunction may increase stress and tension, which can trigger or intensify migraines in susceptible individuals. Effective treatment of TMD, which may include occlusal therapy, physiotherapy, bite splints, and other approaches, can provide relief from headaches associated with temporomandibular dysfunction. By addressing issues in the jaw joint and muscles, it is possible to reduce the frequency and intensity of headaches.

Conclusions
TMD and headaches are often interconnected, with temporomandibular dysfunction playing a significant role in the occurrence and exacerbation of headaches, particularly tensiontype headaches. Effective TMD treatment can alleviate headache symptoms, thereby improving the quality of life for patients. Understanding the relationship between these two conditions is crucial for the appropriate management of individuals experiencing both conditions

Keywords: Temporomandibular Dysfunction; Headache; TMD.

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Headache Medicine

Cluster Headache Syndrome: symptoms, pathophysiological mechanisms and treatment

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Categoria: Cefaleia em Salvas e outras Cefaleias Trigêmino-Autonômicas

Introduction
Cluster headache is a rare type of primary headache and the most common of the trigeminal- autonomic headaches. It predominates in males (4:1) and usually begins in the third decade of life. In addition, although it has a low prevalence, cluster headache stands out for being a disabling condition due to the severe intensity of its symptoms. Although its pathophysiology is not fully explained, it is known to involve activation of the trigeminal autonomic reflex through stimulation of the trigeminovascular pathways.

Objective
To investigate and present a summary of cluster headache syndrome, highlighting its symptoms, pathophysiological mechanisms and treatment. This was done through a critical and up-to-date analysis of existing data in the literature.

Methods
This is an integrative literature review, searching for articles published between 2013 and 2023 in the PubMed and Scielo databases, using the DeCS/MeSH descriptors "Cluster headache", "Primary headaches", "Headache" and "Trigeminal autonomic cephalalgias". A total of 22,061 articles were found, according to the inclusion criteria used, in portuguese and english. A total of 13 articles were analyzed, 8 of which were selected for this review.

Results
Cluster headache is often diagnosed late due to the infrequency of the disease and the clinical picture, which can be similar to that of other headaches. There are, however, diagnostic criteria for this condition, defined by the International Classification of Headaches - 3rd edition, which include the manifestation of at least five intense unilateral, orbital, supraorbital and/or temporal crises, lasting between 15 and 180 minutes if left untreated. They must also be associated with at least one symptom/sign ipsilateral to the pain, including conjunctival injection and/or tearing, nasal congestion and/or rhinorrhea, eyelid edema, miosis and/or ptosis and a feeling of agitation and/or restlessness. Seizures usually occur between once every other day and 8 times a day, usually at night. Furthermore, the analysis of the articles provided a better understanding of the possible pathophysiological mechanisms behind cluster headache. Although there is no consensus on the exact pathological pathway, theories revolve around three structures: the trigeminocervical complex, the parasympathetic complex and the hypothalamus. The trigeminocervical complex connects the peripheral neurons of the trigeminal nerve to the central nervous system. Activation of the trigeminal system results in the release of various neuropeptides, including calcitonin gene-related peptide, a potent vasodilator. This neuropeptide may be involved in the pain of this headache. The hypothalamus, in turn, is involved in the circadian and circannual rhythmicity of cluster headache, linking this disease to sleep disorders. As for management, this can be divided into acute abortive and preventive therapies, with therapy in between using prednisone and lidocaine. Abortive treatment includes the use of triptans and 100% high-flow oxygen, while preventive treatment includes the use of verapamil, lithium and melatonin. The drugs used to treat cluster headaches are off-label, but supported by clinical evidence. Finally, new treatment techniques using monoclonal antibodies and neuromodulation devices can be used in both forms of therapy.

Conclusion
The underlying mechanisms of cluster headache have not yet been fully clarified, but it is known that there is a strong relationship with the transmission of trigeminal nociceptive stimuli. A better understanding of the pathophysiology of cluster headache will allow us to improve the treatment and control of this disease, and more studies are needed in this regard.

Keywords: Cluster headache; Primary headache; Trigeminal autonomic cephalalgias; Headache.

Headache Medicine

Machine Learning Model Uses Pain Sketches to Predict Headache Surgery Outcomes: a literature review

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Universidade De Fortaleza, Fortaleza - CE - Brazil.

Categoria: Neuromodulação Na Cefaleia

Introduction
Currently, we are witnessing a new industrial revolution, driven by the advancement of cutting- edge technologies like Artificial Intelligence (AI). Machines are not only executing manual tasks but also engaging in cognitive work, tasks that demand what is now considered intelligence in our contemporary context. Furthermore, machine learning (ML) models are being utilized to forecast the outcomes of headache surgeries based on pain sketches. Pain sketches involve drawings created by patients to depict their pain in various acute conditions and chronic illnesses. Specifically, pain sketches have been employed to predict surgical results for lumbar radiculopathy. In the case of headache surgery, there are distinct pain sketch patterns for each trigger site corresponding to the anatomical location of the affected nerves. Artificial intelligence (AI) has been employed to analyze pain patterns and predict outcomes in headache surgeries, offering a promising approach to forecasting and optimizing surgical results.

Objective
Hence, we conducted a literature review with the objective of comprehensively summarizing the current state of research concerning the use of machine learning models that utilize pain sketches to predict surgical outcomes in headache surgeries.

Methods
The search was conducted in PubMed/MEDLINE and EMBASE in September 2023. The keywords used were "ARTIFICIAL INTELLIGENCE," "MACHINE LEARNING," "DEEP LEARNING," "HEADACHE SURGERY," "MIGRAINE DISORDERS," and "MIGRAINE." We included studies that employed machine learning models using pain sketches to predict outcomes in headache surgery and excluded articles in languages other than English, conference abstracts, and articles of any review type.

Results
Numerous studies and articles have been published on the use of structured algorithmic analysis and AI/ML in predicting outcomes in headache surgery and categorizing pain severity and types. Notably, one study identified that an algorithm assigned substantial predictive value to diffuse pain, facial pain, and vertex pain in predicting surgical outcomes. Another study reported the efficacy of an automated pattern recognition tool in determining the effectiveness of surgery in reducing pain caused by nerve patch headaches. Furthermore, other studies have developed AI-based models for headache diagnosis, yielding promising results.

Conclusion
Therefore, based on research involving structured algorithmic analysis and AI/ML in predicting headache surgery outcomes, categorizing pain severity and types, as well as diagnosis, it is evident that these approaches hold significant promise. They have the potential to enhance surgical decision-making, pain assessment, and the accuracy of headache diagnosis. These advancements can offer substantial benefits to both healthcare providers and patients in the management of headaches.

Keywords: headache surgery; machine learning; migraine disorders.

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Headache Medicine

Treatment for Migraine in Neurological Patients

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Categoria: Tratamento Agudo da Enxaqueca

Introduction
Migraine is considered the third most disabling disease in the world and, with it, acts to decrease the quality of life of many people. It can be classified, according to its frequency of occurrence, into episodic (MS) and chronic (CM). Existing treatments for migraine or migraine can be both pharmacological and non-pharmacological (involving changes in lifestyle habits). In addition, there are already drugs used for prophylactic treatment, especially in the adult population where there is no placebo effect typical of the pediatric population.

Objectives
To present a synthesis of existing pharmacological treatments for migraine in neurological patients. This was done via a critical and up-to-date analysis of the existing data in the literature.

Methods
This is an integrative literature review, searching for articles published between 2018 and 2023 in the PubMed and Science direct databases, using the DeCS/MeSH descriptors "Nervous System Diseases", "Headache Disorders", "Drug Therapy". 2463 articles were found, according to the inclusion criteria used, these being works in Portuguese and English. Of the total, 20 articles were analyzed, of which 8 were chosen to compose this work.

Results
The pathogenesis of migraine is important to understand the mechanisms of treatment. It can involve 4 phases. In the first phase, the appearance of non-painful symptoms occurs. These symptoms may include yawning, mood swings, difficulty concentrating, neck stiffness, fatigue, and thirst. The aura phase is a temporary state of neurological dysfunction that may or may not occur and predominates in women. The headache phase itself is caused by the activation of the trigeminal sensory pathways that generate the typical throbbing of migraine. The intensity of the headache may increase progressively or is explosive (acute). At this stage, the pain is usually associated with nausea and vomiting. Finally, in the postdrome phase, there is tiredness, drowsiness, difficulty concentrating and hypersensitivity to noise. Migraine treatments are primarily aimed at decreasing the intensity and duration of attacks. After the analysis of the studies, it was verified that the non-specific acute treatment for migraine, which can control the aura and pain phases, is carried out with the use of acetaminophen and non-steroidal anti-inflammatory drugs, such as Acetylsalicylic Acid and Ibuprofen. Acetaminophen is less effective, but it is recommended in cases of pregnant women and pediatric patients, and lower intensity attacks . In the acute treatment, it is recommended to use tryptophans (such as Sumatriptan, Rizatriptan, Zolmitriptan), which act by reversing steps of activation of the trigeminovascular pathway. The use of Ergot Alkaloids is also done, such as Dihydroergotamine, a selective agonist of 5-HT1D receptors. In recent years, new groups of drugs have been approved for use in acute specific treatment: 5HT1F receptor agonists, such as Lasmiditan, and gepants, such as Ubrogepant and Rimegepant. Prophylactic treatment aims to make it easier to be controlled by acute treatment. The drugs used in prophylaxis can be: antidepressants, antiepileptics and antihypertensives. Propranolol is an example of an antihypertensive used, it is the drug that has more evidence of effectiveness for prophylaxis. It is noteworthy that many approvals for the treatment of migraine have been given to repurposed drugs that were initially approved for other indications, that is, many pharmacological treatments are off label.

Conclusion
To conclude, there is a variety of migraine treatments available. In addition, it is perceived that drugs for the pharmacological treatment of migraine are a heterogeneous group of therapeutic agents characterized by several mechanisms of action. In addition, it is noted that these drugs remain in constant evolution, with the emergence of new groups of drugs that can help, even more, in raising the quality of life of the patient.

Keywords: Nervous System Diseases; Headache Disorders; Drug Therapy.

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Direct clinical applications of natural language processing in migraine: a literature review

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction
The evaluation of complaints related to headaches in medicine heavily relies on detailed histories provided by patients, where doctors assess the descriptions of their headaches. In this context, Natural Language Processing (NLP) stands as a technique that structures and processes linguistic data into quantifiable units. Moreover, the emergence of disruptive digital health technologies is revolutionizing the healthcare sector. Within the realm of migraine medicine, NLP has been employed to explore the potential of machine learning (ML) applications concerning patients' narratives regarding their migraine experiences.
Migraine is a prevalent and debilitating neurological disorder. Studies examining social media posts related to migraine complaints have unveiled the presence of "informative" or "expressive" posts. Depending on their content, whether positive or negative in tone, it has become possible to identify patients with clinical recurrence or concerns related to medication adherence, among other factors. From a public health perspective, this enables a collective analysis of clinical situations that are often overlooked.

Objective
Hence, we conducted a literature review with the objective of assessing studies that have applied natural language processing (NLP) in the context of migraine patients.

Methods
The search was conducted in PubMed/MEDLINE and EMBASE in September 2023. The search terms used included "NATURAL PROCESSING LANGUAGE," "ARTIFICIAL INTELLIGENCE," "MACHINE LEARNING," "DEEP LEARNING," "MIGRAINE DISORDERS," and "MIGRAINE." We included studies on the application of NLP in migraine and excluded articles in languages other than English, conference abstracts, and systematic review articles.

Results
The search yielded numerous studies that applied NLP in the context of migraine. One study employed NLP to automatically classify written self-reported narratives by migraine patients and found that ML algorithms show promise in classifying these narratives with high performance. Another study reviewed the use of deep learning in clinical NLP and noted its increasing acceptance as a baseline for NLP research within the medical community. A third study developed a versatile NLP framework for analyzing migraine- related content from social media. A fourth study applied basic NLP analyses to a corpus of over 200,000 abstracts published on PubMed under the medical subject and demonstrated that topic modeling can identify pain-related topics effectively.

Conclusion
The search results underscore the potential of NLP and ML algorithms in classifying patients' self-reported narratives, comprehending the experiences of individuals with migraine through social media, and identifying pain-related topics. Furthermore, the growing acceptance of deep learning in clinical NLP suggests that this technology can play a significant role in enhancing the understanding and management of migraine.

Keywords: Artificial Intelligence; Machine Learning; Deep Learning; Migraine Disorders.

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Headache Medicine

Characterization Of Clinical Treatments For Migraine Conducted In Brazil: An Ecological Study

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction
Migraine, or migraine headache, is a disorder characterized by self-limiting episodes of severe headache pain, resulting from a transient dysfunction in the cerebral cortex, leading to significant impacts on individuals' quality of life and well-being. This condition stems from disorders related to genetic, psychological, and anatomical factors. Its multifaceted nature not only generates clinical implications but also raises pertinent questions about how sociodemographic characteristics may be interconnected with this clinical manifestation.

Objective
To characterize the profile of procedures for Complicated Migraine Treatment performed in Brazil through the Unified Health System (UHS - Sistema Único de Saúde, SUS).

Methods
An ecological study was conducted using information from the Hospital Information System of the Unified Health System (HIS/UHS - Sistema de Informações Hospitalares do SUS, SIH/SUS). Data were collected and processed using the Microdatasus package in the R environment. The study encompassed an analysis of interventions performed between January and June 2023, categorized by macroregion of residence, bed specialty (clinical; pediatric), nature of care (emergency; elective), age group (up to 19 years; 20 to 59 years; over 60 years), gender, and patients' race/ethnicity. The statistical analysis included the calculation of total prevalences (by region, gender, and age group), descriptive calculations (mean, standard deviation, median, interquartile range, and relative frequency), as well as inferential analyses, using the Pearson chi-square test ($p<0.05$) with Bonferroni correction and post hoc analysis using Adjusted Standardized Residuals (ASR).

Results
A total of 4,380 hospital procedures for Complicated Migraine Treatment were recorded, with an average of 730.0 procedures per month (SD: ±62.0 procedures/month). Higher prevalences were identified in the Southern (4.3 cases/100,000 inhabitants) and Central-Western (2.6 cases/100,000 inhabitants) macroregions, in the age group of 20 to 59 years (2.7 cases/100,000 inhabitants), among females (3.1 cases/100,000 inhabitants), and among individuals of mixed race (2.6 cases/100,000 inhabitants) and Asian descent (4.4 cases/100,000 inhabitants). The majority of procedures were performed in clinical beds (90.0%) and on an emergency basis (93.5%). The median length of hospital stay was 2 days (IQR: ±2 days). A statistically significant association was found when comparing the nature of care with the macroregion of residence ($X2(4) = 476.2$; $p<0.005$; Cramer's V: 0.3). The analysis identified a higher-than-expected number of emergency procedures for the Southeast region (ASR: 7.3; $p<0.005$), with a proportion of emergency procedures of 97.4%.

Conclusion
The research results suggest a differentiated geographical distribution of procedures for migraine. These findings underscore the importance of preventive strategies and targeted planning to address the specific needs of these groups and minimize more severe complications.

Keywords: Migraine Disorders;Hospitalization;Unified Health System.

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Headache Medicine

The Role of Brain Mri as an essential method in the Diagnosis of Trigeminal Neuralgia

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Categoria: Neuralgia Do Trigêmeo E Outras Neuropatias Cranianas

Introduction
The trigeminal nerve is the main sensory nerve of the face and head and is subdivided into three branches: ophthalmic nerve (V1), maxillary nerve (V2) and mandibular nerve (V3). Trigeminal neuralgia (TN) is a complex, debilitating condition, of sudden onset, caused by intense, unilateral and paroxysmal pain in one or more branches of the trigeminal nerve.
According to the document "Trigeminal neuralgia - New classification and diagnostic classification for practice and research", published in 2016, classic TN requires demonstration of morphological changes in the root of the trigeminal nerve due to vascular compression, and the superior cerebellar artery and anteroinferior cerebellar artery are the most involved. Secondary TN occurs due to an identifiable underlying neurological pathology, such as neoplastic processes, traumatic conditions, vascular malformations, and demyelinating diseases. Finally, TN of unknown etiology is called idiopathic and is a diagnosis of exclusion.

Objective
This study aims to reinforce the importance of Magnetic Resonance Imaging (MRI) of the brain in patients with trigeminal neuralgia, in order to detect a possible causal factor. The study is corroborated by MRI images from our personal collection, illustrating the diffferent subtypes of TN.

Methods
This article was based on a bibliographic review using the following databases as a research source: the Scientific Electronic Library Online (SCIELO), Google Scholar and NCBI Pubmed.The terms: neuralgia, trigeminal and Magnetic Resonance were used as descriptors. The inclusion criteria were language (English, Spanish and Portuguese) and period (2018-2023). At the end of the bibliographic survey, 14 articles were selected, according to their relevance to the proposed topic.

Results
The most common cause of trigeminal neuralgia is neurovascular conflict, which occurs primarily with an arterial branch. MRI protocols with thin slices and 3D sequences with constructive interference in steady state (CISS) or similar are essential for evaluating the cerebropontine angle and inner ear in patients with TN. The presence of a contact margin between a vascular branch and the trigeminal nerve is not sufficient to be characterized as neurovascular conflict, as this finding is commonly visualized incidentally in asymptomatic patients. For this reason, criteria such as thinning or deformation of the nerve or distortion of its course must be taken into consideration. It should be emphasized, however, that the transition zone (TZ) of the trigeminal nerve consists of a segment with approximately 2.0 mm that is about 4.2 mm from the brain stem, and it is an area extremely sensitive to mechanical traction. For this reason, when contact occurs in the TZ of the trigeminal nerve, it must be considered responsible for the TN. Differentelly from primary TN, secondary TN occurs in the presence of neoplasms, benign or malignant, that occur in the pathway of trigeminal nerve. In this context, meningiomas and schwannomas are the most commonly detected tumors.
In 1995, Hasegawa et al. classified the mechanisms of TN secondary to neoplasms as follows: type A, the nerve is completely involved by the tumor; type B, the nerve axis is distorted by the tumor; type C, the nerve is displaced by the tumor and compressed contralaterally by the artery, and type D, the tumor displaces the artery, which ends up compressing the nerve. To illustrate what we mentioned, in this study we show examples from our personal collection of images of patients with primary TN (conflicts between the trigeminal nerve and the CSA, the AICA and the vertebral artery) and with secondary TN (meningioma, schwannoma, herpetic rhomboencephalitis).

Conclusion
Trigeminal neuralgia is a painful complex condition that can be associated to neurovascular conflict and structural injuries. For this reason, evaluation with brain MRI is essential for diagnosis, therapeutic planning and postoperative follow-up.

Keywords: neuralgia;trigêmeo;ressonância magnética.

Headache Medicine

Migraine Preventive Treatment Failure: A Real-World Study in a Tertiary Clinic in Brazil

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Background
Migraine is an overlooked chronic pain disorder that remains undertreated and mistreated. In Brazil, there is a scarcity of evidence on migraine burden in patients who have experienced previous preventive treatment failure (PPTF).

Objective
To evaluate the associations between ≥ 3 PPTF and clinical, psychiatric, and medical and procedures history data.

Methods
In a retrospective, cross-sectional study, the medical records of migraine patients who first visited a tertiary specialized clinic were examined. We selected adults of both sexes aged ≥ 18 years who attended their first appointment between March and July 2017. Ordinal logistic regression models were employed to estimate the associations between number of PPTF (no previous treatment, 1 PPTF, 2, and ≥ 3 PPTF) and chronic migraine, number of diagnosis exams performed (0, up to 3, and ≥ 4), number of abortive drugs classes used (0, 1, 2, and ≥ 3), and severe depression (PHQ- 9 ≥ 15), adjusted for sex, age, and years with disease.

Results
Data from 463 patients (72.1 % female) with a mean (SD) age of 37.3 (13.0) years were analyzed. The frequency of patients with no previous treatment was 40.4 % (187/463), while 30.5 % (141/463) showed ≥ 3 PPTF. In patients with ≥ 3 PPTF, 35.5 % (50/141)) had episodic migraine and 64.5 % (91/141) had chronic migraine. Compared to no previous treatment group, patients with ≥ 3 PPTF showed higher odds for having chronic migraine [OR = 2.50 (1.57, 3.99), p < 0.001], severe depression [OR = 1.97 (1.03, 3.76), p = 0.039], severe anxiety, [OR = 1.98 (1.07, 3.66), p = 0.029], ≥ 4 diagnosis exams [OR = 6.06 (3.78, 9.73), p < 0.001], and used ≥ 3 abortive drug classes [OR =17.4 (10.5, 28.7), p < 0.001].

Conclusion
In this tertiary clinic, patients first visiting a headache specialist had a high frequency of ≥ 3 PPTF, which was associated with higher migraine burden in terms of chronification, psychiatric comorbidity, acute medication inefficacy, and unnecessary exams.

Keywords: Migraine; Preventive Therapy; Treatment Failure; Healthcare Resources; Disease Burden; Chronic Migraine.

Headache Medicine

Case Report - Secondary Headache Due to Idiopathic Intracranial Hypertension

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Categoria: Cefaleias Secundárias

Introduction
Idiopathic intracranial hypertension (IIH) is a rare condition characterized by increased intracranial pressure of undefined cause. This condition is more common in young obese women of reproductive age, and its typical symptoms include daily headache, pulsatile tinnitus, visual disturbances, and papilledema with associated vision loss, with the possibility of other cranial nerve paralysis. The exact causes of this condition are still unknown, but obesity and cerebrospinal fluid flow imbalance are suggested as possible contributors. Due to the lack of knowledge about the exact causes of this condition, the therapeutic approach focuses on weight loss and the use of carbonic anhydrase inhibitors, such as acetazolamide, to reduce intracranial pressure.

Objective
To analyze the progression and treatment of a patient with idiopathic intracranial hypertension, focusing on the relationship between medical interventions and symptom improvement, with special emphasis on headaches.

Case Report
A 62-year-old female patient with hypertension, under treatment for idiopathic intracranial hypertension since 2015. Initially, she reported chronic pulsatile headache in the frontal region, phonophobia, photophobia, and nausea, with suspicion of migraine, treated with topiramate 25 mg. Initial magnetic resonance imaging showed no abnormalities. In 2016, she was admitted twice, first presenting with holocranial headache accompanied by nausea, vomiting, visual blurring, and tearing. A lumbar puncture revealed an opening pressure of 29 cmH2O, confirming the IIH diagnosis. During the second admission, she reported a history of unilateral paralysis of the extraocular muscles associated with diplopia and decreased visual acuity. In both admissions, her physical examination showed no significant changes except for obesity, and magnetic resonance imaging showed no abnormalities, but retinography revealed signs of hypertensive retinopathy and papilledema. In 2017, the patient was on topiramate 25 mg every 12 hours, acetazolamide 250 mg daily, hydrochlorothiazide 25 mg daily, and enalapril 10 mg daily; however, she still complained of daily headaches. On physical examination, her blood pressure was normal, and cerebrospinal fluid cytopathology indicated a urea concentration of 41 mg/dL, glucose of 61.2 mg/dL, and total proteins of 42 mg/dL. Cytometry and cytology examination indicated 2 leukocytes per mm3. After continuous medication use, there was a significant improvement in symptoms, and the acetazolamide dose was optimized to 500 mg daily. In 2018, the patient underwent visual field testing, which showed diffuse reduction in visual fields, relative and dense scotomas in both hemifields, and decreased foveal perception in both eyes, indicative of prechiasmatic lesions. As a result, excessive tearing improved, but chronic refractory headache symptoms persisted. At the end of 2018, the patient reported excessive tearing again, as well as lower back pain and lower limb edema, with an improvement in the headache condition. The patient was taking topiramate 25 mg daily and acetazolamide 250 mg every 12 hours. In 2021, she returned to the hospital with headache lasting for 30 days, localized in the right fronto-temporal region and associated with reduced visual acuity in the right eye. She was then prescribed acetazolamide 250 mg every 8 hours and topiramate 75 mg daily.

Conclusion
This case highlights the complexity of idiopathic intracranial hypertension (IIH), a rare condition with an unknown cause. Medication therapy, especially with topiramate and acetazolamide, provided relief from symptoms, particularly the headache. This emphasizes the need for a multidisciplinary approach and constant monitoring to improve the quality of life of patients affected by this condition.

Keywords: Idiopathic intracranial hypertension; headache; case.

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Headache Medicine

Hemicrania Continua: Case report

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Categoria: Cefaleia Em Salvas E Outras Cefaleias Trigêmino-Autonômicas

Introduction
Hemicrania Contínua (HC) is classified as a trigemino-autonomic headache. Described as unilateral pain without changing sides, daily and continuous without pain-free intervals, moderate intensity with exacerbations to severe pain, for more than 3 months. Accompanied by at least one of the trigemino- autonomic symptoms (ipsilateral conjunctival hyperemia and/or tearing, ipsilateral nasal congestion and/or rhinorrhea, ipsilateral miosis and/or ptosis) and with a dramatic response to indomethacin. Occasionally, individuals also experience symptoms of Migraine, such as: Nausea and/or vomiting, photo and/or phonophobia. The prevalence is still unknown, with a higher incidence in females and can occur in any age group. Underdiagnosed disorder in medical practice, as there have not yet been many advances in relation to the pathophysiology and etiology of the disease. Most cases are of primary etiology (idiopathic), secondary causes include: post-traumatic hemicrania, hemicrania associated with a surgical procedure, unruptured intracranial aneurysm, organ transplant, temporomandibular joint dysfunction, cervical disc herniation, intracranial tumor and infection by HIV. Therefore, all patients with abnormal presentations require imaging (cranial MRI).

Objective
To report the case of a patient who was initially diagnosed with presumed Trigeminal Neuralgia and subsequently, after reviewing the case, Hemicrania Continua after responding completely to indomethacin. Alert to the importance of characterizing the type of headache and questioning the differential diagnoses to arrive at the correct diagnosis and therapy.

Case report
Patient, 74 years old, male, sought headache and orofacial pain team at a neurological hospital in Curitiba/PR in May 2023 due to pain in the left temporal region, fixed unilateral, continuous, of strong intensity, associated with symptoms autonomic signs of ptosis and tearing on the left, starting in March 2023. Previous diagnosis of Alzheimer's Disease (CDR 1), undergoing neurological follow-up and use of donepezil. Regarding the differential diagnoses, the hypothesis of Trigeminal Neuralgia was raised, however the pain remained refractory to carbamazepine, and in relation to Large Cell Arteritis, the erythrocyte sedimentation rate (ESR) test was normal, with no other findings at the time. physical examination or diagnostic criteria for vasculitis.
MRI examination of the brain only with volumetric reduction of the brain and microangiopathy (Fazekas I). Indomethacin 25 mg orally every eight hours was prescribed for seven days as a therapeutic trial with complete resolution of symptoms. Finally, the diagnosis of Paroxysmal Hemicrania (PH), which also responds to anti-inflammatory drugs, was ruled out, as the duration of the pain presented is continuous, while in PH the average duration is 2 to 30 minutes, recurring numerous times a day.

Conclusion
Hemicrania Continua should be considered in all cases of chronic unilateral daily headaches with trigemino- autonomic symptoms, regardless of the age of onset and an indomethacin test should be performed at the beginning. After diagnosis be investigated for possible secondary causes.

Keywords: Hemicrania Contínua;Trigemino-autonomic headache; Differential diagnoses.

Headache Medicine

Use Of Nerve Block In The Treatment Of Orofacial Pain: An Integrative Review Of The Literature

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Introduction
Nerve block has been a widely explored therapeutic option for alleviating orofacial pain. This painful condition affects the tissues of the face and oral cavity, causing chronic discomfort and distress. Understanding its effectiveness as a treatment modality is of utmost importance for improving the quality of life of these patients and guiding clinical practice.

Objective
This study aims to conduct an integrative literature review with the objective of evaluating the scientific knowledge available in the literature regarding the effectiveness of nerve block as a treatment modality for orofacial pain.

Methods
An integrative literature review with a qualitative and descriptive approach was conducted. It sought to answer the guiding question: "What scientific knowledge has been produced in the literature regarding nerve block as a treatment modality in orofacial pain?". Data were collected in August 2023 from four electronic databases: BVS, LILACS, Scielo, and PubMed, using the following descriptors for the first three databases: ["Terapêutica" and "Bloqueio Nervoso" and "Dor Orofacial"] and ["Nerve Block" and "Facial Pain" and "Therapeutics"] for the latter, resulting in 218 articles; 216 in PubMed, 1 in BVS, 1 in Scielo, and 0 in LILACS, respectively. Results: From this quantity, eligibility criteria were applied, which included fully available articles in the listed databases, published between 2019 and 2023 (last 5 years). There were no language restrictions. Publications that did not meet the theme's delimitation, the study's objective, as well as those resulting from editorials, ministerial documents, book chapters, theses, and dissertations were excluded. In this sense, 8 articles remained, with duplicates excluded, leaving 7. Subsequently, titles and abstracts were read, resulting in the removal of 3 studies. After full-text reading, 4 studies were retained, and data extraction was performed by the 4 researchers using a protocol previously developed by the authors, with the variables: title, author, country, objective, methodology, results and conclusions. Therefore, the study found that nerve block yields satisfactory results, as it provides analgesic effects in patients suffering from orofacial pain, but it should only be used in specific cases and when drug treatment is ineffective.

Conclusion
The results emphasize the importance of nerve block as an alternative for the therapeutic treatment of orofacial pain in patients who exhibit some form of resistance to drug intervention.

Keywords: Therapeutics; Nerve Block; Facial Pain.

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Secondary Orgasmic Headache - Reversible Cerebral Vasoconstriction Syndrome (RCVS): Case Report

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Categoria: Cefaleias Secundárias

Introduction
Reversible cerebral vasoconstriction syndrome (RCVS) is defined as a recurring thunderclap headache with multifocal vasospasm. Full recuperation commonly happens in most patients. However, in a few cases, irreversible neurological deficits occur. Some rare cases onsets have been linked to orgasms during sexual intercourse or masturbation. Orgasmic headache often presents with an explosive and sudden occipital bilateral or diffuse head pain and is the sole symptom in 75% of cases.

Objective
To present a case report of a rare secondary headache, emphasizing the importance of characterizing the type of headache and considering differential diagnoses to arrive at the correct diagnosis and treatment.

Case Report
A 36-year-old male patient reported a severe occipital headache, throbbing in nature, which initially caught attention due to its occurrence during sexual activity. Patient disclosed a prior episode of severe headache with similar characteristics occurring one month ago. This headache had a sudden and progressive onset, with an intensity rated as 9/10, located in the bilateral occipitotemporal region. It was associated with malaise and nausea, persisting for two consecutive days. After this acute episode, the pain continued independently of sexual activity and without associated symptoms such as nausea, vomiting, or sensitivity to light and sound. Upon admission, the pain intensity had decreased, rated as 5/10, and the patient was asymptomatic.On neurological examination, the patient had a Glasgow score of 15, photoreactive pupils, with preserved extraocular movement and facial mimicry. No sensory deficits were observed, gait was normal, and there was no neck stiffness. The patient demonstrated grade V strength globally, with no other neurological findings. The intracranial arterial magnetic resonance angiography performed on 07/05/23 revealed multifocal wall irregularities in the middle third of the basilar artery, with areas of moderate stenosis, raising the possibility of Reversible Cerebral Vasoconstriction Syndrome (RCVS). Posterior fossa malformations were ruled out. Subsequently, on 07/31/23, a cranial and neck arterial CT angiography showed that the stenosis had resolved. Patient also denied new similar headache episodes Based on the clinical and radiological findings, the probable diagnosis is Secondary Orgasmic Headache - Reversible Cerebral Vasoconstriction Syndrome (RCVS). The occipital pressure-like headache, bilateral, daily, with an intensity of 1-2/10, completely improves with Dipirona, showing no signs of central sensitization or pain on the Valsalva maneuver.

Conclusion
This work describes a patient with intense headache, initially associated with orgasm during sexual intercourse, raising suspicion of Orgasmic Headache and subsequently linked as a possible manifestation of Spontaneous Vertebral Cerebral Artery Dissection (SVCR). Clinical evaluation and imaging studies revealed irregularities in the walls of the basilar artery, suggesting SVCR as the likely diagnosis. It is essential to emphasize the significance of this case, underscoring the need to consider SVCR as a potential cause of orgasmic headache. The resolution of the observed stenoses in imaging underscores the importance of early diagnosis and ongoing monitoring. Understanding this disorder is crucial for guiding appropriate management and preventing neurological or psychosocial sequelae.

Keywords: Reversible cerebral vasoconstriction syndrome; Orgasmic headache; Thunderclap headache.

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Headache Medicine

Raeder's Syndrome - A Threatening Diagnosis Not To Miss

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Introduction
Raeder's paratrigeminal oculosympathetic syndrome, also known as Horner painful syndrome, is a rare headache disorder listed in the chapter "Painful lesions of cranial nerver and other faciaal pain" of ICHD-3. The diagnostic criteria involves pain localized to the distribution of the ophthalmic division (V1) of the trigeminal nerve (that can spread to maxillary division - V2) aggrevated by eye movement associated with ipsilateral Horner syndrome with imaging evidence of anatomical pathology of middle cranial fossa or ipsilateral internal carotid. Even though his rare condition often goes undiagnosed, its timely identification can lead to correct identification and treatment of the associated cause and reduce the risk of other neurologic complications.

Objective
This case report aids in raising awareness about this relatively rare condition, adding insights into the clinical manifestations, potential causes of this specific type of headache.
We detail the clinical approach, treatment and outcome of a patient with Raeder's syndrome caused by internal carotid dissection - an acute and pottencially morbid cause of this syndrome - highliting the need for urgent investigation in such cases.

Case Report
A 44 years old male patient entered the Emergency Department reporting a new onset of a left periorbital headache (V1 and V2 territory), worst-ever, non-pulsatile, which reached the highest intensity in 10 minutes. He denied head trauma, eye redness, tearing and nasal discharge, but described visual blur in the affected eye.
The patient had a history of treated hepatitis C with chronic liver disease, cryoglobulinemia (mononeuritis multiplex, cutaneous vasculitis, livedo reticularis, arthritis - last activity 5 years ago), smoking, overweight and hypertension. At the moment, he used only losartan as a continuous use medication (treatment of crioglobulenemia ceased in 2018 after 2 doses of Rituximab and hepatitis C treatment).
On physical examination, he was hypertense (210x120mmHg), had a discreet anisocoria with right pupil 2mm bigger than the left one in light and dark environments, and semiptosis on the left eye. He denied reduced tactile sensitiveness over periorbital V1 and V2 territory on the affected side, but reported a tingling sensation when touched. There wasn't redness or tenderness of the left eye. There were no other focal neurology deficits.
The hypothesis of Paratrigeminal oculosympathetic (Raeder's) syndrome was made. Brain CT did not show any pathologic changes, but CT angiogram of the neck evidenced left internal carotid dissection, later confirmed to be acute by MR neck angiogram. Cerebral angiogram (CT and MRI) was considered normal.
The patient was treated with Dipirone, acetylsalicylic acid and clopidogrel (for 21 days) with pain relief, and was discharged from hospital one day later.

Conclusion
Raeder's paratrigeminal sympathetic syndrome may be caused by acute and threatening neurologic and vascular disorders, and its early diagnosis can reduce long term morbidity by allowing treating the causative disorder. Even though trigeminal pain is caused by V1 and/or V2 involvement, petrous and cavernous carotid dissection may be hard to see even with advanced imaging, highlighting the importance of cervical arterial imaging as well.
The treatment of choice of acute cervical artery dissection ranges from double platelet antiagregation to anticoagulation and must be decided based on individual patients informations and clinicians's experience. Treatment of pain lacks evidence support and therefore should be indivualised and based on patients' response.

Keywords: Raeder's Syndrome; Carotid Dissection; Facial Pain.

Headache Medicine

Cephalalgia in Palliative Neuro-oncology: Understanding and Managing Discomfort

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Categoria: Outros

Introduction
Headaches are experienced by 30-70% of patients with brain tumors and are the prevailing source of pain within this cohort, with the predominant etiologies often including elevated intracranial pressure, edema formation and direct cranial nerve compression. This manifestation becomes notably pronounced in palliative care scenarios, where the meticulous management of pain assumes notable significance to ensure the optimal comfort of the patient. Therefore, there arises a need for a comprehensive exploration of the treatment modalities specific to this category of cephalalgia, with a dedicated focus on therapeutic potential and specificity.

Objectives
Produce a comprehensive analysis of the therapeutic modalities accessible for palliative care in patients experiencing cephalalgia subsequent to the presence of brain tumors or following neuro-oncological interventions.

Methods
This systematic review adheres to the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). We conducted database searches using the keywords "Neuro-oncology," "Palliative," and "Headache", combined with the Boolean operator "AND," on PubMed and on ScienceDirect.

Results
Search across databases yielded a total of 17 relevant articles, with 9 being included in this study. The literature indicates that tumor- directed therapies generally lead to an improvement in headache symptoms. However, to refine the management of cephalgia associated with intracranial tumors, it becomes essential to delve into the underlying mechanisms of its pathogenesis. Regarding tumor-related edema, the conventional palliative therapeutic approach involving dexamethasone with gastric protection has demonstrated substantial efficacy in ameliorating symptoms, mainly due to its low short-term side-effect profile. Nevertheless, dexamethasone, being a corticosteroid, may pose diagnostic challenges when primary central nervous system lymphoma is under consideration, as it has the potential to compromise diagnostic accuracy and should be used judiciously. Furthermore, in end-of-life stages, advantages of corticosteroids should be weighed against side- effects, as it is paramount to administer steroids at the minimal effective dose, minimizing potential side effects. Additionally, a phased reduction in the steroid regimen should be contemplated upon achieving satisfactory control of symptoms. It is noteworthy that, within this clinical context, the concurrent use of non- steroidal anti-inflammatory drugs is generally discouraged due to their propensity to engender hemorrhagic complications at the tumor site and an elevated risk of gastric ulceration when coadministered with steroids. Neuropathic pain may originate from cranial nerve involvement, such as occipital nerve compression in cranio-medullary junction tumors. Near death, use of opioids increases and predominates, with opioid combinations such as hydrocodone or oxycodone with nonopioid analgesics being often needed to treat moderate headaches, while more severe cases may need higher potency opiates, such as morphine or hydromorphone. A potentially more effective alternative to corticosteroids in reducing cerebral edema is the VEGF inhibitor bevacizumab, although large prospective trials are lacking. Treatment-related headache is also very recurrent, as it often occurs in radiotherapy, with radiation-induced neurotoxicity occurring in 50– 90% of brain tumor patients, and also being the more frequent side effect after craniotomy, being treated, in this last case, with occipital nerve blocks, duloxetine, gabapentin, and tizanidine.

Conclusion
Managing headaches associated with intracranial tumors presents multifaceted challenges. Careful consideration of diagnostic implications, medication choices, and potential side effects is crucial, and tailoring treatment to the individual patient's needs is essential.

Keywords: Headache; Palliative Care; Neoplasms; Brain Neoplasms; Terminal Care.

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The correlation of Osteoporosis with Trigeminal Neuralgia: a Literature Review

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Categoria: Neuralgia Do Trigêmeo E Outras Neuropatias Cranianas

Introduction

Trigeminal neuralgia is a debilitating neuropathic pain condition that can affect one or both trigeminal nerves, causing recurrent episodes of extreme facial pain similar to electric shocks, of short duration and abrupt onset and end. The pathophysiological mechanisms of this disease, although still controversial, are limited to the vascular improvement of the trigeminal nerve, in its root entry zone, and the demyelination of the sensory fibers of this nerve. It is also known that nociceptive stimulation of the trigeminal nucleus presupposes a wave of depolarization, in which the activation of calcium channels participates. Therefore, it was conjectured, in the present study, whether structural diseases related to calcium metabolism, such as osteoporosis, related to trigeminal neuralgia.

Objective

To review and analyze the evidence on the relation between osteoporosis and trigeminal neuralgia (TN).

Methodology

A search was carried out using the descriptors 'Osteoporosis' and 'Trigeminal Nevralgia' in the Embase, PubMed and CAPES Periodicals Portal databases, the inclusion criteria were: articles published since 2017 in Portuguese, English or Spanish and free access. An analysis of titles and abstracts of scientific articles obtained in the selection of three scientific articles to compose this review.

Results

It was observed that TN and osteoporosis had risk factors in common, such as hypertension and migraines. Furthermore, cohort studies found that patients with osteoporosis are approximately twice as likely to have trigeminal neuralgia compared to those without osteoporosis. An explanation for this finding would be: hypomagnesemia, which would reduce vitamin D levels, which is essential for the absorption of calcium, since the liver 25-hydroxylase and renal 1□-hydroxylasenzymes require magnesium to be active, in addition this ion regulates the excitability of neuronal receptors, so that low levels of magnesium would favor the conduction and transmission of neural impulses, which represents a risk factor for TN; It was also hypothesized that the calcitonin gene- related peptide (CGRP) would be an important mediator of this investigated relation, because patients with osteoporosis had a higher plasma level of CGRP, which is an extremely important neuropeptide in sensory pathways of the trigeminal nerve and which also regulates the release of osteoblastic cytokines, therefore having an effect on bone reabsorption by osteoclasts. Thus, overexpression of CGRP would cause the development of osteoporosis and a decrease in the activation thresholds of trigeminal neuralgia.

Furthermore, hypertension was also shown to be a risk factor for both conditions, as it would cause a leak of bone calcium with subsequent hypercalciuria and increased arterial tortuosity in the brainstem.

Conclusion

The evidence found suggests that there is an association between osteoporosis and trigeminal neuralgia, however this relation is complex and little studied, based on the hypothesis that magnesium levels and CGRP would eliminate an intermediary between these conditions. However, it is worth highlighting that, given the scarcity of literature on the subject, there is a clear need for more robust studies that directly investigate the relation between osteoporosis and trigeminal neuralgia and the mechanisms by which this would occur.

Keywords: Calcium; Vitamin D Deficiency; Calcitonin Gene-Related Peptide; Headache Disorders; Migraine.

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Headache Medicine

The Use of Botulinum Toxin in the Treatment of Headache: an Integrative Literature Review

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Categoria: Tratamento Preventivo Da Enxaqueca

Introduction
Headache is a condition characterized by head pain often associated with migraines, significantly impacting patients' quality of life. Conventional drug-based treatments frequently prove ineffective, prompting the search for alternative therapeutic options. In this context, botulinum toxin (BT) has emerged as a promising treatment option due to its ability to alleviate painful symptoms, especially in cases of headache, by acting on nerve endings between motor neurons and muscle fibers, inhibiting pain perception.

Objective
This study aims to conduct an integrative literature review to analyze the benefits and effects of using botulinum toxin in the treatment of headaches. It also seeks to explore the mechanisms of action of the toxin, as well as its safe and effective management in reducing pain in the fronto-cervical region.

Methodology
A comprehensive literature review was conducted, considering authorship, research year, study design, sample size, and primary outcomes. This approach employed qualitative and descriptive methods to evaluate the utilization of Botulinum Toxin in headache treatment. Data were collected in August 2023 from the PubMed and Scielo database platforms, using MeSH descriptors and synonyms "Botulinum Toxins" AND "Headache." The study was conducted without language restrictions and rigorously excluded case reports and literature reviews.

Results
The initial search yielded a total of 144 articles, with 141 found on the PubMed platform and only three within the Scielo database. During the screening process, 68 studies were excluded, and an additional 12 were removed due to duplication. A total of 64 eligible studies were identified, while 38 were excluded due to misalignment with the study's objectives. Of these, 18 were categorized as literature reviews. The included studies encompassed eight carefully selected research samples. This comprehensive approach revealed a predominant use of botulinum toxin type A in headache therapy. Beyond its muscle-paralyzing ability, botulinum toxin demonstrated analgesic and anti-inflammatory actions, modulating inflammatory pathways and neuro-mediators associated with pain perception. Proper administration involved fixed doses ranging from 155 to 195 units in specific regions, such as the frontal, temporal, and occipital areas, resulting in pain relief with effects lasting up to 90 days.

Conclusion
The utilization of Botulinum Toxin presents itself as a viable alternative for headache treatment, given its mechanism of action and the potential for regular applications. Its versatility extends beyond muscle paralysis, making it a valuable therapeutic option. Nonetheless, further research and scientific refinements are imperative to enhance the reliability of this therapy for headache patients, solidifying its role as a therapeutic proposal for management and, consequently, an improvement in the quality of life for these patients.

Keywords: Headache; Drug treatment; Botulinum Toxins Type A.

Headache Medicine

Effect of Physiotherapeutic Intervention on Migraine Carriers Treated at the Physiotherapy School Clinic From the State University of Paraiba

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Categoria: Tratamento Preventivo Da Enxaqueca

Introduction
Headache is an example of chronic pain that substantially interferes with quality of life and is one of the most important causes of lost work days and health service costs. Migraine is considered a primary headache, characterized by intermittent attacks of unilateral pulsating pain, associated with nausea and intolerance to light/noise/smells. As it is a highly prevalent, disabling disease with a high potential for chronicity, it is crucial to seek effective treatments for the attacks. It is therefore important to introduce alternative treatments, such as physiotherapy with manual therapy techniques, which have been used to treat chronic pain resulting from different conditions, with effective results in improving pain parameters.

Objective
Analyze the effect of physiotherapeutic intervention in individuals with chronic migraine on the intensity, frequency of pain and use of analgesics; Describe the physiotherapeutic treatment protocol used in patients with chronic migraine treated at the headache clinic at the Physiotherapy School of the State University of Paraíba, Campus I, UEPB.

Case report
This was a case series study of patients aged between 18 and 64, the vast majority of whom were female. The initial assessment was carried out by a neurologist with an anamnesis, clinical and neurological examination, followed by a physiotherapy assessment by physiotherapy students from UEPB, with emphasis on the physical examination of the patients. Based on the diagnosis of chronic migraine-type headache, these patients underwent physiotherapy treatment and were instructed to fill in a headache diary for a period of 31 days, collecting information on the frequency, intensity of the pain, use of medication and the nature of the pain. They underwent treatment involving the techniques of pompage, dry needling, the Busquet method and myofascial massage for three months, in weekly sessions and with a frequency of three appointments per week.

Conclusion
Migraine without aura was the most prevalent in the sample, accounting for 87.5% of cases. All the participants had undergone some kind of previous treatment for headache and 65.62% of the patients did not associate physiotherapy treatment with medication. With regard to headache duration, 25% of the patients reported that they had had migraine episodes for approximately 10 years. The data showed that there was a reduction in the frequency of crises after the intervention, demonstrating the effectiveness of the physiotherapeutic techniques applied to the group.

Keywords: Migraine; Treatment; Physiotherapy.

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Analysis of the Epidemiological Profile of Patients Diagnosed With Migraine Treated at the Physiotherapy School Clinic

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Migraine disorders is a public health concern that affects a large number of individuals, often for a lifetime, with a significant impact on the lives of its sufferers, regardless of region, culture, or socio- economic status. In this context, epidemiological monitoring is essential to understand the demographic profile and characterize the clinical patterns of this condition, allowing us to comprehend the impact of migraine on its sufferers, their families, and society. It also helps in identifying deficiencies in healthcare systems in providing care to these patients and improving therapeutic approaches and the quality of care offered to them.

Objective
To analyze the epidemiological profile of patients treated at the Headache Outpatient Clinic of the School of Physiotherapy at the State University of Paraíba (Universidade Estadual da Paraíba, UEPB), Campus I. Methodology
A cross-sectional study was conducted with patients treated at the School of Physiotherapy Clinic at State University of Paraíba from 2012 to 2018. The sample comprised 103 patients with a diagnosis of headache. Information was collected from the Headache Patient Care Protocol regarding sex, age, occupation, duration of headache, duration and frequency of attacks, medication use, presence of a genetic factor, previous diseases/surgeries, and migraine diagnosis (with aura/without aura). Descriptive statistical analysis was employed to determine the absolute and relative frequencies of the categories corresponding to each variable.

Results
The majority of patients were women (92.2%), with a mean age of 36.5 years (standard deviation: +12.9 years). Regarding occupation, 22.3% were students, 14.6% were housewives, and 8.7% were teachers. Concerning headache symptoms, most patients reported suffering from this condition for more than 10 years (59.2%), having attacks lasting over 24 hours (39.8%), and the most common frequency of these attacks was 3 days per week (22.3%) or 7 days per week (22.3%). Medication use for headache treatment was widely reported (91.3%), with 25.2% of patients using medication three days a week. Regarding previous medical history, 38.8% of patients mentioned having undergone surgery, while 36.9% reported pregnancies, and 17.5% had a diagnosis of hypertension. Regarding genetic factors, 44.7% of patients said their mothers also suffered from headaches, while 30.1% mentioned that their sisters had the same condition. Concerning the diagnosis, the majority (71.8%) were classified as having migraine without aura, 25.2% had migraine with or without aura, and 2.9% were diagnosed with migraine with aura.

Conclusion
The results indicate a predominance of women, long duration and frequency of attacks, frequent medication use, and a high prevalence of migraine without aura. A better understanding of this issue is essential to guide public policies that improve the diagnosis and clinical management of this condition. Furthermore, these data provide a solid foundation for future investigations, with the potential to direct more specific approaches in the diagnosis, prevention, and treatment of migraine, aiming to enhance the quality of life of patients and reduce their social, economic, and psychological impacts.

Keywords: Migraine Disorders; Headache Disorders; Epidemiology.

Headache Medicine

Headache and Covid-19: an Analysis of Research Trends in Search Engines Over the Last Six Years

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction
Headache is a frequent symptom in the Brazilian public healthcare system, and it can manifest in various ways, either as an autonomous condition (primary headaches) or as a symptom of another illness (secondary headaches). It is relevant to note that COVID-19, an infectious disease discovered in December 2019, caused by the SARS-CoV-2 coronavirus, can trigger this symptom in its secondary form. With that said, it is crucial to consider that social media plays a significant role in shaping the behavior of the population today, serving as a critical means to disseminate health-related information. It is noteworthy that one way to monitor potential uncertainties among the population about a specific topic is through technological tools like Google Trends. The use of this platform can reveal the concerns and questions of the population regarding certain health topics, through searches conducted on the Google search engine, which is the largest global search platform.

Objective
To analyze searches for terms related to headache on Google Trends, three years before and three years after the start of the COVID-19 pandemic, conducted in English and Portuguese.

Methods
A search was conducted on the Google Trends platform using the terms "headache" and "cefaleia," which means headache in Portuguese, from January 2017 to December 2022. Statistical analysis was performed using the IBM SPSS program to compare the search intent for each year.

Results
Comparing the pre-pandemic years (2017, 2018 and 2019) to the post-pandemic years (2020, 2021, and 2022) for the term "headache," there was an increase of 20.87% in search intent. For the term "cefaléia," there was an increase of 40.72%. There was a continuous increase in search intent for both the term "cefaleia" and the term "headache" over the years, with only one episode of decline (-4.69%) between 2020 and 2021 for the term "headache." The largest increase in search intent (26.40%) occurred between 2021 and 2022 for the term "cefaleia".

Conclusion
In summary, this analysis of research trends related to headache on Google Trends over the past six years (2017 to 2022) revealed a significant increase in search intent, both for the term "headache" in English and the term "cefaleia" in Portuguese. This increase was even more pronounced in the years following the onset of the COVID-19 pandemic, indicating a clear association between the pandemic and the population's interest in headache- related information. The role of social media and the internet as sources of health information dissemination is undeniable, and Google Trends has proven to be a valuable tool for monitoring public concerns. These results emphasize the importance of providing accurate and accessible information about the relationship between COVID-19 and headache, as well as the need to address the population's health concerns adequately during crisis situations like the pandemic.

Keywords: Headache; COVID-19; Google Trends.

Headache Medicine

The impact of screen access associated with hospital admissions for migraine in children and adolescents

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Categoria: Cefaleias em Crianças e Adolescentes

Introduction
Migraine is a disorder that can lead to several comorbidities and compromise the patient's quality of life. Within the pediatric population, it can lead to behavioral issues, school absences and diminished academic performance. Several studies indicate that the prevalence of migraine in childhood is approximately 7.7%, rising during adolescence. The pathophysiology of migraine involves the dysfunction of brainstem pathways that conventionally regulate sensory input. A critical role is assumed by the trigeminal ganglion, which originates from meningeal vessels and is responsible for a reflex known as the trigeminal-autonomic reflex. It becomes exacerbated in individuals suffering from migraines. These physiological processes play an essential role in the generation of pain associated with migraine.

Objective
The study primarily aims to describe the number of hospital admissions of children and adolescents for migraines and other headache syndromes in Brazil between January 2013 and July 2023, correlating this with the literature.

Methodology
A comparative study was conducted using DATASUS data about the number of hospitalizations of people aged 1 to 19 years with migraine or other headache syndromes in Brazil, between January 2013 and July 2023.

Results
A progressive increase in hospital admissions due to migraine or other headache syndromes was observed between 2013 and 2019. The numbers were as follows: 1,331 in 2013, 1,437 in 2014, 1,493 in 2015, 1,536
in 2016, 1,782 in 2017, 1,855 in 2018, and 1,915 in 2019. However, in the years 2020 and 2021, there was a decline in hospitalizations, totaling 1,265 and 1,266, respectively. In 2022, these admissions saw a significant increase, reaching 1,727, and by July 2023, they had already reached 1,159.

Conclusion
The rise in hospital admissions for migraine or other headache syndromes between 2013 and 2019 can be correlated with the increased screen time among children and adolescents. This phenomenon can be attributed to the increasingly early and intense use of electronic devices such as televisions, cell phones, and tablets. This hypothesis can be strengthened based on the results of a study published in an American article, which found that a reduction in the percentage of individuals reporting no headache occurrence can be observed as screen exposure time increases, with respective proportions of 59.8%, 57.5%, 54.6%, and 53.8% among individuals with very low, low, high, and very high exposure. In this context, migraine without aura exhibited the greatest increase as screen usage time extended, reaching 13.9% among those reporting very low exposure, 15.4% among individuals indicating low exposure, 16.3% among those reporting high exposure, and 18.2% in the very high exposure group. Additionally, the decline in these numbers in 2020 and 2021 may be linked to the COVID-19 pandemic, which resulted in a decreased utilization of medical services for non-COVID-related reasons. This rationale gains further support when considering the resurgence of hospital admissions in 2022 and 2023, years marked by a reduction in the pandemic's impact due to increased vaccination rates. So is screen overexposure associated with an increase in hospital admissions for headaches in the post-pandemic period?

Keywords: Migraine; Headache; Pediatric; Hospitalization; Screen time; Pandemic.

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Radiofrequency Ablation as an Alternative to Cervicogenic Headache Treatment: a Literature Review

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Categoria: Cefaleias Secundárias

Introduction
Cervicogenic headache (CHA) is a type of secondary headache. It is characterized by being a unilateral pain, due to dysfunction of the cervical spine and its anatomical characteristics, mainly innervated by spinal nerves C1, C2 and C3. CHA is difficult to diagnose and treat, as there is still a lack of tests and diagnostic criteria available for application and also due to the significant overlap with migraine. The etiology of CHA is related to the convergence of nociceptive afferents from the three trigeminal and superior cervical nerves to second-order neurons in the trigeminocervical nucleus in the superior cervical spinal cord (C1-C3). Thus, it is clear that the origin of CHA is implicated in all cervical components innervated by the joints, muscles, nerves, ligaments and dura mater. Due to its complex etiology, a multidisciplinary approach must be used in treatment. Accordingly, in refractory cases of CHA or when other therapeutic methods fail, radiofrequency ablation (RFA) can be used, a technique in which radiofrequency waves destroy the nerve fibers responsible for transmitting painful signals to the brain.
Objective
To analyze the latest studies regarding the effectiveness of RFA treatment in patients with cervicogenic headache, including indications, pain outcome measures, secondary outcomes, and complications.
Methods
This constitutes a retrospective study with a literature review based on publications indexed in the following databases: PubMed, CAPES Periodicals Portal, and Science Direct. The search was conducted using the descriptors: 'Radiofrequency Ablation' 'Cervicogenic Headache,' and 'Treatment'. Inclusion criteria considered were: articles published between 2018 and 2023, in English, Spanish, or Portuguese languages, with full-text availability and literature reviews. After reviewing the titles and abstracts of initially identified 19 potential works and excluding those that did not meet the proposed criteria, four scientific articles were selected for full reading and summary compilation.
Results
In older studies, the effect of radiofrequency ablation (RFA) on reducing cervicogenic headache demonstrated limited benefits in patients' pain. However, in all selected article, this therapeutic modality improved the duration and the intensity of this type of pain in more than 50% of cases, mainly measured by the visual analog scale. There is ongoing discussion about the extent to which RFA can be effective, considering that in some studies, it showed improvement at the beginning of treatment but did not provide significant long-term results compared to other therapeutic techniques. A considerable rate of complications has been reported, between 12% and 13%, but this can be reduced with the help of imaging techniques that guide ablation. Further studies are still needed regarding the use of RFA to better characterize its therapeutic variables and know its effects on larger-scale clinical trials.
Conclusion
Several studies point to the benefits of RFA in the treatment of cervicogenic headache, especially when pharmacological options prove to be insufficient, but broader research into the effectiveness of the technique is still needed. Technological advances are essential for the development of alternative treatments for different groups of neurological disorders, such as headaches, which are so present in clinical practice.

Keywords: cervicogenic headache; radiofrequency ablation; secondary headache disorders; neck pain; pain manage-ment.

Headache Medicine

Luminosity as a Trigger for Headaches in Adolescent

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Categoria: Cefaleias em Crianças e Adolescentes

Introduction
The school environment requires adequate lighting for optimal performance in the teaching and learning process. The amount of luminosity has been linked to increased headache frequency in adults, but it is still not well understood whether this impairment is already present from the early years of the condition.
Objective
To identify the frequency of headaches in adolescents and correlate it with lighting comfort.
Materials and Methods
Analytical cross-sectional study conducted in a public school in São Luís, MA. For luminosity measurements, a portable digital luxmeter Sunche, model HS1010, with a scale ranging from 0 to 200,000 lux, was used every two hours between 08:00 am and 05:00 pm, following the recommendations of NBR 5413, NBR 5382, NBR 8995-1, NBR 15215-4, without the presence of students. All high school students who were properly enrolled were included. Questionnaires involving questions about sociodemographic data and the Headache Screening Questionnaire (HSQ-Br) to screen headache types were administered. Luminosity values were stratified according to the rules of NBR 5413: 0-200 lux (minimum values), 201-299 (intermediate values), and above 300 (recommended values). Chi-square tests, Student's t-tests, and Odds Ratio (OR) were applied, considering a statistical significance level of $p \leq 0.05$.
Results
A total of 234 students were evaluated, with the majority being 53.85% (n=126) male (p,o,o%), with a mean age, weight, and height of 16±03 years, 60±11.15 kg, 168±9.18 m^2, respectively. 70.51% (165) reported experiencing headaches, with the majority being screened for episodic tension-type headache 53.45% (n=124) of moderate intensity (n=105). The evaluated rooms had intermediate luminosity values ranging from 201 to 299 lux. A total of 12.39% (n=29) indicated luminosity as a trigger for headaches, but without significance (p=0.242).
Conclusion
A high frequency of headache complaints was observed among adolescents, but there was no association with the level of luminosity, which may be related to the fact that most individuals had episodic tension-type headaches and the luminous levels did not exceed the threshold for visual discomfort. Additionally, the luminosity level was below the recommended standards of NBR 5413.

Keywords: Luminosity; Adolescents; Headache.

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Headache Medicine

Sleep Disorders vs. Headache: Who is the Villain?

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Categoria: Outros

Introduction
It is known that sleep is a natural process, fundamental to the homeostasis of animal life. From this perspective, it is known that almost 50% of the world's population suffers from some sleep disorder. Also, it is estimated that 50 to 75% of individuals suffer from headaches, and that their cause has to do with sleep. On the other hand, there is a paradox, as headaches can also be restored with sleep.

Objective
To understand the relationship between sleep disorders and primary headaches, from the perspective of establishing causalities.

Methods
In order to achieve this objective, an integrative literature review was conducted, consisting of articles from the PubMed, Scielo and Virtual Health Library - VHL from January 2018 to May 2023, using the descriptors "headache", "sleep disorder" and "impact" associated using the Boolean operator "AND". In this process, articles written in English and Portuguese related to the topic were selected and duplicate articles were excluded, as well as articles unrelated to the objective.

Results
Of the 383 articles found, 8 were chosen that met the selection criteria, so that it was found that sleep disorders (insomnia, obstructive sleep apnea and restless legs syndrome) have a great influence on headaches. Being subdivided into different groups based on their relationship with sleep: migraine with and without aura, cluster headache, hypnic headache and paroxysmal headache, hemicrania are reported to be intrinsically related to sleep. In some articles, several population-based studies evaluated the impact of sleep disorders and migraine. However, most of these population-based studies rely on self-report measures of sleep rather than objective measures. According to the results of the prospective population-based Nord- Trøndelag Health study (HUNT-2 and HUNT-3), individuals with migraine had a 2-fold increased risk of developing insomnia 11 years later compared to individuals without migraine, and this risk it was higher in those with at least 7 days/month of migraine. Results from longitudinal cohort studies further support the hypothesis that insomnia may be generally associated with headache and tension-type and unclassified headaches.

Conclusion
It is evident that there is a significant connection between these two conditions. The results obtained reveal that sleep disorders play an important role in triggering and intensifying various forms of headache. Furthermore, population studies highlight the association between migraines and insomnia, with a substantially higher risk of developing insomnia in individuals who suffer from migraines. It is also plausible to show that when there is sleep deprivation, or sleeping excessively, they can also act as triggers for the occurrence of migraines, especially in individuals already suffering from the disease. In short, it can be said that sleep disorders and headaches are villains that have the power of feedback. Therefore, these diseases deserve continued attention both in research and in clinical practice, aiming to improve the quality of life of patients suffering from these conditions.

Keywords: Headache; Sleep disorder; Insomnia; Impact.

Headache Medicine

Effectiveness of Treatment Through Nervous Electrical Stimulation in Chronic Migraine

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Categoria: Neuromodulação Na Cefaleia

Introduction
Migraine is a primary headache disorder classified as the third most prevalent disorder worldwide. It is characterized by episodes of intense pulsating headache, typically unilateral, associated with nausea, vomiting, photophobia, and phonophobia. Predominantly more common in women, migraine is a debilitating condition for both sexes and considered a public health problem due to its interference with individuals' daily lives and its underdiagnosed and undertreated nature. Currently, in addition to pharmacological strategies for treatment, there is discussion about the application of non-invasive methods of brain or nervous stimulation that may be effective in managing migraine, but with less impact on patients' quality of life.

Objective
To identify in the literature the effectiveness of chronic migraine treatment through nervous electrical stimulation. Methods
An integrative literature review was conducted, with data obtained from the Pubmed and Embase databases. It included texts related to the topic in Portuguese or English, with a temporal range between 2018 and 2023, and full-text articles. The logical operators AND and OR were combined, resulting in 91 manuscripts. After applying inclusion and exclusion criteria to remove duplicates, 20 publications were analyzed in full.

Results
In the analysis of the 20 eligible publications, it was observed that 17 articles showed effective results in the treatment of migraine with nervous electrical stimulation. Among these, four demonstrated the effectiveness of transcutaneous stimulation of the occipital nerve, particularly in reducing the intensity and number of days with pain. Three highlighted benefits from transcutaneous stimulation of the vagus nerve, both auricular and cervical branches. Additionally, three publications emphasized the effectiveness of supraorbital transcutaneous stimulation, including in acute treatment, as this modality is predominantly used in the prophylaxis of chronic migraines. The results also indicated effectiveness in electrical stimulation of the peripheral facial nerve and benefits in the percutaneous mode of occipital nerve stimulation. Only two manuscripts were inconclusive regarding the effectiveness of nervous electrical stimulation in migraine treatment.

Conclusion
Based on the findings, there is evidence of potential effectiveness in methods involving nervous electrical stimulation for the treatment of chronic migraine. The analysis conducted revealed possible benefits regarding migraine pain, as well as the attenuation of the harms and risks associated with medication, which is part of the first-line intervention. However, it is worth noting that there are still few specific studies for each type of nervous stimulation, which hinders a concrete and sufficient analysis to establish the desired relationships. Therefore, further research is needed to delve deeper into the topic and provide robust evidence on the effectiveness of nervous stimulation for patients with chronic migraine.

Keywords: Transcutaneous Electric Nerve Stimulation; Migraine; Cronic; Refratory.

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Headache Medicine

Neuromodulação como forma de tratamento para Cefaleia pós Craniotomia: um relato de caso

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Categoria: Neuromodulação Na Cefaleia

Introdução
A dor é uma experiência subjetiva e multidimensional, suas causas são geralmente multifatoriais e podem ter caráter crônico. A cefaleia pós craniotomia é a principal queixa de dor pós operatória entre os pacientes, caracterizada como intensa e moderada, pois decorre do ato cirúrgico e da irritação das meninges.
A dor pós-operatória exige avaliação sistemática pela equipe de saúde para melhor manejo do quadro clinico, e geralmente é diretamente proporcional ao grau de estimulação das terminações nervosas livres e ao tamanho da incisão, ou seja, quanto maior for à lesão tecidual, maior será a intensidade da dor pós- operatória.
O gerenciamento da cefaleia envolve uma gama de tratamentos farmacológicos e não farmacológicos. O bloqueio do nervo periférico é uma opção viável, segura e eficaz de tratamento para cefaleias refratárias ou intensas. O bloqueio algico através da neuromodulação é uma proposta invasiva de controle álgico para modelar a atividade elétrica do sistema nervoso e alterar a percepção dolorosa. indicada para casos crônicos e não responsivos ao tratamento otimizado convencional.
A modulação da inibição de vias antinociceptivas, como a estimulação do nervo occipital se mostrou eficaz no controle da cefaleia. A neuroestimulação permite o controle da quantidade de energia elétrica utilizada para estimulo dos nervos com a finalidade de promover o alivio da dor. A estimulação do nervo supraorbital apresentou boa eficácia no tratamento da cefaleia. E a combinção dos nervos occipital e supraorbitário proporcionam maior eficácia.
A subterapia de percepção dolorosa (FAST) proporciona o rápido alivio da dor após a ativação do sistema com uso de baixa voltagem, sem a necessidade de provocar parestesia para alcançar analgesia clinica.
O objetivo deste artigo é descrever um relato de caso e discutir o papel do implante de eletrodo medular no manejo das cefaleias pós craniotomia.
Relato de Caso
Paciente de 35 anos, sexo masculino, solteiro, apresenta história de cefaleia, após craniotomia, persistente e incapacitante há 10 anos. Com historia previa de HSA submetido a craniotomia para clipagem de aneurisma cerebral, há 10 anos. Após a cirurgia evoluiu com cefaleia do tipo paroxística de forte intensidade, com características de dor neuropática na região frontal do crânio, próximo a região de inervação sensitiva do nervo supraorbital e supratroclear associada á sinal de tinel positivo ao exame neurológico, e percepção de dor a percussão de região de zigomático-temporal. Apesar de tratamento otimizado para dor com gapapenoides, opiodes e antiinflamatórios, o paciente não apresentou melhora do quadro álgico. Foi então submetido a bloqueios seriados com anestésicos locais associados a corticoides, reproduzindo boa resposta, por 3 meses, porém temporária de curto prazo. E assim foi submetido a implante de eletrodo cortical para neuromodulaçao com implante de gerador FAST na região do nervo occipital maior e menor, e nervos supraorbital e supratroclear. Em menos de 20 minutos após implante e programação do eletrodo o paciente já encontrava-se sem dor, e permanece com controle do quadro álgico, sem queixas de cefaleia e dor neuropática associada desde a realização do procedimento. Em consulta de retorno, o paciente mantinha controle dos sintomas e não apresentava complicações decorrentes do procedimento. Paciente permanece controle álgico e sem dores.

Palavras-chave: neuromodulação;cefaleia pós craniotomia;tratamento de cefaleia.

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Management of Cervicogenic Headache: Evaluation of Therapeutic Options

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Categoria: Cefaleias Secundárias

Introduction
Cervicogenic headache is pain secondary to musculoskeletal problems in the neck or cervical spine, such as muscle tension, injuries, herniated discs or dysfunction in the cervical joints. The pain is described as throbbing and can extend from the lower base of the scalp to the eye area. The main manifestations include stiffness and pain in the neck that radiates to the head, cervical sensibility to pressure and movement, unilateral headache, nausea and dizziness, as well as photophobia and phenophobia. These factors lead to a reduction in cervical mobility, as well as the life quality of the affected individuals.

Objective
The objective of this study was to evaluate the scientific literature on available treatments for cervicogenic headache, seeking to analyze the effectiveness of physiotherapy as a therapeutic approach in the management of headache, the effectiveness of manual therapy, including cervical spine manipulation and mobilization techniques, and the usefulness of the major occipital nerve block as a therapeutic procedure in the treatment of cervicogenic headache.

Methods
We conducted a literature review of studies published from 2017 onwards, consulting the PubMed and Scielo databases. The search terms included keywords such as "secondary headache", "cervicogenic headache" and "cervical headache". Relevant studies related to the diagnosis, treatment and therapeutic approaches for cervicogenic headache were selected.

Results
The results found in the studies indicated that various techniques have positive effects on relieving the symptoms of cervicogenic headache. These include spinal manipulation, Mulligan's sustained natural apophyseal glide (SNAG), applying pressure to trigger points, relaxing the suboccipital muscles, Jones' technique and spinal mobilization with translational movements. Spinal mobilization with translational movements has been shown to provide immediate relief, even with just one session, possibly due to the mechanical stimulus that can activate pain-reducing mechanisms, resulting in immediate relief.
In addition, techniques that affect local blood flow, such as the Jones technique and the application of ischemic pressure, also produced significant improvements with a limited number of sessions. It was noted that manual techniques that apply gradual pressure were able to reduce the intensity of cervicogenic headaches, possibly due to the reorganization of the fascia, allowing areas of adhesion and macromolecule complexes to return to a healthy state. Surprisingly, the effectiveness of this therapy does not seem to be related to the number of sessions, as more satisfactory results have been obtained with fewer sessions.
In the context of occipital nerve blockade, improvement was observed after one week of treatment, with an immediate reduction in cervicogenic headache within 7 days, although this improvement was less evident in the first 2 days. It is believed that the block reduces exaggerated sensitivity and possibly antagonizes a process called "wind-up", thus explaining the prolonged improvement in cervicogenic headache symptoms.

Conclusion
The therapies analyzed in this review have had a positive impact on the manifestations of cervicogenic headache, resulting in significant improvements in the quality of life and mobility of affected individuals. These therapies have diverse effects, with some, such as spinal manipulation, providing long- term improvements, while others, such as the Jones technique and the application of ischemic pressure, produce more immediate results. Combining these therapies could be an interesting approach to the effective management of cervicogenic headache. In addition, the inclusion of muscle-strengthening exercises is fundamental to recovery from this condition.

Keywords: Cervicogenic headache; Physical therapy; Manual therapy; Major occipital nerve block.

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Hospital admission of patients treated in emergency with a diagnosis of headache

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Headache symptoms represent one of the most frequent reasons for emergency department visits worldwide. Primary headaches are autonomous headaches, while secondary headaches are caused by an underlying medical condition. Difficulty in recognizing a secondary headache can result in detrimental health outcomes, such as permanent neurological deficits, loss of vision, and even death. Therefore, it is imperative that in the emergency department, patients undergoing a thorough physical examination when presenting with a headache as their main complaint, allowing for the determination of any associated risks in the evaluation, justifying the need for hospitalization for further investigation or therapeutic management.

Objective
To determine the hospitalization conversion rate among patients treated with a diagnosis of headache in an emergency department.

Methods
This is a cross-sectional study, utilizing secondary data sources extracted from the Electronic Patient Record through a hospital tracking program based on Business Intelligence. The research was conducted at a private hospital located in the city of Recife, Pernambuco, Brazil, from January to June 2023. All emergency room visits that resulted in hospitalization were evaluated, with patients transferred to other services being excluded. Red flags based on the SNNOOP10 list, justifying hospitalization for clinical investigation, were analyzed. Data were stored in an Excel spreadsheet, and variables were analyzed using simple descriptive statistics.

Results
A total of 49,104 patients were treated in the emergency department. Among these, 2,304 (4.7%) received a medical diagnosis of headache. The hospitalization conversion rate was 4.2% (n=98). Among the hospitalized patients, the majority were female (75.5%; n=74), with an average age of 43 years. The length of stay in the emergency department ranged from 2 to 20 hours, with an average of 7 hours. In terms of risk classification, following the Manchester Protocol, the majority (57.1%; n=56) of patients who were hospitalized were considered "low urgency." The main red flags identified were "new headache in patients over 50 years of age, pregnant, or postpartum," "headache triggered by cough, physical exerciseor or sexual activity " and "change in pattern or emergence of new headache in patients with migraines." There was an average of 1.3 imaging tests per patient upon admission, with the most prevalent being cranial computed tomography (53.5%; n=68), cranial magnetic resonance imaging (9.4%; n=12), and cranial magnetic resonance angiography (8.6%; n=11). The length of hospital stay ranged from 1 to 48 days, with an average of 6 days and the main diagnosis at discharge was status migrainosus.

Conclusion
The group that transitioned from the emergency department to hospitalization consisted of 98 cases, predominantly adult women, representing a conversion rate of 4.2%. The average length of hospital stay was 6 days. Patients with longer hospital stays presented with secondary headaches due to meningitis (n=2), transient ischemic attack (n=2), and intracranial expansive lesion (n=1).

Keywords: Headache; Headache Disorders; Hospitalization.

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Relationship between trigeminal neuralgia and multiple sclerosis : A Systematic Review

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Categoria: Neuralgia do Trigêmeo e outras Neuropatias Cranianas

Introduction
Multiple sclerosis (MS) is an autoimmune disease that affects the central nervous system characterized by demyelinating lesions and clinical episodes of transient focal neurological deficits that remit. Among MS patients, there is a significant correlation with trigeminal neuralgia (TN), a condition in which chronic episodes of unilateral trigeminal nerve pain occur.

Objective
To conduct a literature review to understand the epidemiological, pathophysiological, clinical, and treatment relationship between MS and TN.

Methods
A literature search was performed using the DeCS/MeSH descriptors "trigeminal neuralgia" and "multiple sclerosis." The boolean operator 'AND' was used between the descriptors, and the search was conducted in the scientific databases PubMed and Web of Science. Inclusion criteria for articles were original research works published in English or Portuguese between 2000 and 2023.

Results
A total of 230 articles were found according to the search mechanism, of which 22 were included, analyzed by two independent authors, following PRISMA recommendations.
Regarding epidemiology, patients with MS have a significantly higher prevalence of TN than the general population, with TN being the most common neuropathic pain form related to MS. The prevalence of TN in MS patients ranges from 1.1% to 6.6%, with a higher frequency in females and older patients.Regarding pathophysiology, the relationship between TN and MS is not well understood, but preclinical studies suggest activation of glial cells and metabolic changes due to MS in the trigeminal nerve may be involved in trigeminal axis sensitization and the origin of TN. Additionally, magnetic resonance imaging (MRI) studies suggest that MS lesions in regions of the trigeminal root entry zone, trans-cisternal nerve, or pontine nucleus are more likely to develop TN, potentially indicating that TN originates from demyelination of trigeminal system afferents. Moreover, there is a significant association between TN and lesions in the anterior cingulate cortex, dorsolateral prefrontal cortex and secondary somatosensory cortex.In terms of clinical presentation, MS patients with TN experience shorter and less enduring episodes of pain than those with primary TN, but the pain is significantly more intense than in primary TN patients.As for treatment, first-line therapy for MS patients with TN includes anticonvulsants, such as carbamazepine and calcium channel blockers, like gabapentin, to alleviate neuropathic pain symptoms. Tricyclic antidepressants like amitriptyline have also shown significant effects on neuropathic pain.Opioids, such as morphine and oxycodone, are second-line treatments, primarily for acute crises, but are used cautiously due to the risk of dependency.
Surgical treatments are indicated for refractory patients, with microvascular decompression being more effective in patients with lower MS symptom burdens and less medication use. Another treatment with similar effectiveness is trigeminal nerve glycerolysis. Gamma Knife Radiosurgery is a non-invasive radiosurgery where two gamma ray beams are directed at TN lesions, and it has proven highly effective with low symptom recurrence in patients with both TN and MS.

Conclusion
Patients with MS have a statistically significant association with TN compared to the general population and experience TN symptoms more frequently and intensely. The pathophysiological relationship between TN and MS is not well understood, but there is a correlation between increased TN in MS patients with lesions near the pons. First-line treatment for MS patients with TN primarily includes gabapentin and carbamazepine, while surgical treatments are indicated for refractory patients. Further studies are needed to understand the relationship between MS and TN, particularly those correlating MS lesions with TN.

Keywords: Multiple sclerosis;Trigeminal neuralgia;Systematic Review.

Headache Medicine

Epidemiological analysis and use of psychotropic drugs and opioids in patients with migraine with aura

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Migraines are commonly divided into 4 phases: prodrome, aura (non-obligatory), headache and resolution (postdrome), the latter being more common in patients who also present aura. In 1870, Hubert Airy described his migraine attack with aura, which he referred to as an angled sparkling border that usually spread in a convex shape, leaving a scotoma in its path. Nowadays, it is known that aura can present itself in different ways, being defined as a well-localized neurological manifestation, which, gradually, appears and may begin before or with the headache, lasting from 5 to 60 minutes. Visual aura tends to be the most common, manifesting itself in 90% of the migraine with aura population. Its manifestations usually present themselves as scotomas, scintillations and fortification spectra that appear in a determined part of the visual field, which then spreads and grows, similar to what was described by Airy in the XIX century. According to an epidemiological study carried out in Brazil, 15,2% of the population has migraine, 25% of which have aura. The Brazilian Academy of Neurology, in 2018, published a National Protocol for the Diagnosis and Management of Headaches in Emergency Units in Brazil, which advises the use of psychotropic drugs, specifically chlorpromazine, only for patients who arrived at the emergency room in a state of migraine disease, experiencing pain for no less than 72 hours and with no response to treatment with dipyrone, ketoprofen and dexamethasone. Furthermore, the use of opioids is still not recommended, suggesting that there are other medications with the same effect, but less risk of dependence.
Objective
To describe the epidemiological profile of migraine with aura in a large emergency in Recife, Pernambuco and analyze the use of psychotropic drugs and opioids during migraine attacks.
Methods
This is a cross-sectional study, with data source extracted from the Patient's electronic medical record through a hospital monitoring based on Business Intelligence. The research was carried out in a private hospital in Recife, Pernambuco, Brazil, from January 1 to June 30, 2023. All emergency room visits with migraine with aura were evaluated. The variables were analyzed using simple descriptive statistics.
Results
60 patients with migraine with aura were treated, 90% (54/60) of whom were women. The average age of the patients was 36 years old. The average time spent in the emergency room was 2h56min, with the outcomes being: 6,6% (4/60) were discharged after care, 28% (17/60) were discharged after doctor's appointment, 5% (3/60) were discharged after medical exams, 20% (12/60) were discharged after medication, 32% (19/60) were discharged after clinical improvement, 6,6% (4/60) evaded and 1,6% (1/60) were hospitalized. The frequency of imaging exams per patient was 0,2 exams/patient, of which 92% (12/13) were computed tomography of the skull and 8% (1/13) of facial sinuses. According to the Manchester Classification, 20% (12/60) of patients were described as "yellow", 3% (2/60) as "blue" and 77% (46/60) as "green". Psychotropic drugs were prescribed at a frequency of 0.13 per patient, of which 62% (5/8) were chlorpromazine and 38% (3/8) were clonazepam. Opioids were prescribed at a frequency of 0.15 per patient, of which 78% (7/9) were tramadol and 22% (2/9) were codeine. Conclusion: The majority of patients treated for migraine with aura are women of economically active age. 13% of the patients used some type of psychotropic drug, even though it is not considered first line treatment by the Headache Management and Diagnosis Protocol. Despite the use of opioids being discouraged by the protocol, 15% of patients were prescribed tramadol or codeine, indicating the presence of some other underlying pathology or professional's lack of knowledge of the protocol.

Keywords: Migraine with Aura; Analgesics, Opioid; Psychotropic Drugs; Epidemiological Investigation.

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Technology and Innovation Project - Cervical Range of Motion Digital – (Crom- D) Device for Assessing The Range of Motion of The Cervical Spine

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Introduction
The assessment of cervical spine range of motion (ROM) is more complex due to the associated movements of the upper thoracic spine. However, this measurement provides crucial information for diagnosing musculoskeletal dysfunctions, analyzing disease progression, evaluating the effects of different treatments, and monitoring patient progress during rehabilitation. Radiography, considered the gold standard, is costly and exposes individuals to radiation. Goniometers and inclinometers lack good intra- and inter-examiner reproducibility. Currently, the most reliable and secure instrument available is the Cervical Range of Motion (CROM) device, but due to its importation, it comes with a high cost and is difficult to acquire.

Objective
To develop a digital and user-friendly instrument for assessing ROM in flexion, extension, lateral flexion, and rotation of the cervical spine. MATERIALS AND

Methods
We developed an MPU6050 sensor with an Organic Light Emitting Diode (OLED) display, an Arduino with a power source, connection cables, and a 5-volt power supply. This setup measures and maintains orientation and angular velocity during cervical spine ROM assessment. It was constructed with a three-axis accelerometer and gyroscope (X, Y, and Z).

Results And Discussion
In initial tests, the device proved effective in evaluating all four measures of cervical ROM (flexion, extension, lateral flexion, and rotation) without the need to change the device or reposition the patient. It provides ROM angles from 0 to 120 degrees, does not exhibit parallax error, and, being digital, is not subject to observer measurement errors. Experimental tests are currently being conducted to adapt the device into a plastic headpiece prototype that can record ROM in all planes without the need for anatomical markings or device repositioning during the entire assessment. This prototype aims to provide safety and prevent device displacement during evaluations.

Conclusion
The CROM-D device for assessing cervical ROM has been developed, demonstrating easy usability and accuracy in preliminary tests. Future research will focus on assessing the reliability and validity of this instrument compared to the gold standard for cervical ROM evaluation.

Keywords: Cervical spine; CROM; assessment.

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Association Between Diet and Nutrition in the Pathophysiology of Migraine: a Literature Review

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Categoria: Fatores Psicológicos e Comportamentais no Manejo Das Cefaleias

Introduction
Migraine is one of the primary headache disorders, characterized as a chronic, multifactorial, and complex condition influenced by genetic and environmental factors. Migraine attacks can be alleviated or triggered depending on dietary choices. As triggers, one can mention dietary habits such as low fluid intake and the consumption of specific foods, such as alcohol, coffee, chocolate, and citrus fruits. Weight can also be related, as indicated by some studies.

Objective
To discuss the association between dietary and nutritional factors in migraine attacks.

Methods
This is an integrative literature review. A bibliographic search was conducted in the PubMed and Scielo databases to identify studies evaluating the effect of diet on migraine. The search strategies combined free-text terms and outcomes of interest. The search terms used were "diet," "migraine," "nutrition," and the Boolean operator "and." Initially, 130 articles were found. After applying the analysis filters, 6 were selected for inclusion in the study.

Results
Observational studies indicated that dietary triggers were implicated in triggering migraines in 27% of cases, with alcohol and caffeine consumption being the dietary patterns most strongly associated with the frequency of migraine attacks. A systematic review demonstrated that fasting and alcohol were triggers in 44% and 27% of patients, respectively. When averaging data from three studies, it was observed that alcohol consumption is associated with migraines in 24.5% of patients. On the other hand, dietary interventions such as low-fat diets, high omega-3 and low omega-6 diets, low-sodium diets, and ketogenic diets have been shown to reduce migraine attacks. Several randomized clinical trials have concluded that vitamin B supplements (folic acid, vitamin B6, and B12) significantly reduced the intensity and disability caused by migraine attacks, and some studies have observed that riboflavin (vitamin B2) reduced the frequency of attacks, with the hypothesis that increased riboflavin availability may improve mitochondrial function. Probiotic supplementation resulted in nearly complete relief for 60% of participants in a Brazilian study, with 20% experiencing improvements in their quality of life. Furthermore, studies have reported that after bariatric surgery, patients experienced a reduction in migraine severity following an average weight loss of 56%. Researchers found that an increase in BMI was followed by an increase in the frequency of chronic migraines, supporting the hypothesis of previous research. Overweight patients had more frequent and intense headache episodes compared to patients with normal weight.

Conclusion
Certain dietary interventions hold promising prospects in the treatment of migraines. Managing dietary quality can be an effective strategy to mitigate the severity of migraine attacks, regardless of the nutritional status and weight fluctuations of patients. Additionally, improvements in dietary habits have shown a correlation with reduced migraine severity and potential inflammation reduction, suggesting that dietary quality improvement may be an underlying mechanism. However, while numerous studies have pointed to a relationship between diet and migraines, it is crucial to emphasize that these associations need to be confirmed by high-quality longitudinal studies. Therefore, it is imperative to continue research on this topic with the aim of achieving robust evidence before they can be recommended as gold-standard treatments in clinical practice.

Keywords: Diet; Headache; Migraine; Nutrition; Pathophysiology.

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Headache Medicine

The Impacts of Headaches on Individuals' Mental Health: a Literature Review

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introduction
Headache, or head pain, is a condition characterized by frequent pain affecting the head unilaterally or bilaterally. The main symptoms include nausea, a tendency to vomit, light and sound sensitivity, which worsen with movement. Furthermore, headache also presents itself as a multifactorial neurological disorder, varying in intensity, and is classified as one of the most disabling health conditions by the World Health Organization (WHO). It is estimated that approximately 50% of adults experience some form of headache at least once a year, and 10% suffer from chronic headaches (CH). In Brazil, surveys indicate an average prevalence of headaches in adults of 70.6%. Moreover, the relationship between headaches and mental health is complex and multifaceted, involving biological, psychological, and social aspects. Headache is a common symptom in various neurological and psychiatric conditions, but it can also be a risk factor or exacerbate the development or occurrence of mental disorders. Conversely, mental health influences the perception, tolerance, and management of pain, potentially interfering with the quality of life and treatment of headache patients.

Objective
To discuss the relationship between headaches and the mental health of individuals.

Methods
This is an integrative literature review. A bibliographic search was conducted based on articles published in journals, from which secondary data were extracted. Access to articles was obtained through the PubMed and Scielo databases, using the keywords "headache," "mental health," "migraine," "psychological factors," and the Boolean operator "and." Initially, 89 articles were found. After applying analysis filters, 4 were selected for inclusion in the study, excluding works that did not meet the defined time frame, the addressed theme, or duplicate articles.

Results
Studies indicate that mood disorders and anxiety are present in 70 to 80% of patients suffering from migraine, one of the types of headaches. In another study, moderate to severe depression was present in 58.7% of migraine patients. A Brazilian study showed that just over 50% of patients with CH had or have episodes of major depression (MD), often accompanied by significant symptoms of anxiety, fear, and avoidance behavior, with 68% meeting the criteria for generalized anxiety disorder. Furthermore, another Brazilian study concluded that the chance of developing a headache is 1.8 times higher when there is a prevalence of common mental disorders (CMD). Additionally, a meta-analysis supports the suspicion of a relationship between migraines and CMD, with a 1.95 times greater chance of developing both conditions.

Conclusion
There is a clear prevalence of depressive disorders and anxiety disorders in patients diagnosed with chronic headaches and migraines. Therefore, it is important to further clarify the correlation between the comorbidity of chronic headaches associated with mental disorders, as they are related to a worsening of patients' social and economic quality of life. This can help improve the effectiveness of treatment for these individuals and, as a result, reduce the prevalence of headaches and CMD.

Keywords: Headache;Migraine;Mental Health.

Headache Medicine

Cutaneous Allodynia Associated With The Use Of Personal Protective Equipment During The Covid-19 Pandemic

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Introduction
Headache is defined as any pain located in the head and can have direct and indirect consequences. The use of personal protective equipment (PPE) can be a trigger for headache episodes, especially in individuals with cutaneous allodynia. Objective: To assess the association between headache, the use of personal protective equipment (PPE), and the presence and severity of allodynia in healthcare professionals during the COVID-19 pandemic.

Materials and Methods
A cross-sectional study was conducted on individuals of both genders, aged ≥ 18 years, working three or more days a week, wearing craniofacial PPE for more than two hours. Those who did not work directly with COVID-19 patients were excluded. The frequency, intensity, and duration of headache and the use of PPE were assessed through a structured questionnaire. The presence and severity of allodynia were evaluated using the 12-item Allodynia Symptom Checklist/Brazil (ASC-12/Brazil).

Results and Discussion
A total of 160 professionals were evaluated, with 106 having headaches and 54 without headaches. The most commonly used PPE items were the hospital mask (n=145, 90.6%) and N95 mask (n=110, 68.7%). Significant differences were observed between the periods before and during the pandemic regarding the number of individuals with headaches (n=74, 46.2% vs. n=106, 66.2%, p=0.001), headache intensity (p=0.001), headache frequency (p=0.001), and headache duration (p=0.001). A significant difference was also observed between the group with headaches and the group without headaches in terms of the presence of allodynia (p=0.001), with mild severity being the most prevalent.

Conclusion
The number of cases, frequency, intensity, duration of headaches, and the severity of allodynia significantly worsened in healthcare professionals during the COVID-19 pandemic. The use of PPE may be related to the worsening or onset of headaches, as well as the worsening of allodynia.

Keywords: Headache;personal protective equipment;COVID-19.

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Headache Medicine

Hospitalization for migraine and other headache syndromes at Walter Cantídio University Hospital between 2018 and 2022: an epidemiological analysis

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Headache is defined as any painful process referred to in the cephalic segment , which can affect one of the facial or cranial structures. This term is characterized as one of the main complaints in medical care. Among the different types of headache, migraine stands out, which presents itself as a moderate to intense, usually unilateral, late and often accompanied by nausea, vomiting and discomfort due to light, noise and smells. Furthermore, in addition to migraine, it is necessary to highlight the existence of other pain syndromes headaches, such as tension headache, chronic post-traumatic headache and vascular headache, which, together with migraine, substantially harm the lives of many people. According to Brazilian Headache Society(SBCe), approximately 140 million people in Brazil are affected by some type of headache, a condition with substantial social and economic implications, leading to work absenteeism and contributing to anxiety and depression. Therefore, based on the Walter Cantídio University Hospital, within the Medicine College complex of the Federal University of Ceará, it is important to carry out epidemiological studies with the aim of monitoring the evolution of this situation over the years.
Objective
to evaluate the epidemiological characteristics of hospitalizations for migraine and other headache syndromes between 2018 and 2022 at the Walter Cantídio University Hospital (HUWC).
Methods
Cross-sectional, analytical study with a quantitative approach, covering a sample of 18 individuals hospitalized due to migraine and other headache syndromes (CID-10 G43 and G44) at the Walter Cantídio University Hospital between 2018 and 2022 using information from the Information System as a database SUS Hospitals (SIH/SUS). The variables used were: year of hospitalization, municipality, age group, sex, total value, type of service and length of hospitalization.
Results
The general population sample consisted of 18 hospitalized individuals, all coming from Fortaleza, because of CID-10 G43 and G44 at the Walter Cantídio University Hospital between 2018 and 2022. Among them, 33.3%(6) were male and 66.6%(12) were women. Regarding the nature of the service, 100% of them were elective. Analyzing the age range of patients, the 3 most prevalent are 10 to 14 years old(4), 5 to 9 years(3) and from 30 to 34 years(3). In relation to the years analyzed, 1 case in 2018, 3 in 2019, 6 in 2020, 4 in 2021 and 4 in 2022. The total cost of hospitalizations during this period was 13.128,81 reais to the establishment, with emphasis on for the year 2020, which recorded a value of 5.520,43 reais, that is, approximately 41.3% of the total. In terms of the length of stay, hospitalized patients spent a total of 115 days across all the years analyzed, more specifically 9 days in 2018 (7.8%), 17 days in 2019(14.8%), 51 days in 2020(44.3%), 20 days in 2021(17.4%) and 18 days in 2022(15,6%).
Conclusion
the present study revealed that, despite the small number of patients admitted for CID- 10 G43 and G44 at the Walter Cantídio University Hospital between 2018 and 2022, there was a change in behavior in the number of people hospitalized in the years 2020, 2021 and 2022, both in relation to an absolute increase and the most significant annual cost, in addition to a notable increase in days of stay in this period, which reflect the hospital overload in relation to the Covid-19 pandemic. Additionally, it's important to highlight the higher prevalence of female and young patients among those hospitalized in the years under examination.

Keywords: Migrane; Epidemiology; Hospital.

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Headache Medicine

Overuse of analgesics in idiopathic intracranial hypertension patients of a tertiary hospital in Fortaleza

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Categoria: Cefaleias Secundárias

Introduction
Idiopathic intracranial hypertension (IIH) is a condition of unknown etiology characterized by elevated intracranial pressure and papilledema, without evidence of intracranial expansive lesion or cerebral venous thrombosis, as assessed through imaging examinations. Headache is the most common symptom of IIH, reported in more than 90% of patients. A common issue for patients with IIH is the overuse of analgesics, The worldwide prevalence of excessive analgesics use is 0.7-1.7%, being more frequent in women. Observed risk factors for the excessive use of painkillers include female gender and obesity, both common in patients with IIH. Medication overuse constitutes an important risk factor for headache chronification.

Objectives
To assess the prevalence of patients with IIH, followed in the outpatient clinic of the General Hospital of Fortaleza, who use excessive analgesics.

Methods
This is a cross-sectional study based on quantitative and qualitative analysis of medical records, patient interviews, and literature review between June and August 2023. Seventeen patients over 18 years old with IIH who met Friedmann's criteria (2013) for IIH diagnosis and had been followed in the Headache Outpatient Clinic of the General Hospital of Fortaleza for at least 3 months were included. Data were obtained through patient interviews to analyze medication overuse based on headache diaries. The sample consisted entirely of female patients with an average age of 38 years, ranging from 27 to 55 years. The average follow-up time was 4 years, ranging from 01 year to 15 years, with a median of 2 years. The primary headache phenotype was migraine with signs of chronification (70%). Regarding treatment, 23% (N=4) were not receiving any treatment, and 77% (N=13) were using some medication. Five patients were using acetazolamide (30%); one patient was using topiramate (6%); three were using a combination of acetazolamide and topiramate (18%); and three were using a combination of acetazolamide, topiramate, and a serotonin reuptake inhibitor (18%). As for excessive analgesic use, 23% (N=4) were overusing, while 77% (N=13) were not.

Results
Excessive analgesic use was evaluated, as it is considered one of the factors associated with headache chronification in patients. Some primary headache studies indicate the prevalence of this excessive use in around 25-50% of patients. The prevalence in our study was 23%, a lower percentage compared to these studies. This discrepancy in large studies highlights the importance placed on raising awareness about excessive analgesic use in the outpatient setting. In our study, we were able to establish a relationship between excessive analgesic use and higher scores on the headache impact test (HIT-6), increased headache frequency, and the presence of psychiatric comorbidities ($p<0.05$). However, there was no significantly association with a decrease in quality of life.

Conclusion
Medication overuse was identified in 23% of patients and is associated with an increase in headache frequency, as well as greater headache impact and the presence of psychiatric comorbidities; however, it was not related to a decrease in quality of life. It seems prudent that all IIH patients with headache are warned about avoiding excessive analgesic use to significantly improves headaches. If not addressed, medication overuse headache may prevent the optimization and effectiveness of preventative treatments.

Keywords: Idiopathic Intracranial Hypertension; Medication Overuse; Chronic Headache.

Headache Medicine

The Importance of Migraine Lalophobia and its Association With Other Symptoms and Comorbidities

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Introduction
Migraine is a complex neurological disorder characterized by headache and other pain- related symptoms such as photophobia, phonophobia, allodynia and misophonia. Lalophobia could be defined as a difficulty or aversion to speaking. Some migraineurs report lalophobia during a migraine attack since speaking can lead to a worsening of the headache. However, there is a lack of studies exploring lalophobia, especially in migraineurs.

Objectives
We aimed to assess whether lalophobia is present in episodic migraine attacks and estimate its prevalence. We also explored the phase in which lalophobia was more frequently reported and which other symptoms and comorbidities were correlated with it.

Methods
This was a multicenter, observational, and cross-sectional study. All patients diagnosed with episodic migraine according to the ICHD-3 by a trained neurologist were invited to participate.
Questionnaires were administered during a headache attack up to 72 hours after its resolution. Questions covered epidemiological data, semiological aspects of the four phases of migraine, the presence of misophonia (intolerance to specific auditory stimuli), disability (MIDAS), cutaneous allodynia (12 item Allodynia Symptom Checklist, ASC-12), depression symptoms (Patient Health Questionnaire, PHQ-9), anxiety symptoms (General Anxiety Disorder, GAD-7), autonomic symptoms (COMPASS-31) and other features associated with migraine. All participants who reported they were afraid to speak during an attack were considered to have lalophobia.

Results
100 patients were invited to participate in the study, and 53 completed all the assessments. The mean age was 33.2±12.3 years, 47 (88.7%) participants were female, 23 (43.4%) reported aura, and 27 (50.9%) were not taking any preventive treatment. Lalophobia was reported by 42 subjects (79.2%, 95% CI 68.3% to 90.2%); 84.9% of those had the symptom during the headache phase. It was associated with the MIDAS score (p=0.006, correlation phi 0.397) and fatigue as a trigger factor (or premonitory symptoms) for migraine (p=0.01, phi 0.352). There was a trend towards worse anxiety symptoms (p=0.076) and movement allodynia (p=0.079) in those with lalophobia. No association was found with misophonia, cutaneous allodynia, depression, premonitory symptoms, autonomic symptoms, aura, other symptoms and comorbidities.

Conclusion
Lalophobia was a highly prevalent symptom of migraine attacks, especially during the headache phase. It was associated with more debilitating cases and seems to be a particular manifestation, different from cutaneous allodynia, phonophobia and misophonia, involving peculiar mechanisms and deserving future exploration. In our discussion the anterior insula was the main structure involved between pain and disease expression.

Keywords: speech circuits; lalophobia; migraine; insula cortex.

Headache Medicine

The Role of Female Hormones in Migraine: A Literature Review

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Categoria: Cefaleia e Gênero

Introduction
Migraine is a prevalent and episodic headache causing throbbing and pulsating pain, especially in one side of the head. It affects more commonly people of the feminine gender (75% of the patients of migraine are women). Associated symptoms, such as nausea, photophobia and phonophobia, are more often present in women than in men. Migraine is the highest cause of disability among women between 15 and 49 years old, negatively impacting their careers, social activities and quality of life. Calcitonin gene-related peptide inhibitors have enhanced the treatment of migraine in general, but female hormones have an important role in the pathogenesis of migraine. Therefore, a better understanding of the alternance of hormones in menstrual phases of women's cycle is crucial to improve treatment.

Objectives
This summary aims to correlate the variation in serum levels of hormones – as estradiol, progesterone and prolactin – with the incidence of migraine attacks in the different phases of the menstrual cycle.

Methods
A narrative review of literature was performed based on researches in PubMed and ScienceDirect databases, using the boolean operator "and" and the describers "hormonal", "migraine" and "women". Filters were used to select articles, as publication date of the past 5 years, review and systematic review article type, and full text/open access availability. A total of 80 articles were obtained in the PubMed database, of which 15 were selected and 4 were used. In the ScienceDirect database, 155 articles were found, of which 10 were selected and 2 were used.

Results
Prolactin demonstrated to be at higher levels in migraineurs, stimulating the secretion of prostaglandin and the increase of biologically active substances that are produced in immune cells, inducing vasoconstriction and, as a consequence, causing migraine. Furthermore, prolactin acts by inhibiting ovulation and decreasing estrogen serum levels, an effect that is also related to migraine attacks. Withdrawal and rises of estradiol can provoke headache crisis. The first is more associated with migraine without aura, and the second with migraine accompanied by aura. The studies showed that estrogen levels were lower in women with migraine than in the control group between days 19 and 21 of the menstrual cycle, leading to the hypothesis that the higher and faster the decrease of estrogen during the luteal phase, the more expressive the migraine attacks, since it increases the permeability of blood vessels to pro-inflammatory mediators. Great levels of estradiol can induce neuronal excitability by stimulating or inhibiting the serotonergic, glutamatergic and GABAergic systems, which leads to the symptoms of migraine. Estrogen receptor-α (ERα), estrogen receptor-β (ERβ) and G protein-coupled estrogen receptor-1 (GPER) are expressed in cerebral regions associated with the pathophysiology of migraine, as the dorsal horn of the spinal cord, related to trigeminal transmission of painful stimulus to the brain. ERα and ERβ were also found in the cerebral cortex, influencing the cognitive perception of pain. Progesterone activates the GABAergic systems, protecting against migraine attacks and it also reduces an excessive activation of peripheral sensory nerves.

Conclusions
Migraine is a prevalent disease throughout the lifetime of women, generally starting during puberty, when the variation of hormones causes physiological disturbances that lead to headache crisis. Estrogen is the hormone most closely related to migraine attacks, due to its significant variations across the menstrual cycle, modulating the neurotransmitters systems and the processing nociceptive areas of the brain. High levels of prolactin and low levels of progesterone are also correlated with migraine attacks. Therefore, understanding the role of hormones in migraine pathophysiology is crucial for the advent of more specific and effective treatments, improving the quality of life of migraineurs.

Keywords: Estrogen; Female Hormones; Migraine; Progesterone; Prolactin; Women.

Headache Medicine

Migraine long-term prognosis

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Migraine is a common and disabling neurological disease whose prognosis is variable. It is classified as a primary headache and has a high prevalence and impacts. According to the Global Burden of Disease Study 2010 (GBD2010), it is the third most prevalent disease in the world. In the Global Burden of Disease Study 2015 (GBD2015), it was recognized as the third leading cause of disability worldwide in men and women under 50 years of age. There are two main types of migraine, migraine without aura, which is a clinical syndrome with transient neurological manifestations and associated symptoms, and migraine with aura, characterized by transient focal neurological deficits that usually precede or sometimes accompany the headache. Furthermore, some patients present a prodromal state, which occurs hours or days before the headache, and/or a postdromal state, after the headache resolves. It is known that migraines, in general, present self-limited periods of pain; however, depending on the condition, it can also present characteristics of chronic pain, causing even more harm to quality of life. It has a variable prognosis with patterns such as clinical remission, partial clinical remission, persistence and progression, which can be influenced by several factors, which can be divided into modifiable and non-modifiable, including obesity, sleep disorders, depression, anxiety, high frequency of attacks , frequent use of painkillers, abusive use of caffeine, female sex and low socioeconomic status.

Methods
this article is a literature review. The databases used were Pubmed and ELsevier to search for the terms "migraine disorders", "time" and "prognosis", including publications dated from 2013 to 2023. The International Classification of Headache Disorders 3rd edition was also consulted.

Objectives
investigate the long-term prognosis of migraine, as well as the socioeconomic and personal impacts associated with this disorder, with the aim of improving the understanding of progression mechanisms, allowing us to guide the development of early interventions and thus contributing to prevention of exacerbations and unfavorable prognosis.

Results
modifiable and non- modifiable factors influence the clinical course and prognosis of migraine. The four patterns are determined through these factors, concretely stating that there is heterogeneity in the natural history of migraine. Other determinants that may contribute to the development of an unfavorable prognosis are addressed, including medication adherence.

Conclusion
given the findings, it is understood that the long-term prognosis of migraine is related to environmental, biological and behavioral factors. However, it is clear that acting on factors that can be modified has an effect on establishing prognostic patterns, increasing the chance of progression to a favorable outcome of the disease.

Keywords: Migraine Disorders; Prognosis; Time.

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Dentistry And Neurology in the Differential Diagnosis of a Patient With Migraine, Temporomandibular Disorders and Eagle Syndrome: a Case Report

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Introduction:

The styloid process is a bony projection that is around 20 to 30mm long. The elongation of this structure associated with symptoms is known as Eagle's Syndrome (ES). It is believed that lengths greater than 40mm are strongly associated with pain complaints. It can be subdivided into the classic form, which is characterized by the presence of non-specific painful symptoms, difficulty and a foreign body sensation when swallowing. Its other variant, the styloid-carotid syndrome, can present visual symptoms, syncope, transient ischemic attacks or ischemic strokes.

Temporomandibular dysfunction (TMD) can be defined as pain in the masticatory and/or cervical muscles and alterations in the temporomandibular joint (TMJ), with or without functional limitations of the jaw and joint noises. TMD can be classified as a disorder of the masticatory muscles or of the joint, or mixed when it involves both structures simultaneously. Orofacial pain and migraine can have their symptoms associated with impairment of the pain modulatory pathway and the central sensitization process.

In addition, migraine is multifactorial and complex, and it is believed that there is a genetic pre-disposition, which associated with environmental and behavioral factors can cause changes in sensory susceptibility. Patients with this condition can present a variety of symptoms, with pain being the main disturbance, but not always the most uncomfortable. It can be characterized by a line of phases that can overlap, such as premonitory, aura, pain and post-dromic phases.

This study aims to report the case of a patient diagnosed with Migraine, Temporomandibular Dysfunction and Eagle's Syndro-me, and how the signs and symptoms can make assertive diagnosis complex for the neurology and hospital dentistry team. Patient L.G.S.B, 52 years old, came to the Neurology Department of the Fortaleza-SESA General Hospital for migraine with aura and tension-type headache. She also had a previous diagnosis of sleep apnea, hypothyroidism, gastritis, reflux and TMD and an imaging exam dated 11 years ago, with an elongated styloid process. She had a dental history of incisal wear and the use of an interocclusal device and medication: dozemast, neutrofer, puran, imense and addera D3.

During the dental history, she reported pain in the left TMJ, difficulty chewing and opening her mouth, tinnitus, otalgia, vertigo, daily headaches, discomfort when swallowing, with emphasis on the left topography. On physical examination, palpation of the TMJ, masticatory and cervical muscles revealed local myalgia in the anterior and posterior temporal muscles, sternocleidomas-toid and trapezius, as well as temporomandibular arthralgia. She opened her mouth with a deviation to the right, but without clicking or crackling.

Intraoral examination revealed partial bimaxillary edentulism and generalized occlusal wear, compatible with previous treat-ment and sleep bruxism. Due to a previous CT scan of the mandibular condyles, which showed an elongated styloid process, pain in the cervical region and difficulty with laterality, a new non-contrast CT scan of the face was requested, which showed a styloid process greater than 40mm.

Thus, we can see that the diagnosis of chronic pain can be complex, and a detailed anamnesis and a good clinical examination are essential, often requiring the use of complementary tests such as CT scans and panoramic radiographs. A Specialized den-tistry and the neurology team can contribute to an accurate diagnosis and more assertive approaches. In addition, the breadth of knowledge for both categories has a positive impact on improving patients' quality of life.

Keywords: Temporomandibular Joint Disorders; Migraine; Neurology; Dentistry; Eagle syndrome

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Aspirin and poetry: did João Cabral de Melo Neto suffer from acetylsalicylic acid-overuse headache?

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Categoria: Cefaleia na História e nas Artes

Introduction
João Cabral de Melo Neto is considered one of the most important Brazilian poets of all time. Known for his outstanding writing, the author suffered from severe headaches for the longest part of his life, being diagnosed with migraine. It was largely documented that Melo Neto took a significant amount of acetylsalicylic pills everyday for many years. In his poem, "Num Monumento à aspirina" which translates to "In a Monument to aspirin", Melo compares the Acetylsalisylic acid (aspirin) pill to the sun, denoting its capacity to brighten the authors humor, as said in the earlier mentioned poem.

Objectives
The objective of this study includes identify how headache and it's treatment influenced João Cabral de Melo Neto's poetry as well as analyze the correlation between Melo Neto's migraine diagnosis and his documented overuse of aspirin and investigate the possibility of an acetylsalicylic acid-overuse headache diagnosis.

Methods
Two biographical books about João Cabral de Melo Neto's life, "A Milésima Segunda Noite na Paulista" by Joel Silveira, a collection of texts that includes Silveira's interview with Melo Neto, "Gentíssima" by Maria Ignez Corrêa da Costa Barbosa, which contains an interview with the poet, and "João Cabral de Melo Neto: Complete Poetry" published by Alfaguara, a collection of all of the author's work, were read thoroughly by both authors and all references to headache and aspirin were systematically documented. In addition, Melo Neto's clinical case documented in his biography and interviews were juxtaposed with The International Classification of Headache Disorders (ICHD-3) diagnostic criteria for acetylsalicylic acid-overuse headache diagnosis.

Results
The word "aspirin" appears 8 times in 6 of Melo Neto's poems (once in each of the following poems: "Os três mal-amados", "Metadicionário", "A corrente de ar", "O papel em branco", "Epitáfios", and three times in "Um monumento à aspirina") in which he compares aspirin to the sun, attributing to aspirin the capacity refocusing a "blurred body", which was how he described his state during headache. "Headache" is featured once in Melo Neto's poetry, in his poem "Os três mal-amados". It was reported by both biographies that João Cabral de Melo Neto suffered from severe headaches since he was 16 years old. In the interview featured in "Gentíssima", João Cabral de Melo Neto said he started taking aspirin to relieve his pain when he was 17. Furthermore, the poet told Joel Silveira in an 1971's interview that he took 1 aspirin pill every hour, everyday, for several years, reducing his daily acetylsalicylic acid intake only in 1971, when he was 51 years old, when he started to take 1 aspirin pill every 4 hours. Nonetheless, his headache could not be extinguished by medication, but only moderately relieved. The gathered information about the author's headache and acetylsalicylic acid over-use fulfill all specific criteria for ICHD-3 medication overuse headache (coded as 8.2 at ICHD-3) and acetylsalicylic acid-overuse (coded as 8.2.3.2.1 at ICHD-3). However, there was not enough evidence of causation documented in the material used in this study and, therefore, the provided information was insufficient to meet all the general criteria necessary for all headache attributed to a substance or its withdrawal disorders diagnosis, including the ones previously mentioned.

Conclusion
Headache and the use of acetylsalicylic acid influenced João Cabral de Melo Neto's poetry and life, holding an important source of inspiration to his poems. His interviews and biographies suggest that Melo Neto had a risk behavior for developing medication overuse headache, specifically its subform: acetylsalicylic acid-overuse headache. Nonetheless, there was not enough documented information that could be used to demonstrate evidence of causation of Melo Neto's abuse of aspirin and his severe headache.

Keywords: Headache Disorders; Secondary; Aspirin; Poetry.

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Headache Medicine

Peripheral nerve block in a migraine pregnant patient: a case report

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Categoria: Tratamento Preventivo Da Enxaqueca

Introduction
Migraine is one of the most common neurological complaints during pregnancy. Many women with a history of migraine experience an improvement during pregnancy (especially those with menstrual migraine), while those with migraines with aura are more likely to have an unpredictable course of pain during gestation. It is crucial to manage migraine during pregnancy because prolonged vomiting or nutritional problems can have deleterious effects on both maternal and fetal health. The decision to use medication during pregnancy involves a discussion of the risk-benefit ratio. Pregnant women with headache can be treated during pregnancy and the postpartum period with peripheral nerve blocks, reducing the need to initiate or increase prophylactic medication doses. The frequency of the blocks can be adapted based on the patient's response. Moreover, the blocks have proven effective in relieving moderate to significant pain for some individuals suffering from migraine. One case series that examined 13 pregnant women who received blocks for episodic migraine or chronic migraine showed efficacy for both status migrainosus and short-term prophylaxis.

Objective
To report a case of a pregnant patient from the outpatient clinic of the General Hospital of Fortaleza, with a significant worsening of migraines during pregnancy, who showed significant improvement after the second peripheral nerve block.

Case Report
A 31-years-old patient, female, with a headache for the past 8 years, affecting the bilateral frontal region of the head, with moderate to severe intensity, pulsatile, radiating to the cervical region, accompanied by photophobia, phonophobia, nausea, and vomiting, without aura, diagnosed as migraine. She was in treatment with desvenlafaxine 100 mg/day and propranolol 40 mg/day, experiencing an average of 3 episodes per month. However, the patient discontinued desvenlafaxine when she discovered she was pregnant, leading to a worsening of her headache attacks in the subsequent weeks, during which she also experienced hyperemesis gravidarum. In the June 2023, at 15 weeks of gestation, it was decided to perform peripheral nerve blocks with lidocaine, targeting the major and minor occipital nerves, supraorbital nerves, auriculotemporal nerves, and trapezius muscles, without complications, and to increase propranolol to 80 mg/day. Upon returning in July 2023, at 19 weeks of gestation, the patient reported daily severe headache attacks, worsened when lying down, with associated vertigo. Neurological examination revealed no pathological findings except for trigger points on palpation of the major and minor occipital nerves bilaterally. The fundoscopic examination was normal. Due to the progressive worsening of headaches during pregnancy and the patient's report of worsened pain while lying down, secondary headache was suspected, leading to head MRI, which showed no abnormalities, and intracranial MRA, which did not suggest secondary causes. It was again decided to perform peripheral nerve blocks in the same locations using lidocaine, with monthly follow-up. Upon reevaluation in August 2023, at 23 weeks of gestation, the patient already showed significant improvement, with only two headache episodes per week and a considerable improvement in quality of life.

Conclusion
The reported case highlights the therapeutic discussion regarding the use of peripheral nerve blocks for migraines in pregnant patients and the need for investigation in cases with other red flags. The patient reported did not show improvement neither after adjusting prophylaxis nor with the first peripheral nerve block; however, substantial headache improvement occurred after the second application, emphasizing the importance of peripheral nerve blocks as an ally to avoid initiating or increasing prophylactic medication doses in pregnant women with migraines.

Keywords: Peripheral Nerve Block;Migraine;Pregnancy.

Headache Medicine

Warning signs in pediatric headache: a literature review

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Categoria: Cefaleias em Crianças e Adolescentes

Introduction
headache is the third leading cause of visits to pediatric emergency rooms. This symptom is of great concern to this age group, as it is one of the main causes of disability and losses in their neuropsychomotor development. Studies indicate that 90% of pediatric headaches have a primary cause, such as migraine, cluster headache, or tension-type headache, which are usually easy to diagnose and self- limiting. However, although fewer in number, there are still secondary headaches, which can be fatal and must be carefully diagnosed and treated quickly. In the clinical setting, the initial assessment and identification of warning signs are extremely important for the diagnosis and follow-up of headaches in children and adolescents.
Objective
this study aims to understand and describe the warning signs of pediatric headaches that require more detailed investigation and their main causes.
Methods
this is a bibliographic review of scientific articles published in the Pubmed, Medscape, and Embase databases. Articles from the last five years were used with the descriptors "Headache" "Pediatrics", and "Red flags".
Results
headache is generally a benign condition that can be easily diagnosed and treated; however, this symptom can underlie fatal diseases. To identify the severity of the headache, some clinical signs are used, one of which is the association with systemic symptoms such as fever, toxemia, neck stiffness, and skin rash, which are often indicative of infections that account for the majority of headaches cases in preschool children, such as bacterial meningitis and viral encephalitis. In addition, in the presence of neurological deficits combined with chronic and progressive headache, the presence of brain tumors should be investigated, which, due to traction on blood vessels and the dura mater, as well as compression of cranial nerve fibers by the tumor mass itself, in addition to increased intracranial pressure (>28 cmH 2 O), contribute to the pain. Focal neurological symptoms such as ataxia, behavioral changes, visual disturbances, and seizures are strong predictors of life-threatening conditions and should be referred to a neuropediatrician immediately. The time of onset of the headache also says a lot about its severity since those that start in the morning or those that have nocturnal awakenings have been associated with intracranial lesions or suggestive of sleep disorders, such as sleep apnea; however, studies report that 25% of children with primary headache wake up at night, so it is important that the anamnesis is taken in detail. Venous sinus thrombosis begins in more than 75% of cases with headache and is usually accompanied by vomiting, diplopia, papilledema, and seizures. Some studies have shown that young age is also a warning sign, i.e. children under the age of 5 have the greatest chance of an unfavorable diagnosis.
Conclusions
an intensive approach to headaches in pediatrics is necessary, consisting of a detailed anamnesis, with an important focus on alarm signs since these can strongly contribute to the correct diagnosis of a serious condition.

Keywords: Headache; Pediatrics; Red Flags.

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Headache Medicine

Headache in Post-COVID-19 Patients: Toward a Better Understanding About its Clinical Characteristics, Pathophysiological Mechanisms and Treatment

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Introduction
SARS-COV-2 virus accomit not only the respiratory tract, causing also systemic manifestations, such as neurological disturban-ces. Headache is one of the most common neurological symptoms of acute and post-acute phases of COVID-19 disease. The persistence of headache weeks or months after the infection has been observed among a significant number of patients, presen-ting as a worsening of a preexisting primary headache or manifesting as a new dysfunction in those without preliminary ante-cedents of headache syndromes. Furthermore, it has been observed that this cephalea may persist in an indeterminate period and associated with other manifestations of the long-COVID syndrome, such as hyposmia, cognitive disturbances and fatigue. **Objectives**
This summary aims to analyze the presence of persistent headache in individuals previously infected by the SARS-COV-2 virus, summarizing and discussing their pathophysiological mechanisms to improve different approaches to the treatment of this disease.
Methods
A systematic review of literature was performed based on research in PubMed, ScienceDirect and BVS databases, using the boolean operator "and" and the describers "persistent headache" and "COVID". Filters were used to select articles, as review and systematic review article type and English language. 67 articles were obtained in the PubMed database, 264 in the BVS database and 249 in the ScienceDirect database, of which 8 were used.
Results
Studies related that persistent headache after an infection by COVID commits patients that had severe and non-severe forms of the disease. These headaches manifest in different forms, without a specific clinical phenotype. Tension-type-like, migraine-like and new daily persistent headache (NDPH) are the most frequent presentations, and the topography is generally bilateral with frontal or periocular predominance, but the headache can also appear in considerable frequency with a occipital or temporal predominance, with a moderate or severe intensity. Recent discoveries associate the post-COVID cephalea pathophysiology with an activation of the trigeminovascular system in individuals genetically predisposed to develop migraine, since the SARS-COV-2 protein was found in trigeminal branches and in the trigeminal ganglion. Besides that, a prolonged immune system activation with bio-humoral response is also associated with the pathophysiology of the disturbance, once inflammatory cytokines manifest in altered blood levels in those cases. Patients with bilateral headache (93% of the sample used in the study) had higher levels of IL-6 when compared with the amount with unilateral headache. Furthermore, neuroinvasion via the connection between SARS-COV-2 to angiotensin-converting enzyme 2 receptors and via endothelial cells in the blood- brain barrier is another possible pathophysiological mechanism. However, the mechanism is still not established, and the treatment recommendations follow pre-existing protocols for primary headache disorders, considering the phenotype and other symptoms associated with the long-COVID syndrome, but non-steroidal anti inflammatory drugs and tricyclic antidepressants showed a positive prognostic in cases in general.
Conclusions
Although many hypothesis have arisen in recent studies, the certain and established pathophysiological mechanisms remain unclear. Therefore, most recommendations are based on determined lines of treatment for primary phenotype headaches with the same clinical characteristics, such as tension-type and migraine-like headaches. While data is still lacking, those are safe recommendations that lead to the most favorable prognostic. More research is necessary to exhibit the relationship between the infection, the variants of the virus and the different phenotypes and pathophysiological mechanisms of post-COVID headache, so that specific treatments can be determined to improve the prognosis of the patients.

Keywords: Long-Covid; Pathophysiology; Persistent Headache; Sars-Cov- 2; Treatment.

Headache Medicine

Tricyclic Antidepressants as Prophylactic Treatment for Tension-Type Headache

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Categoria: Cefaleia do Tipo-Tensão

Introduction
Although the pathophysiological mechanisms causing tension-type headache are not entirely understood, several hypotheses have been proposed, including muscle contraction and stress. According to current literature, it can be stated that tension-type headache involves both peripheral and central mechanisms that result in pain. This class of headache is characterized by diffuse or bilateral pain of mild to moderate intensity and can be episodic (up to 15 days per month, with pain lasting from 30 minutes to 7 days) or chronic (more than 15 days per month for 6 months or longer). Treatment options may include analgesics and muscle relaxants; however, studies indicate the effectiveness of prophylactic use of tricyclic antidepressants for tension-type headache. This class of medications is characterized by its action of inhibiting the reuptake of serotonin and noradrenaline in the synaptic cleft, resulting in an analgesic effect. Thus, based on the above, this literature review aims to assess the efficacy of tricyclics as prophylactic treatment for tension-type headache.

Objective
The aim of this review is to evaluate the effectiveness of tricyclic antidepressants in the prophylactic treatment of episodic or chronic tension-type headache, as well as to examine the feasibility of these drugs in terms of potential side effects, observing their action in the disease's pathophysiology and in individuals' bodies.

Methods
This is a systematic literature review using the PubMed and Scielo electronic databases, including articles published in the last 5 years. The search terms used were "tension type headache," "treatment," and "antidepressants." Articles not related to the topic were excluded.

Results
Tricyclic antidepressants, through their action of inhibiting the reuptake of serotonin and noradrenaline in pain-suppressing pathways, have analgesic and muscle relaxant effects. Furthermore, their analgesic effect is not linked to the antidepressant effect, allowing their use in situations where patients do not exhibit depressive symptoms. Since the pathophysiology of headache is not entirely explained, the effect of tricyclics on relaxation may be associated with a reduction in stress, resulting in decreased pain. For example, the use of Amitriptyline was considered effective in prophylactic treatment, although it was associated with a higher number of side effects compared to Mirtazapine, a tetracyclic medication, likely due to its more selective action on neurological receptors. Patients who used Amitriptyline reported drowsiness and xerostomia. Therefore, it is necessary to observe whether side effects diminish over time or persist, depending on each patient, to assess the feasibility of treatment continuation. Another factor to note is that the beneficial effects of tricyclics appear to increase over time, so their prophylactic use in patients with chronic tension-type headache may be more effective than in patients with episodic headache. Additionally, the use of tricyclic antidepressants in patients with tension-type headache resistant to common analgesics has shown to be efficient.

Conclusion
Prophylactic pharmacological therapy with tricyclic antidepressants for tension-type headache, as evaluated in this review, proves to be effective within expected parameters. However, it is the responsibility of the attending healthcare professional to assess whether the treatment's benefits outweigh the risks of side effects. Tricyclics have demonstrated significant effectiveness in the treatment of chronic tension-type headache, and if side effects tend to decrease over time, this therapy may be more favorable for continuous use. Thus, the development of guidelines for the use of these medications would be ideal for determining their feasibility

Keywords: Headache; Tension-type; Tricyclics; Antidepressants; Treatment.

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Headache Medicine

Epidemiological Analysis of Migraine Hospitalizations in Barbalha, Ceará: A Notable Regional Disparity

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Migraine is a neurological condition characterized by intense, throbbing headaches that can be accompanied by symptoms such as nausea, vomiting, sensitivity to light, and sound. It represents a significant challenge to the quality of life of affected individuals, as it is the most common cause of neurological disability related to headaches worldwide, as well as one of the leading reasons for medical consultations worldwide. In the Brazilian context, migraine is not only a health concern but also has substantial social and economic implications. The burden of migraine extends beyond physical pain, negatively impacting work performance, family relationships, and the mental health of those affected. Understanding the incidence and associated factors of migraine in different regions of Brazil is crucial for developing effective prevention and treatment strategies. This study aims to analyze the incidence of migraine in Barbalha, a city in the south of Ceará located in the Cariri region, and this city was responsible for over 69% of migraine-related hospitalizations in the state of Ceará. Objective: To analyze the epidemiological characteristics of hospitalizations for migraine and other headache syndromes between 2020 and 2022 in the state of Ceará and the city of Barbalha, CE.

Methods
A cross-sectional, analytical study with a quantitative approach, covering a sample of 2,817 individuals hospitalized due to migraine and other headache syndromes (ICD-10 G43 and G44) in the state of Ceará between january 2020 and december of 2022, using data from the Brazilian Unified Health System Hospital Information System (SIH/SUS). The variables analyzed included year of hospitalization, number of hospitalizations, municipality, age group, gender, total cost, type of care, average length of stay, and mortality rate.

Results
The total number of hospitalizations for migraine in the state of Ceará during the period 2020-2022 was 2817 cases. Of these, 53.75% (1514) were female and 43.25% (1303) were male. However, some municipalities in the state stood out among the total hospitalizations, with Fortaleza accounting for 13.52%
(381) of cases and, especially, Barbalha with 69.40% (1955). In this regard, Barbalha, despite being only the 17th most populous city in the state, leads in migraine-related hospitalizations in Ceará. In this municipality, men represented 51.25% (1002) and women 48.75% (953). Regarding the type of care, 19.33% (241) were elective, while 87.67% (1714) were emergency care during this three-year period. In terms of the years analyzed, there were 609 in 2020, 756 in 2021 and 590 in 2022. When analyzing the age group of patients, the four most prevalent groups were 30 to 39 years (280), 40 to 49 years (343), 50 to 59 years (314), and 60 to 69 years (283). Regarding the average length of stay in days, it was 6.9 days. Additionally, in Barbalha, the analyzed hospitalization service cost a total of 2.741.385,05 Brazilian Reais in the period 2020-2022, while in Fortaleza, it cost 201.473,06 in the same period.

Conclusion
With the collected data, it is possible to observe a significant regional distortion in the data, as despite the municipality of Barbalha representing less than 1% of the total population of the state of Ceará, it accounts for over 69% of the statewide migraine hospitalization cases, along with a high proportion of emergency hospitalizations. Expenses for this type of hospitalization in the municipality represented 90.6% of the total expenditure in the state. However, due to the depth and detail of the data available in DATASUS, many of the data suffer from deficient sampling and may be biased, potentially requiring further explanation and necessitating more longitudinal studies to understand the reasons for this distortion. Furthermore, there is a prominent need for future in-depth studies to understand the reason for the high prevalence of migraine and other headache syndromes in this specific region.

Keywords: Migraine; Ceará; Barbalha; Cariri; Epidemiology.

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Caffeine as adjuvant therapy for Tension-Type Headache: A systematic review

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Categoria: Cefaleia do Tipo-Tensão

Introduction
Tension-type headache (TTH) is a very prevalent headache disorder, characterized by mild or moderate non-pulsatile pain, often described as pressure. The use of caffeine as an adjuvant to other common analgesics, such as acetaminophen, dipyrone, and ibuprofen, has shown significantly improved efficacy in terms of time and pain relief in the treatment of headaches. However, little literature has assessed the use of caffeine specifically in TTH.

Objectives
To review the effects of caffeine as an adjuvant therapy for TTH.

Methods
Systematic search in PubMed/Medline, Scopus and Web of Science databases was conducted from inception to August 19, 2023. Description terms "Caffeine" and "Tension-Type Headache" were used to conduct the search. Articles were included according to the following criteria: (1) Articles involving patients with TTH; (2) Only Randomized Controlled Trials selection; (3) The study must have data comparing the use of caffeine combination and isolated analgesic in TTH; (4) Were published from 2000 to August 2023; (3) Involved only human subjects and (4) Were written in English. Review articles, Articles written in languages but English, and articles involving animal subjects were excluded. This study followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) reporting guidelines. Rayyan app was utilized to organize and label the articles for peer analysis. Results were expressed as descriptive data.

Results
The search yielded a total of 529 articles for evaluation. 87 duplicates were excluded, and 442 entries proceeded for the screening. After inclusion and exclusion criteria, 2 articles were considered suitable for review. These 2 articles enrolled a total of 451 TTH patients. In study 1, a multicenter, double-blind trial was conducted with 385 adult Americans to evaluate the use of combination of ibuprofen and caffeine for TTH treatment. Results in pain-intensity difference (PID), peak PID, summed PID (SPID), pain relief scores (PRS), peak relief, and total pain relief (TOTPAR) all significantly favored the combination therapy in comparison to ibuprofen alone. Overall, subjects individual evaluation of therapy was higher for combination therapy. Adverse effects were more common in caffeine-ibuprofen group (34% compared to 14% in ibuprofen alone), with nausea, nervousness and dizziness being the most frequent. Study 2 was a multicenter single-blind crossover study that evaluated the use of paracetamol–sodium bicarbonate–caffeine combination for TTH treatment compared to paracetamol alone in 66 patients. Results showed no clinically significant difference between the combination and paracetamol alone for time to perceptible pain relief. However, favorable results for combinations were registered in PID, PRS, SPID and TOTPAR results. The proportion of subjects that took combination therapy reporting complete resolution of headache (PRS 4 + pain-intensity rating 0) was significantly higher than paracetamol group. Treatment-emergent adverse events were more common in the paracetamol-sodium bicarbonate-caffeine group (4.3%, compared with 0% in paracetamol alone), with asthma exacerbation and upper respiratory tract infection being the main reported events.

Conclusion
This review analyzed the use of caffeine combined with different analgesics in the treatment of tension-type headaches. Combination formulations with caffeine have shown to be more effective than analgesics alone in most aspects studied. This study has some limitations, only a few trials in the literature studied specifically caffeine adjuvant therapy and most of them did not compare the combination group to isolated treatment in TTH group. Therefore, there is a clear need for more careful and in-depth studies on the subject to clarify the adjuvant effect of caffeine, thus providing better possibilities for the treatment of Tension Time Headache.

Keywords: Caffeine; Tensio-Type Headache; Treatment; Adjuvant; Therapy; Pain relief.

Headache Medicine

Analysis of the Relevance of the Classification of the Main Types of Headache

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Categoria: Classificação Das Cefaleias

Introduction
Any painful neurological condition affecting a specific cranial segment is termed a headache. When linked to nerve alterations, it's termed neuralgia (MORELI; SILVA; DA COSTA JÚNIOR, 2021). Classifying primary headache types is vital for understanding, diagnosing, and treating these disorders. Notably, "The International Classification of Headache Disorders" (ICHD) provides stringent criteria for precise and effective classification. ICHD's existence amplifies the significance of analyzing the relevance of primary headache classification, ensuring a globally consistent approach to diagnosis, treatment, research, and education in healthcare. Evaluating this classification's relevance is crucial for medicine and patients' quality of life, given varying therapeutic needs. Understanding headache classification aids in identifying underlying causes and contributes to neurological research.

Objective
This study aims to assess the importance of classifying common headache types, particularly using "The International Classification of Headache Disorders" (ICHD), and its influence on enhancing medical diagnosis, treatment, and research.

Methodology
To conduct this study, articles from 2018 to 2023 were researched in MEDLINE, LILACS, and SCIELO databases using keywords "Headache," "Classification," "Headache Disorders, Primary," and "Headache Disorders, Secondary" combined with "AND." Among 140 studies found, 8 met inclusion and exclusion criteria. Inclusion criteria encompassed studies addressing major headache types (e.g., migraine, tension- type headache, and cluster headache) using recognized diagnostic criteria like the International Classification of Headache Disorders (ICHD). Exclusion criteria included studies lacking specific headache data, misalignment with the timeframe or topic.

Results
Results underscored the medical complexity of headaches. The classification proposed by the International Headache Society, categorizing headaches based on clinical characteristics, has proven to be a valuable tool for healthcare professionals in diagnosing and treating these disorders adequately. The analysis of articles revealed that classifying headaches, such as migraine, tension-type headache, and cluster headache, provides a robust framework for clinical and therapeutic guidance. Moreover, reviewed studies emphasized the importance of recognizing symptom variability among patients and the need for a personalized approach to headache treatment. The analysis indicated that proper classification of headaches can contribute to a better understanding of underlying causes, enabling the adoption of more effective and personalized therapies. One of the analyzed studies demonstrated that for research focusing on the physiological and pathophysiological bases of headaches, the ability to distinguish between different headache types and subtypes is even more critical. Another analysis revealed that headaches accounted for 2.3% (244 cases) of the 10,450 emergency department admissions, with the majority (77.8%) being female patients. Headaches were categorized as primary, non-primary (including secondary and neuralgias), and unclassified, with proportions of 59.4%, 32%, and 8.6%, respectively, with migraine being the most common primary cause.

Conclusion
Therefore, the classification of various headache types is an essential element in both clinical practice and medical research dedicated to the study of headaches. However, it was also observed that classifying headaches can be challenging in some cases, especially when symptoms are atypical or overlapping, underscoring the ongoing importance of research and the development of refined diagnostic criteria and improved classification methods.

Keywords: Headache;Classification;Clinical Relevance.

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Analysis of the Relationship Between Migraine and Cardiovascular Diseases: an Integrative Review

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Categoria: Comorbidade das Cefaleias Primárias

Introduction
Migraine is a common type of primary headache which, affecting approximately 1.04 billion people, is considered the third most disabling pain in the world. Parallel to this, it is known that cardiovascular diseases are quite present in society and are related to several other comorbidities. In this sense, since migraine and vascular diseases are very prevalent, it is legitimate to assume that there is some relationship between them. Thus, since this study is relevant because it addresses very important themes in contemporary times, its justification is given by the intention of better understanding how migraine is related to cardiovascular diseases.

Objective
To analyze the relationship between migraine and cardiovascular diseases.

Methods
This is an integrative review based on research in the MEDLINE, EMBASE, LILACS and SciELO databases, using the descriptors "Cardiovascular Diseases", "Headache" and "Migraine Disorders", combined using the Boolean operator "AND". We selected studies available in their full versions, published in English, Portuguese or Spanish, between 2019 and 2023. After screening by stages, excluding studies of the review type and those that were not directly related to the aforementioned descriptors, eight articles were selected that addressed the relationship between cardiovascular diseases and migraine.

Results
Initially, a national population-based study conducted in South Korea demonstrated that the diagnosis of migraine was significantly associated with an increased risk of acute myocardial infarction, stroke, and cardiovascular death. Population and prospective research has reported an increased risk of ischemic stroke and atrial fibrillation in migraine patients, associating migraine with a high occurrence of known vascular risk factors. In addition, a prospective cohort study of 29,040 women demonstrated that, compared with those with no history of migraine, those with migraine with aura had a 9% increased risk of developing hypertension (95% CI: 1.02; 1.18); those who have migraine without aura, an increase of 21% (95% CI: 1.14; 1.28); and those with a history of migraine, an increase of 15% (95% CI: 1.07; 1.23), demonstrating that women who have migraine have a greater chance of developing hypertension and, consequently, some cardiac complication in the future. Ratifying this, a cohort survey conducted with 27,488 women demonstrated that individuals who suffer from migraine with aura have a higher risk of cardiovascular death. Starting now for analyses by age groups, it was observed that a comparative approach performed with young people reported that spontaneous coronary artery dissection was more present in people with migraine. A study of middle-aged individuals showed that people with cardiovascular diseases resulting from metabolic changes were more likely to have migraine, especially those with aura. Finally, a retrospective cohort study conducted with older Americans demonstrated that individuals with migraine are at increased risk of ischemic stroke.

Conclusion
It can be concluded that the relationship between migraine and cardiovascular diseases is quite significant. It is valid to state that, in a relationship of mutual cause and effect, migraine has the potential to favor the emergence of cardiovascular diseases and vice versa, in the most diverse age groups. Therefore, more and more studies are needed to deepen the knowledge about this relationship, in order to better understand it and, consequently, to combat, more efficiently, both cardiovascular diseases and migraines.

Keywords: Headache Disorders; Primary; Migraine Disorders; Cardiovascular Diseases.

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Headache Medicine

Identification of mast cells in the human pericranium: possible role in the genesis of headache

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Categoria: Fisiopatologia das Cefaleias - Ciência Básica

Introduction
The periosteum is a pain-sensitive membrane that contains sensory neurons and surrounds the outer surface of bones. The pericranium covers the external surface of the skull bones and, together with the dura mater, is sensitive to painful stimuli. These structures are studied in migraine as several local structures have been suggested to be involved in migraine pathophysiology. Mast cells, known as pro- inflammatory effector cells, are involved in the pathophysiology of migraine. Several animal studies have looked at the involvement of dural mast cells as a cofactor in the generation of migraine pain, although little is known about mast cells in the pericranium. This study may be the first to verify the rate of mast cell granulated in the dura mater and pericranium of human samples.

Objective
Describe the rate of mast cell granulated in the dura mater and pericranium of a post-mortem human sample.

Methods
Human dura mater and pericranium samples were collected from cadavers (18 hours post- mortem) during a standard necropsy at the death verification service of the Hospital das Clínicas of the Federal University of Pernambuco. Samples were fixed in 10% buffered formaldehyde for 24h. After fixation, tissue samples were embedded in paraffin and sectioned at 4µm. Then, the slides were deparaffinized, stained with toluidine blue concentration 0.1% for 1 min, and washed with distilled water. Finally, the slides were photomicrographed under 400x magnification to identify mast cells.

Results
Granulated and degranulated mast cells have been found in the human dura mater and pericranium. Eight granulated and 55 degranulated mast cells were quantified in the dura mater (granulation rate = 12.7%). In the pericranium, 7 granulated and 58 degranulated mast cells were quantified (granulation rate = 10.8%).

Conclusion
We detected mast cells granulated in the human pericranium and dura mater even 18 hours after death. This find suggests the feasibility of possible studies on the role of these structures in the genesis of headache.

Keywords: Pathophysiology; Imunocells; Migraine; Headache; Human.

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Headache Medicine

Trigeminal Neuropathy After Tooth Extraction Overlapping Trigeminal Neuralgia

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Categoria: Neuralgia do Trigêmeo e outras Neuropatias Cranianas

Introduction
Trigeminal neuralgia (TN) affects approximately 4.5/100,000 patients per year and can be a devastating condition, depending on the frequency and intensity of the painful paroxysms and the degree of pain control. It is usually classified into two different categories: primary or idiopathic, including patients with a negative physical exam and otherwise normal sensor and motor functions in which an organic cause for pain has been excluded; and secondary, including patients with associated physical findings related to organic lesions involving the course of the nerve, often the trigeminal ganglion, sensory root, or root entry zone at the pons. The widespread use of high-resolution MRI in the evaluation of trigeminal neuralgia lead to the recognition of an increasing number of patients with vascular compression of the nerve at the root entry zone among the idiopathic group and therefore, neurovascular conflict, became the most commonly accepted pathophysiologic mechanism to explain primary disease. Painful trigeminal neuropathy is characterized by a more continuous type of pain, although it can have episodes of intensification, and it is usually associated with a secondary cause, thus being one of the main differential diagnoses of trigeminal neuralgia.
Objectives
Realize prevention, early detection, and treatment of trigeminal neuropathy in tooth extraction procedures for patients with a history of TN.
Promote collaboration between dentists, neurologists, and pain management specialists for patient care in cases of trigeminal neuropathy and neuralgia after tooth extraction.
Case Report
A 71-year-old man presenting with long-standing sticking pain located in the face, in the mandibular region on the left, which got worse 1 year ago (VAS 5/10) after the extraction of teeth from the upper and lower left arches; before the extraction, he reports that he had the feeling that the teeth were "soft," but after the extraction they had a significant worsening in the intensity of the pain. Currently, the pain doesn't relieve completely, but it relieves when you use dipirone, use cold compresses and ointment with Xylocaine 4 times a day, relief that lasts about 1 hour. It also appears in more intense episodes 8-10x/day (EVA 10/10), which last seconds. Reports that it feels worse when brushing teeth and bite of food. There is night pain that wakes you up at night, but it isn't always intense. Initially, he sought dentists, who recommended and performed tooth extraction, but once realizing that the pain wasn't abating, he was referred to neurology. It was evaluated by the team from the General Hospital of Fortaleza (neurologist and dental surgeons), who advised the diagnostic hypothesis of trigeminal neuropathy after tooth extraction, but cannot exclude superimposed trigeminal neuralgia and performed brain MRI with FIESTA sequence which showed up: thin vascular handles that made before proximity to the segment cisternal of the right trigeminal nerve and discrete impression on the cisternal segment of the left trigeminal nerve. The finding on the right is more subtle, however, the finding on the left may represent neurovascular conflict and its value depends on the correlation. Gabapentin was started for the pain with good response, almost completely responding, and maintained in subsequent evaluation.
Conclusion
TN is usually responsive, at least initially, to pharmacotherapy. Treatment of neuropathy is based on anti-neuropathic agents and drugs. Neurosurgical options that are useful for TN are contraindicated or unsuccessful to drug treatment. Radiofrequency treatment is an effective method for reducing pain.
Definitive diagnosis for facial pain is a complicated task and requires expertise and meticulousness. Misdiagnosis can result in incorrect treatments.

Keywords: Trigeminal; Neuropathy; Tooth.

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Headache Medicine

Chronic Headache Secondary to the Reapearance of Macroprolactinoma: Case Report

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Categoria: Cefaleias Secundárias

Introduction
Epidemiological data, released by the World Health Organization (WHO) indicate that half of the world population suffers from headache at some stage of life, with higher prevalence among females. There is an etiological classification of headaches, which divides them into primary and secondary. Primary headaches are those with no demonstrable etiology, while secondary headaches are consequences of diseases.Multiple pathophysiological mechanisms contribute to the manifestation of headache, the main theories focus on the mechanical effect of tumor growth on the anatomy adjacent, invading the cavernous sinus, infiltrating nociceptive structures or compressing the surrounding nervous plexus, and may also trigger specific headaches such as SUNCT (short-lasting unilateral neuralgiform headache with conjunctival hyperemia and tearing). The diagnosis of SUNCT is clinical. MRI or CT is performed to rule out possible causes such as pituitary tumors.

Objectives
This article aims to describe a case report about a patient with chronic headache resulting from a pituitary macroadenoma and its systemic repercussions on the patient.

Case Report
J.C.M.S., male, 53 years old, married, born in Rio de Janeiro-RJ, from Fortaleza-CE, diagnosed with macroprolactinoma at 18 years of age. Soon after, in 2009, he was diagnosed with panhypopituitarism after an empty sella, resulting from previous drug treatment with cabergoline, which continued until 2013. At that time, he stopped taking medication and underwent hormone replacement therapy with testosterone, prednisone and levothyroxine. In July 2016, he reported a localized headache, without irradiation, in bitemporal regions, predominantly on the left and bilateral retrocular. In addition to stabbing pain lasting 30 seconds each, more than 100 times a day, classified as 10/10 on the visual analogue scale, disabling, associated with photophobia. The patient had warning signs such as: characteristics of thunder, occurrence in the presence of coughing and sneezing, and progressive worsening. Furthermore, there was a positive family history of chronic headache. In August 2016, the patient underwent magnetic resonance imaging of the skull, showing the presence of an image suggestive of a subarachnoid cyst and a partially empty sella turcica, associated with herniation of the subarachnoid space into the interior, but nothing related to the headache. Treatment was started with topiramate 50mg and venlafaxine 75mg, once a day each. In August 2018, the patient reported abandoning the medication as he did not improve. After one year, he was diagnosed with Short-Term Unilateral Neuralgiform Headache with Conjunctival Hyperemia and Tearing (SUNCT) and began treatment with prednisone 40mg once a day for 7 days. The patient states that the pain improves with the use of corticosteroids, but when the medication is stopped, the headache returns with the same intensity. In 2020, the patient was diagnosed with follicular-type non-Hodgkin duodenal lymphoma. In the investigation of metastasis, a whole-body PET/CT scan was performed, which showed a hypodense nodular formation, with peripheral calcification centered on the sella turcica. Given this result, the recurrence of the macroprolactinoma was confirmed and treatment with cabergoline was soon started, stopping the headache completely, denying, to this day, its presence.

Conclusion
In view of the present case, it is concluded that the intense and progressive headache, diagnosed as SUNTC, did not respond to initial treatment and proved to be a likely complication of recurrent pituitary macroprolactinoma, since the headache was resolved only after the use of carbegoline, treatment for the tumor. In this case, adequate diagnostic investigation and early intervention were essential for the patient's good prognosis.

Keywords: SUNCT Syndrome; Prolactinoma; Headache.

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Epidural Blood Patch (Ebp) Therapy in the Treatment of Postdural Puncture Headache: a Case Report

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Categoria: Cefaleias Secundárias

Introduction
Postdural puncture headache (PDPH) is one of the most common complications during neuraxial anesthetic procedures. Regarding epidural anesthesia, complications are associated with inadvertent puncture of the subarachnoid space. The headache develops within five days after the anesthetic intervention, with the cardinal characteristic being the exacerbation of the severity of the headache in orthostatic position. It is usually accompanied by neck stiffness and/or subjective auditory symptoms. Factors such as the type of needle used, the number of attempts and the professional's experience can influence its occurrence. PDPH generally has a self-limited course, resolving within fourteen days with conservative treatment, which includes caffeine-based analgesics, hydration and bed rest.
However, when conservative treatment is unsatisfactory or the headache is severe and disabling, the Epidural Blood Patch (EBP) should be considered. This therapeutic strategy consists of aspirating 20 mL of autologous blood and reapplication into the epidural space, aiming to stop the cerebrospinal fluid (CSF) leak, sealing the puncture site and relieving headache symptoms.
Objective
To report the case of a patient who developed headache after inadvertent puncture of the subarachnoid space during the administration of epidural anesthesia and describe the therapeutic approach adopted, including the use of an Epidural Blood Patch (EBP).
Case report
Female patient, 32 years old, previously healthy, underwent an elective surgical procedure to examine an ovarian adnexal mass. Before surgery, she underwent epidural anesthesia, resulting in an accidental puncture of the subarachnoid space. After recognizing the problem, a new puncture was performed in a different location and the anesthetic block was successfully established in the epidural space. On the second postoperative day, the patient developed an orthostatic headache associated with a complaint of tinnitus. Treatment: Initially, there were attempts at clinical treatment, with hydration, caffeine-based analgesics, non-steroidal anti-inflammatory drugs and corticosteroid therapy. However, these measures were not effective, leading to the decision to perform a transnasal sphenopalatine ganglion block, using a nasal swab soaked in bupivacaine and left for twenty minutes, resulting in partial remission of symptoms. Six hours after the procedure with reduction of the anesthetic effect and the patient reported that the symptoms returned. On the sixth day after surgery, it was decided to perform Epidural Blood Patch (EBP) therapy, which consisted of aspirating 20 mL of autologous blood and reapplication into the epidural space. Results: Total remission of all symptoms and decision to hospital discharge.
Conclusion
Although self- limited, post-dural puncture headache is an important complication of interventional neuraxial procedures. Conservative treatment is a valid option for many patients, but when there is no complete improvement in symptoms, the Epidural Blood Patch should be considered as a highly effective therapeutic strategy.

Keywords: Postdural puncture headache;Postanesthetic complications;Epidural blood patch.

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An Epidemiological Analysis of Hospitalizations for Migraine and Other Headache Syndromes Over the Last 15 Years in Brazil

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Headaches constitute one of the most relevant clinical manifestations in the field of medicine, and among them, migraine stands out as one of the most debilitating and incapacitating forms, significantly affecting the quality of life of individuals of all ages. Alongside other headache syndromes, migraine has represented a persistent burden for countless people in recent years, both globally and, more specifically, within the Brazilian population. The prevalence and impact of migraine extend beyond mere headaches, encompassing physical, emotional, and socioeconomic aspects. Therefore, a comprehensive understanding of this condition and its epidemiological trends in the Brazilian context over the past decade is crucial for enhancing clinical management, improving patients' quality of life, and shaping related healthcare policies.

Objectives
This study aims to conduct an epidemiological analysis of migraine in Brazil over the last 15 years, exploring the key sociodemographic factors associated with hospitalizations for this condition.

Methodology
The main data source used was DATASUS. The research strategy involved associating the year of processing with the number of hospitalizations for migraine and other headache syndromes with the analyzed demographic factors, including age group, gender, region, and ethnicity. Data were obtained from January 2008 to July 2023 as a result of these searches, and this data was subsequently tabulated and processed using Google Sheets and Jamovi applications.

Results
Over the past 15 years, there were 122,066 hospitalizations for migraine in Brazil, with an average of 7,710 hospitalizations per year until 2022. The lowest number of hospitalizations occurred in 2008, with 2,822 hospitalizations, while the highest was in 2019, totaling 11,996 hospitalizations. In 2022, there were 10,292 hospitalizations. Compared to 2008, there was an approximate 265% increase in the last 15 years. Up to July 2023, 6,416 hospitalizations were recorded, demonstrating an approximate 12% increase compared to the 5,731 cases reported during the same period last year. Regarding ethnicity, there was a predominance of hospitalizations involving White (42.3%) and Brown (33.6%) ethnicities, compared to Black (3.1%), Yellow (1.8%), and Indigenous (0.0007%) ethnicities, with no information available for ethnicity in 19.1% of migraine- related hospitalizations. Furthermore, starting in 2021, there was a higher prevalence of hospitalizations among people of Brown ethnicity, representing 53% of the total hospitalizations up to July 2023. In terms of gender, a significant predominance of females (65.7%) over males (34.3%) was observed, which remained stable over the analyzed period. Analyzing the age group factor, a slightly higher prevalence was noted in the age groups of 30 to 39 years (18.7%) and 20 to 29 years (18.5%), followed by the 40 to 49 age group (16.9%). Concerning the region of hospitalizations, the majority occurred in the Southeast (36.1%), followed by the South (26.6%) and the Northeast (25.7%), with the North (6.1%) and the Midwest (5.5%) having considerably lower values. Despite the expected predominance of the Southeast due to its larger population, in recent years, the South (2019 and 2020) and the Northeast (2018, 2021, and 2022) were the regions with the highest number of hospitalizations.

Conclusion
Migraine is an extremely debilitating and incapacitating condition that affects thousands of Brazilians, leading them to be hospitalized in healthcare facilities across the country. It becomes apparent that further studies involving patients' social class, hospitalization duration, and associated costs, along with more information regarding patients' ethnicity, are needed to better assess the impact of migraine and other headache syndromes on the Brazilian Unified Health System (SUS) and the Brazilian population as a whole.

Keywords: Migraine; Epidemiology; Brazil; Hospitalizations; Headache Syndromes.

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A Case Atypical of Stroke Manifesting With Secondary Trigeminal Autonomic Cephalgias

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Categoria: Cefaleia em Salvas e Outras Cefaleias Trigêmino-Autonômicas

Introduction
Headache and stroke are among the most common neurological diseases, both cause important disability, however stroke can develop in an unfavorable way and lead to death, so it is important to recognize atypical cases. headache can be a symptom of cerebrovascular diseases in up to 38% of cases and may vary with the location and etiology of the stroke. the phenotypic presentation of headache may be variable, including atypical presentations such as trigeminal autonomic cephalgias (tac). the paroxysmal hemicrania (ph) subtype involves multiple unilateral, severe and short-lasting episodes of pain, with cranial autonomic features and response to indomethacin.

Objective
To demonstrate an atypical case of stroke with the main manifestation of tac and to alert the need for a high degree of suspition and active search for atypias as pathological findings on physical examination in cases of sudden-onset headache.

Clinical Case
Female, 60 years old, hypertensive and diabetic, without previous history of primary headache, with sudden periorbitary headache on the right, of strong intensity, in "rip", associated with tearing, rhinorrhea, heat sensation in the right hemiface and ipsilateral semiptosis, initially the pain was continuous and later began to present crises last 10-15 minutes and 5 episodes per day. admitted after 17 days from the beginning of the condition, presenting on physical examination complete horner syndrome on the right and gait ataxia. due to alarm signs and history of refractory pain, the patient was admitted for investigation. after starting indomethacin 150mg/day, headache remedies. brain mri showed ischemic stroke in the dorsolateral bulb on the right, vessel study revealed stenosis of the right vertebral artery due to atherosclerosis, this being considered the etiology of the stroke and double-antiaggregation platelet activation was started for 90 days.

Conclusion
We highlight the need to rule out stroke in cases of new and usually acute-onset headache with focal neurological signs, even if they have characteristics of trigeminal autonomic cephalgias, which was more frequent in vertebrobasilar (57%) than in carotid (20%) territory strokes. we believe that in the case exposed there was impact of the hypothalamospinal tract in the dorsolateral bulb, which regulates autonomic responses and projects to the periaqueductal gray matter, activating the trigeminovascular system which is a known generator of headaches. it is important to associate the hypothesis of cerebrovascular disease in patients with new headache, associated with autonomic symptoms and search for focal neurological deficits, because in the case of stroke there is the possibility of acute phase treatment and reduce disabilities.

Keywords: Trigeminal Autonomic Cephalgias; Paroxysmal Hemicrania; Ischemic Stroke.

Headache Medicine

Return to the Emergency Department of a Private Hospital in the City of Recife for Patients with Headaches

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction
Headaches represent one of the most frequent reasons for seeking medical attention in an emergency department. It is estimated that approximately 50% of the population is seen at least once a year for this issue. Headaches can be classified as primary and secondary. When primary headaches are not treated correctly in the emergency department, they lead to return visits, generating high costs for both the patient and the hospital.
Objective
To describe the returns within 90 days of patients with headaches in an emergency department and the influential variables.
Methods
Data were obtained retrospectively from electronic medical records of a private hospital in the city of Recife using Business Intelligence (BI) tools. The study period was from January to June 2023. All patients who returned to the emergency department with a diagnosis of headache within 90 days were counted. The following data were considered: gender, age, administered medications, length of stay in the emergency department, and the cost of materials and medications used.
Results
A total of 2,304 patients with a diagnosis of headache (ICD R51) were treated in the emergency department. Among these, 133 out of 2,304 (6.0%) returned to the emergency department for subsequent care. Of these return visits, 106 out of 133 (79.7%) patients were female, and 27 out of 133 (20.3%) were male, with an average age of 39 years. The most commonly used medications included analgesics such as dipyrone (n = 60, 45.1%), followed by antiemetics like dimenhydrinate (48.8%, n = 65), non-steroidal anti- inflammatories like ketoprofen (60.9%, n = 81), as well as opioids like tramadol (26.3%, n = 35) and corticosteroids like dexamethasone (50.3%, n = 67). It was also found that 7.5% (n = 10) of the patients received no medication in any of the visits. The average cost in the emergency department for materials and medications was R$30.09, and the average length of stay was 4 hours and 2 minutes. Of the returning patients, 9.7% (n = 13) required hospitalization.
Conclusion
Proper management of patients with headaches in the emergency department is important to avoid unnecessary returns and thus reduce costs for both patients and hospitals. Education and patient follow-up strategies, as well as the implementation of appropriate treatment protocols, would contribute to the efficiency of the healthcare system.

Palavras-chave: Urgency; Treatment; Headache; Recurrence; Hospital Management.

Headache Medicine

Migraine associated with bilateral pulsatile tinnitus an case report

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Introduction
The primary headaches can have numerous patterns according to the patient, however, when its pattern alters, it is necessary to investigate what caused this change, aiming to rule out secondary causes. Pulsatile tinnitus and headaches are frequent conditions that require further investigation when associated. The pulsatile tinnitus differential diagnosis includes numerous pa-thologies and conductive obstruction must be ruled out (cerumen or mucous in the middle ear). The patient's examination shall include the auscultation of both ears and neck, in addition to the otoscopy. Imaging tests such as angiography, computerized tomography and magnetic resonance support the investigation. Therefore, pulsatile tinnitus when associated with headache reminds us of intracranial hypertension, besides, the tinnitus and the headache can be related regarding their pathophysiology that involves specific alterations in the thalamo-cortical activity and the trigeminal system, which is evidenced not only in heada-ches but also in migraine and in trigeminal autonomic cephalgias and interacts in the dorsal cochlear nucleus with the activity of the central auditory pathways causing perception of tinnitus.
Objective
Consider the presence of migraine associated with bilateral pulsatile tinnitus as a sign of intracranial hypertension.
Case Report
JBG, 25 years old, born and raised in Fortaleza. Presented with "tinnitus since 3 months ago", states bilateral pulsatile tinnitus that started three months ago. The patient also has a holocranial headache, persistent since 5 months ago, which is different from her usual migraine (crisis only during the menstruation), which got mildly better with the use of analgesics. States that the symptoms are worse in the morning and that the pain got worse with effort and when coughing, having severe impacts on her sleep quality. Denies other symptoms. Obese patient with a 38 kg/m2 BMI. In her neurological examination it was evidenced that the patient had papilledema and bilateral decrease of visual acuity to 10/20. That said, the patient was hospitalized and went through an MRI, which evidenced increase in the tortuosity of the optical nerve in T2 (figure 1), and an MR Angiography which had no findings, laboratory tests were also done, including haemogram, inflammatory tests, hepatic and thyroid activity, which did not evidence alterations, and lumbar puncture that had an opening pressure of 40 mmH2O. Therefore, the patient was treated with Acetazolamide 500 mg three times a day, a spinal tap to relieve the intracranial pressure and orientations about weight loss.
Conclusion
This clinical case highlights the importance of the correlation between a headache associated with bilateral pulsatile tinnitus as an alert sign for intracranial hypertension, which can be a subjacent cause of secondary headaches. Early identification and adequate management of these symptoms are of utmost importance to avoid severe complications and preserve the patient's quality of life.

Keywords: Headache; Intracranial hypertension; Tinnitus; Migraine.

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Headaches as Disabling Factors that cause Hospitalization of Patients in Northeastern Brazil: Analysis of a 10-Year Epidemiological Overview

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Headaches are any painful process of the nervous system that reaches a certain cephalic segment. Under an epidemiological and clinical analysis, these pain conditions affect more than 140 million Brazilians and are considered one of the main causes of disability worldwide. In fact, migraine, one of the main types of headaches, is considered the third leading cause of disability in the world. Given this, it is expected that, even though they are common in daily life, headaches represent a significant cause of hospitalizations of patients, namely, in the Northeast of Brazil. Therefore, since this study is relevant due to the impact of this theme on society and the lack of studies that seek to deepen this subject even further, its justification is given by the intention of better understanding how headaches behave as elements that lead to the hospitalization of patients in the Northeast of Brazil.
Objective
To analyze headaches as disabling factors that cause hospitalization of patients in the Northeast of Brazil, through a 10-year epidemiological overview.
Methods
In the case of an epidemiological study of the analytical type, the "TabNet" platform, made available by DATASUS, was accessed, where the axis "epidemiological and morbidities" was accessed, selecting the topic "Hospital Morbidity of the SUS (SIH/SUS)". Next, the subtopic "General, by place of hospitalization - from 2008" was selected, choosing "Brazil by Region and Federation Unit" as the geographical coverage area. Finally, the "Northeast Region" was selected; the content "Internment"; the period "2013-2022"; the morbidity "Migraine and other cephalic pain syndromes"; age group "All categories"; and gender "Male" and "Female", obtaining the data of this work.
Results
In the Northeast of Brazil, from 2013 to 2022, 25,964 cases of hospitalization were recorded, so that in annual data, ranging from the oldest to the most recent date, 1,244, 1,912, 1,955, 2,248, 2,793, 3,405, 3,544, 2,449, 3,034 and 3,380 occurrences were dated, respectively. Under a statistical bias, dividing this period into two 5-year intervals, it is noticed that, comparing the first time frame (10,152 cases) to the second (15,812 cases), there was an increase of more than 50% of hospitalizations caused by headaches. Analyzing the prevalence among men and women, the occurrence of hospitalizations for headaches in females (16,549 cases) is, in relation to males (9,415 cases), more than 75% higher. Finally, analyzing the prevalence by age group, in the subgroups "Younger 1 year", "1 to 4 years", "5 to 9 years", "10 to 14 years", "15 to 19 years", "20 to 29 years", "30 to 39 years", "40 to 49 years", "50 to 59 years", "60 to 69 years", "70 to 79 years" and "80 years and over", The cases of hospitalization by age, respectively, were: 46, 254, 782, 1,369, 2,143, 4,631, 4,824, 4,168, 3,261, 2,286, 1,502 and 698 occurrences. Thus, it is also observed that hospitalizations for headaches of individuals aged 20 to 59 years (13,623 cases) represent more than 50% of the total incidence.
Conclusion
It can be concluded that, since headaches are quite disabling, they are significant causes of hospitalizations of patients in the Northeast of Brazil. It is also worth stating that, by analyzing this epidemiological panorama of 10 years, such occurrences, characterized by being more prevalent in women, especially those aged between 20 and 59 years, are becoming increasingly frequent. Therefore, it is perceived the importance of more studies that seek to understand what is at the origin of this increase in cases of hospitalization for headaches, in order to better understand this scenario and, consequently, to provide its control.

Keywords: Headache; Disabling factors; Hospitalization; Northeast of Brazil; Epidemiological analysis; Overview.

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Headache Medicine

Long-lasting headache in Covid

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Categoria: Cefaleias Secundárias

Introduction
With the widespread use of vaccines, most of the COVID-19 cases recorded today are mild and moderate. This does not mean, however, that it is now possible to treat COVID like any other cold: many patients have been experiencing the so-called "long--lasting COVID", a condition in which one or more symptoms persist even after infection. And headache is one of the symptoms that, during the acute phase of the disease, usually appears in the first few days and can persist for days, weeks and even months. The characteristics, pathophysiology and treatment of prolonged COVID headache are not fully understood. However, growing evidence is defining the characteristics of this new condition, particularly about clinical features, some pathophysiological mechanisms and early treatment recommendations.
Objectives
Discuss long-standing headache and its characteristics related to COVID infection.
Methods
This is a narrative review of the main studies on the subject published in the PubMed, Science Direct and Cochrane databases up to the year 2022, without language restriction.
Results
Headache appears as oppressive pain in the upper/frontal part of the head, that may be perceived on both sides and affects between 14 and 60% of patients during the acute phase of COVID-19. It is more prevalent in middle-aged women. With a prevalence of 18%, it appears to be the fifth most common symptom in patients with prolonged COVID, after fatigue, dyspnea, myalgia and cough. The National Institute for Health and Care Excellence has distinguished between continuous symptomatic COVID-19 and post-COVID-19 syndrome for people who experience symptoms, respectively, between 4 and 12 weeks and more than 12 weeks after the beginning of the acute illness. The International Headache Classification uses a headache duration longer than 3 months after acute infection for the diagnosis of "Chronic headache attributed to systemic viral infection". Regarding clinical presentation, long COVID headache can manifest with a clinical presentation like that of new daily persistent headache, classified as NDPH (New Daily Persistent Headache) in ICHD-3(The International Classification of Headache Disorders), due to its prominent temporal relationship and resistance to treatment. However, not all long COVID headaches have a daily frequency and can be affected by the severity of the disease and the use of analgesics. They can appear as intermittent or chronic daily headaches. Most patients complain of various symptoms in addition to headaches, and the symptoms (and therefore the long COVID phenotype) can change according to the type of virus variant (Alpha, Delta, Omicron). Fever, cough and loss of taste have been reported as common symptoms for the Alpha variant, while coryza, headache and fatigue have been reported more frequently for the Omicron type. Furthermore, it can be accompanied by concomitant symptoms of long COVID, such as fatigue, cognitive dysfunction and dizziness, as well as hyposmia and insomnia or other sleep deficiencies. Another factor associated with prolonged COVID headache is treatment-resistant headaches during the acute phase of the infection. The prolonged COVID headache does not have a specific clinical presentation, so the diagnosis of such a headache is mainly a diagnosis of exclusion.
Conclusion
Due to the limited information available on long COVID headaches, further large population- based multicenter studies are needed to: fully characterize the headache phenotype specifically of prolonged COVID headache (not acute COVID headache); establish long-term disability and impact on patient quality of life; and determine the risk of chronicity pre-existing headaches.

Keywords: Covid; Long Headache; Diagnosis.

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Headache Medicine

Thunderclap headache in children

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Categoria: Cefaleias Em Crianças E Adolescentes

Introduction
In adults, the diagnostic criteria for thunderclap headache are the presence of an intense headache with an abrupt onset, which reaches peak intensity in less than 1 minute, lasts for at least 5 minutes and is not attributed to another ICHD-3 (International Classification of Headache Disorders) disorder. The literature on secondary thunderstorms is limited in the pediatric population compared to the adult population. Most pediatric patients with thunderclap present with primary thunderclap due to primary headache or primary thunderclap headache. Rapid resolution with normal neuroimaging indicates a benign course. Secondary causes are rare and usually caused by benign diseases.

Objectives
To review the clinical criteria and primary and secondary diagnoses of pediatric thunderclap headache.

Methods
This is a narrative review of the main studies on the subject published in the PubMed, Science Direct and Cochrane databases up to the year 2022, without language restriction.

Results
According to the literature, non-life-threatening diseases are the most frequent etiology of secondary headaches in pediatrics. Respiratory tract infections and minor head trauma are present in most of the patients. In general, children with thunderclaps have a benign evolution; most headaches improve before discharge from the emergency room. Infection is the most common cause of pediatric headache diagnosis in pediatric emergency room admissions. In a large study of 2,354 adolescents and children with headaches, infectious causes accounted for 39%: 18% had an upper respiratory infection, 17% had a fever illness, 3.5% rhinosinusitis and 0.2% meningitis. In comparison, in the systematic review on thunderclap headache in adults, 50% had secondary headache, only 7% had causes related to infectious diseases. A reliable pain measurement tool is crucial for an accurate diagnosis. A pediatric scale validated for the child's age is needed to diagnose severe pain and pain that is worse or more unbearable. The visual analog scale (VAS), which measures pain according to increasing numerical intensity and color, is useful for children aged 7 and over. For younger or developmentally delayed children, or children who don't understand the explanation of the VAS, the pain scale used in the pediatric emergency room, the Faces Pain Scale - Revised, can be used. In addition, according to studies, children and their parents generally do not report that the pain reaches its maximum intensity in less than 1 minute, but they do report a sudden or abrupt intense headache. In general, the likelihood of identifying intracranial pathology in children who arrive at the emergency room with acute headaches is substantially lower than in adults. Intracranial vascular pathologies are less common in children. The incidence of hemorrhagic stroke in children is estimated at 1.1-1.4 per 100,000 children and this is much lower than in adults (51.4-57.3 per 100,000).

Conclusion
Further research is needed to examine whether neurovascular and non-vascular neurological causes are related to thunderclap headache in pediatric patients presenting to primary, secondary and tertiary emergency services. Validated pain scales suitable for the pediatric and adolescent age groups are mandatory for diagnosing severe pain.

Keywords: Thunderclap headache; Children; Diagnosis.

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Headache Medicine

What Would Make it Easier for Patients to Complete a Headache Diary

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Introduction
Headache is one of the most common symptoms found in medical practice and the most frequent diagnosis in general neurology outpatient clinics. although, for most people, the pain is sporadic and not disabling, for a considerable proportion of the population, headaches are frequent and disabling, generating suffering and negative repercussions for their family, social, school and professional lives. recording pain complaints in a diary is one of the pillars of migraine treatment, it helps patients and professionals to better understand pain, sensitizing patients to improve adherence to treatment, and professionals to analyze the good response to medication or not, depending on the reduction in frequency, intensity and functional impairment of patients, thus facilitating dialogue between doctor and patient and contributing to more effective conduct. at the general hospital of fortaleza (hgf), a headache diary is used. it is a manual instrument to be completed daily by patients in which it records the frequency, intensity of the pain, as well as changes in its functionality. it is concise and easy to complete. this simplified form arose from the idea of facilitating and increasing the filling out of information by patients who, for the most part, have low education and have difficulties in managing something more complex.

Objective
obtain suggestions from patients to facilitate filling out the headache diary in the neurology outpatient clinic – headache subspecialty.

Method
this is a qualitative work carried out using a semi-structured questionnaire, data collection was carried out once a week for a period of two months, in the headache clinic before care. before data collection, the reasons and importance of the research were explained to the patients, everyone accepted and signed the informed consent form.

Results
51 patients were interviewed, of which only 35 patients gave suggestions to facilitate filling out the headache diary, which were as follows: no suggestions/satisfied: 16 people (45.7%); creating an online application: 7 people (20%); create forms for illiterates: 4 people (11.4%); pay more attention and leave it in a more accessible place so as not to forget: 3 people (8.5%); add figures/colors: 2 people (5.7%); some instrument to record the voice: 1 person (2.8%); have more space for registration: 1 person (2.8%) and understand how to fill it out: 1 person (2.8%).

Conclusion
Based on data collection, we concluded that the majority of patients were satisfied with the current model of the headache diary proposed in the outpatient clinic, followed by some suggestions such as the creation of online applications, creating new strategies for people with no education, in addition to adding drawings or figures and obtain mechanisms for recording the voice. completing the headache diary is extremely important in pain management and you should be instructed to complete it at every appointment.

Keywords: Headache; Headache Diary; Patient.

Headache Medicine

Cholesterol Granuloma in the Petrous Apex with Headache: a Case Report

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Introduction
Cholesterol granuloma is a type of granulation tissue, representing the most common cystic lesion of the petrous apex. It most commonly affects young and middle-aged patients with a history of chronic otitis media. Its clinical presentation is variable, with symptoms varying according to the affected sites. However, headache is not a commonly encountered finding in this condition.
Objectives
We present a challenging case of a patient with this condition and clinical presentation of headache.
Case Report
D. P. R., male, 42 years old, with a history of headache and a previous computed tomography scan that showed a lesion in the petroclival region, requiring an MRI examination with contrast, as well as spectroscopy and perfusion for better investigation. The examination revealed an expansive lesion with lobulated contours, with heterogeneous high signal in all sequences, with focus of low signal in SWI, without contrast enhancement, centered on the right petrosal apex and extending to the clivus. It is related to the petrous portion of the ipsilateral internal carotid artery, projecting to the cerebellar pontine cistern and involving the sixth cranial nerve. Spectroscopy and perfusion showed no relevant changes. The pathogenesis of cholesterol granuloma is controversial, with two explanations. The vacuum-obstruction theory, which is believed to be associated with auditory tube dysfunction due to an underlying abnormality, which causes edema and recurrent episodes of bleeding. Another theory is the exposed marrow, where the hyperplastic mucosa invades the underlying bone and exposes the bone marrow, which causes bleeding. In both scenarios, the blood undergoes degeneration and sets up a chronic inflammatory response. Regarding imaging aspects, it presents high signal on T1 due to the cholesterol and methemoglobin component, with a halo of low signal due to the deposition of hemosiderin. In T2-weighted sequences, high central signal and low signal border are observed. It is unusual to present contrast enhancement, but it is difficult to distinguish due to the high intrinsic signal on T1 sequences, even with fat saturation. Given this signal behavior, cholesterol granuloma can be easily distinguished from lesions that frequently affect the petrous apex, such as cholesteatomas, skull base tumors, asymmetries in the fatty marrow and other collections in the petrous apex.
Conclusion
Granuloma of the petrous apex accompanied by headache is unusual and has a typical behavior on magnetic resonance imaging, with high diagnostic presumption. Its detection is important in the context of symptomatic patients, as is its location and involvement of adjacent structures, contributing to the decision and planning of surgery.

Keywords: cholesterol granuloma; petrous apex; headache.

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The approach to headache in Primary Health Care by medical professionals

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Introduction
Primary health care (PHC) is the gateway to the Unified Health System (SUS), offering comprehensive and accessible care that can meet 80% to 90% of a person's health needs throughout their life. . This is the initial step, which seeks to understand the complexity of each case in order to direct you to the most appropriate care.
Headache represents a public health problem and can be primary, when it is the pathology in itself, or secondary, when it is a symptom of another underlying pathology. It is the 2nd health problem for humanity, the 9th cause of medical care and the 4th cause of emergency room visits. It is associated with a high socioeconomic impact, decreased quality of life and reduced work productivity in relation to absenteeism. In most cases, it is not related to other clinical conditions and, when present, they are usually simple conditions, such as airway infections and temporomandibular joint disorders. However, it is necessary to pay attention to warning signs that indicate headache secondary to more serious events.
Objectives
Raise awareness among the academic and medical communities and public health managers about the inability of PHC medical professionals to care for headaches and, thus, increase the resoluteness of their approach.
Methods
This is a narrative review carried out in digital databases, books and information from world- renowned organizations.
Results
Primary Health Care is the recommended assistance for this care, as the identification of the different types of headache begins by taking the patient's history and performing a basic general clinical and neurological examination.
During the assessment, it is essential that the healthcare professional has the ability to evaluate all relevant signs and symptoms to determine the best course of action in the event of a headache. The identification of the causes of origin, the recognition of their characteristics, the identification of the types of pain and appropriate treatment for each one are necessary knowledge to determine the flow of care in Primary Health Care.
It is observed that there is a lack of preparation among health professionals, which creates difficulties in approaching primary headaches in Primary Care, often leading patients to live with a chronic disease, compromising their daily activities, and even without adequate treatment, resulting in referrals. unnecessary to the specialized (secondary) service.
It is necessary to have an intervention method that is easy for the team to learn, with few hours of training, quick application and low cost. With this, it is expected to identify and diagnose a greater number of cases of primary headache in primary care, carry out their correct treatment, as well as point out signs of secondary headache and indications for referral to specialized care.
Conclusion
Primary Care is capable of addressing most of an individual's health problems throughout their life. It is possible to better manage how to act to prevent, carry out a more assertive diagnosis, provide more effective treatments and promote the rehabilitation of headache patients. Improving access to information and health education for patients and health professionals is essential to improve headache management in primary care, which should lead to rapid diagnosis and more effective treatment, without overloading the public service. healthcare system with unnecessary referrals at more complex levels of healthcare

Keywords: Headache;Primary Health Care;Doctor.

Headache Medicine

Observational analysis of 12 years-experience with OnabotulinumtoxinA in the treatment of chronic migraine treated in a tertiary headache center

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Categoria: Tratamento Preventivo da Enxaqueca

Introduction
Migraine is a very prevalent neurological disease and often disabling. Chronic migraine (CM) is a severe form of migraine characterized by recurrent headache, which occurs on at least 15 days per month, for a period superior to three months. The treatment of MC is challenging and involves a multimodal approach. Botulinum toxin type A (TBA) - OnabotulinumtoxinA - has been a promising treatment option for MC, especially for those patients who do not respond to other therapies. In our service, we started applying TBA for MC in August 2011, it was the first Brazilian service funded by the SUS to carry out such treatment.

Objective
To demonstrate real-life data on long-term follow-up of patients with super-refractory MC undergoing treatment with TBA followed at the headache outpatient clinic of the HCFMRP-USP.

Methods
This is a cross-sectional study that analyses retrospective primary data, obtained through HCFMRP-USP medical records. Descrip-tive analysis was performed using frequency ratios.

Results
Analyzing the data from 08/25/2011 to 08/31/2023, a total of 81 patients underwent MC treatment with TBA, of which 72 were female and 9 were male. The age at the beginning of the applications ranged from 18 to 70 years old (average of 42.8). Patients underwent an average of 9.7 applications, with the highest number of applications in the same patient was 33. All patients continued to use oral prophylactics. Forty-eight patients left the application protocol, 14 due to resolution of the CM, 14 due to ineffectiveness, 13 lost to follow-up, 4 due to side effects (1 due to allergic reaction on the second application, 1 due to eyelid ptosis, 1 due to weakness cervical and 1 due to worsening of the psychiatric condition that the patient associated with the application of TBA) and 3 due to pregnancy.

Conclusion
Although treatment with TBA for MC has proven efficacy in several clinical trials, the experience of our service allowed us to verify that a large proportion of patients, despite showing a satisfactory response to sequential applications of TBA, will not return to episodic migraine without the use of the toxin in association with oral prophylactics, requiring use for a very long time to maintain adequate pain control. A reasonable hypothesis for this finding in our outpatient clinic is that, as it is a public service, with limited funding, our patients undergoing treatment with TBA are much more complex than those in the previous protocols and already had documented refractoriness to other treatments available before treatment with TBA is indicated.

Keywords: Botulinum toxin; Chronic migraine; Treatment.

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The Effects of Physical Exercise in the Treatment of Migraine: a Literature Review

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Categoria: Tratamento Preventivo Da Enxaqueca

Introduction
Migraine is a disabling primary headache disorder that affects about 13% of the world's population. It is the second most prevalent neurological disorder and causes more disability than all others put together. Clinically, it manifests as acute headache episodes that may be accompanied by nausea, vomiting, confusion, blurred vision, fatigue, and hypersensibility to light, sound, or noise. When those episodes become highly frequent, it can mean the condition has developed into a chronic migraine. Its pathogenesis is widely credited to a peripheral and central activation of the trigeminovascular system, but the specific pro-cesses remain obscure.
Unlike most chronic conditions, the healthy and young or middle-aged population are largely affected. It has been reported in the 18 to 44 years population the highest migraine prevalence. Migraines affect people's quality of life and ability to participate in work, family, and social events.
Even though there are many pharmacological treatment options available to migraines, these can not be effective for some patients individually, and they may have side effects. As for the prophylactic drugs, non-adherence is a common problem faced by physicians. Therefore, since this condition exerts influence on a large parcel of the population with significant well-being and social damage, it becomes clear that further evidence-based non-pharmacological approaches to complement pharmacothera-py in migraine prevention is needed.
Objectives
The present study aims to analyze the importance of physical exercise as treatment to chronic headache through the identifica-tion of its beneficial effects and to evaluate which exercise modality offers the most satisfying results.
Methods
This study was based on selected articles available on PubMed and Google Scholar databases. "Migraine", "treatment" and "physical exercise" were used as descriptors on both databases. Next, the filter "published in the last 5 years" was applied, resulting in 146 results. The selection was made based on the articles with the most relevant highlines on the addressed subject where the focus was simultaneous presence of the themes, therefore, excluding the studies on which the themes were approa-ched separately. Finally, 4 articles compatible with the aims of this study were selected.
Results
Based on these articles it can be seen that exercises play an important role in prophylactic and therapeutic treatment for mi-graine. It was reported that exercises cause a significant reduction in pain intensity as well as beneficial effects on duration and frequency of migraine attacks, with no worsening of the condition. Furthermore, while all tips of intervention protocols are effective in reducing the frequency of migraine, strength/resistance training resulted in the highest efficacy followed by high-intensity and moderate-intensity aerobic exercise.In teenegers and adults migrine patients, scientific research shows that in addition to decrease migraine outcomes, there are a series of benefits that improve the quality of life of these patients and conferring multiple health benefits.
Conclusion
In this context, exercise practice has shown to be an important non-pharmacological approach for the reduction of frequency, duration and intensity of migraine attacks as well as the control of other comorbidities that reduce the quality of life of these patients. Furthermore, strength training exercise has shown highest efficacy, followed by high-intensity aerobic exercise.

Keywords: Exercise; Migraine; Treatment.

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Headache Patterns in Chiari Malformations - Epidemiology, Pathophysiology, and Treatment Insights: a literature Review

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Categoria: Cefaleias Secundárias

Introduction
Chiari malformations comprise a group of congenital conditions characterized by anatomic abnormalities of the cerebellum, brainstem and craniocervical junction. The specific structural defects identified allow further classification in type I to type III. Clinical manifestations can range from asymptomatic to severe neurologic impairment, and headache is one of the most com-mon presentations.

Objective
To describe the patterns of headache associated with Chiari malformations, detailing the epidemiology, underlying pathophy-siology, radiological findings and treatment options based on a literature review. Methodology
This is a literature review which analyzed articles in English published in the last 10 years, between August and September 2023. The descriptors used were ("Arnold" AND "chiari" AND "malformation" AND "headache") in the databases PubMed and Embase. A total of 15 articles were found to be relevant to the topic.

Results
Out of the 15 articles analyzed, two estimated the prevalence of headache among patients diagnosed with Chiari Malformation I (CM), as defined by the cerebellar tonsils located at least 5 mm below the level of the foramen magnum in imaging exams, to vary between 32% and 92%. However, determining the prevalence and incidence of Chiari Malformation (CM) itself, which may or may not be associated with headache, is a challenge, as many of the prevalence estimates are based on imaging tests. Regarding the pathophysiology of CM, it can be summarized as a divergence between the contents of the brain and those of the supratentorial cranial vault and posterior fossa. As a rule, the pathological mechanisms that can lead to CM1 fall into 4 groups: 1) structural anomalies of the skull base, 2) abnormal segmentation of the vertebral and cervical bodies, 3) overcrow-ding caused by a cranial vault and/or posterior fossa and 4) excess tissue in the posterior fossa or throughout the cranial vault. These alterations compromise the circulation of cerebrospinal fluid (CSF), leading to a poorly regulated CSF pressure: this is the mechanism thought to explain the so-called "classic" Chiari headache, characterized by intense occipital pain triggered by Valsalva-like maneuvers. A study has identified 1,913 patients with Chiari Malformation (CM), of whom 1430 complained of headaches. While 912 (63,77%) had typical headaches, the most prevalent being headaches associated with coughing, another 453 patients (31,6%) had atypical headaches, such as migraine, tension headaches, cluster headaches, trigeminal neuralgia, etc. Regarding the treatment of typical headaches associated with CM, the study compared conservative or surgical treatment, comprising 3 techniques: 1) extradural decompression (DED), 2) intradural decompression (DID) and 3) decompres-sion of the foramen magnum; the rate of improvement in headaches was much higher with surgical treatment. In addition, one article found a correlation between radiological findings in magnetic resonance imaging (MRI) and headache improvement, showing that the greater the preoperative tonsillar descent, the greater the improvement in the minimum intensity of headache after decompression of the foramen magnum.

Conclusion
CM is closely associated with symptomatic cases of headache. However, determining the overall prevalence and incidence of CM, whether related to headaches or not, remains a challenge due to the dependence on imaging tests for diagnosis. The pathophysiology of CM is linked to various structural anomalies and disrupts the circulation of cerebrospinal fluid, leading to a range of symptoms. These results highlight the complexity of CM and the need for adapted diagnostic and treatment strategies to address both the malformation and the associated symptoms, particularly headaches.

Keywords: Chiari Malformation; Valsalva Headache; Literature Review; Chiari Malformation treatment.

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The Prevalence of Headache Among the Main Symptoms in the Diagnosis of Lung Diseases: an Integrative Review

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Introduction
Headache is characterized by pain in any part of the head, which also includes the scalp, upper neck, face and the inside of the head and brings many patients to the doctor's office every day. Nowadays, it is observed that headache is a symptom present in most existing lung diseases, such as asthma, chronic obstructive pulmonary disease (COPD), bronchitis, etc. Although it is a very present symptom in these diseases, in most cases this headache ends up being associated with any other type of pathology, which ends up making it difficult to understand lung diseases and which factors trigger the headache symptom in them. In this sense, this work is justified by the need to investigate the frequency of headaches among the main symptoms in the diagnosis of diseases that affect the lung.

Objectives
To analyze the prevalence of headache among the main symptoms in the diagnosis of lung diseases. Methods: This is an integrative review, therefore a search was carried out in the LILACS, CAPES, MEDLINE, SCIELO databases using the following descriptors: " Headache ", " Lung Diseases ", " Pulmonary Disease , Chronic Obstructive ", " Asthma ", " Symptoms " "Main", combined through the Boolean operator "AND". Articles available in their full version, published in Portuguese, Spanish and English, in the last 5 years, were chosen. Furthermore, articles that talked about the direct relationship between headache and a symptom of lung disease were selected and articles that did not directly address the presentation of headache as a symptom of lung disease were discarded.

Results
According to the data extracted from the articles, it is possible to understand that headache is one of the symptoms that are very present in the diagnosis of various lung diseases. Some research has highlighted that headaches in lung diseases, such as asthma, are caused by the pathophysiology of these lung diseases, which for the most part affect breathing and end up impairing the circulation of oxygen throughout the body, including the brain. In one of the articles that dealt with the presence of headache in bronchitis, approximately 30% of patients presented this symptom. This fact, according to the articles, makes headaches so common in lung diseases, since these diseases cause impaired oxygenation in the brain and end up triggering headaches as a response to this low oxygenation.

Conclusion
Therefore, it is possible to conclude that despite few studies related to this topic, it appears to be quite pertinent and it was observed in the articles that headache is one of the most common symptoms in lung diseases and that the physiology of a lung disease favors the appearance of this symptom in affected patients, as it directly affects the oxygenation of nervous tissue. In this sense, there is a need for more research to further validate this association between the symptom of headache and lung diseases, so that this symptom is taken with more consideration when concluding a diagnosis of the most diverse diseases that affect the lungs.

Keywords: Headache; Symptoms; Lung Diseases.

Headache Medicine

"Beyond Pain": Health Education about Headaches

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Categoria: Educação Sobre Cefaleias para Profissionais de Saúde e Pacientes

Introduction
Headaches are an important public health problem, but they remain underdiagnosed and undertreated. In addition to being reported as one of the symptoms of SARS-COV-2 infection, the frequency and severity of headaches have increased in uninfected individuals due to psychological stress, social isolation, sleep disturbances and inadequate eating habits. In addition, the project also meets the mission of the UECE Medicine Course, as set out in the Academic Standards for the Medicine Course: "To train general practitioners with a solid scientific and technical foundation, endowed with ethical behavior, a sense of affection for their fellow human beings, analytical capacity and creative power in the application of the knowledge and practices acquired to make decisions in the promotion, maintenance and habilitation of individual and collective health". Therefor, the project aims to inform the population about the main characteristics of primary and secondary headaches, their causes, risk factors and the ways in which they occur, as well as the factors that make them better and worse, so that the public can correctly identify the type of headache and know how to prevent a crisis or manage it.
Objectives
General: Contribute to health education about headaches.
Specific: Discuss an artistic initiation project on health education in headaches for the general population, developed by medical students from the State University of Ceará.
Methodology
The project is being developed using a socio-educational methodology, within a process of interaction through Instagram posts, physical banners and other artistic tools between students and the community interested in the topics analyzed. April was dedicated to tension headaches; May was dedicated to the study of migraine; June was dedicated to cluster headaches; July was dedicated to trigeminal-autonomic headaches; August is being dedicated to SUNCT and SUNA. In a second phase, educational activities will be held at the Leonel de Moura Brizola EEEP. During the approach to the participant, educational pamphlets will be handed out with images of headaches, as well as the use of banners to help explain the subject.
Results
To date, 8 materials have been produced and posted (2 on tension headaches, 2 on migraines, 2 on cluster headaches and 2 on trigeminal-autonomic headaches), as well as 2 banners to be displayed at EEEP Leonel de Moura Brizola. 526 likes, 57 comments, 42 shares and 46 saves were obtained from all the posts. In all, 4237 Instagram accounts were reached. The main cities affected were: Fortaleza (55.2%), São Paulo (3.4%), Caucaia (1.5%), Sobral (1.4%) and Eusébio (1.2%). Ultimately: In the population reached, the project contributed to the spread of knowledge about headaches in various aspects, such as their correct identification and how to deal with a case of this symptom, triggering factors, as well as their prevention, through face-to-face and virtual interventions, so that understanding this information transforms the individual into an active participant in their health-disease process. Finally, for the university, its role as a creator of knowledge is ratified in the educational environment and in the context of social improvement.
Conclusion
In view of this, the artistic initiation project "Beyond Pain: Health Education about Headaches" consists of an initiative to raise awareness about the main aspects of the multiple etiologies of headaches through the creation of banners and posts of a socio-educational nature. The project recognizes the need to disseminate knowledge about headaches and aims to help the target audience identify the type of headache, as well as causal, risk, improvement and worsening factors, with a view to behaving correctly in the event of a crisis or even preventing it, as well as improving the population's quality of life, since this is one of the most common conditions among the population, with negative individual, social and economic impacts.

Keywords: Headaches;Health Education;Prevention.

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The importance of vessel wall resonance in the differential diagnosis of headache in the emergency room: report of three cases

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Categoria: Cefaleias Secundárias

Introduction
Headache is a common complaint in patients who seek emergency care units. For many doctors in the emergency room, it can be difficult to determine which of these patients deserve neuroimaging, especially requesting vessel wall resonance for differential diagnosis, in order to rule out potentially serious cases.

Objective
To describe the report of three patients complaining of headache, whose vessel wall magnetic resonance imaging demonstrated three different pathologies.

Case report
Report of three patients treated in the emergency room of a private clinic in Fortaleza-CE, where they underwent neuroimaging exams. The first, M.S.V.S., female, 22 years old, with intense and refractory holocranial headache, whose arterial resonance performed in 2021 showed the presence of areas of small reduction in caliber, alternating with normal or slightly increased caliber, compromising the distal third of the artery basilar, left P2 segment and proximal regions of branches of the posterosuperior trunk of ipsilateral M2 and M3, in addition to minimal segmental fusiform dilation in left P2, findings suggestive of reversible cerebral vasoconstriction and, secondarily, arteritis as an etiological possibility. Twenty days later, magnetic resonance angiography of the cerebral arterial vessel wall showed normalization of the areas of stenosis previously described, without thickening or parietal contrast uptake, corroborating the diagnosis of reversible cerebral vasoconstriction. Another patient, C.J.S., male, 32 years old, with occipital headache of intensity 5/10, responsive to analgesia, whose intracranial vessel wall angioresonance performed in 2019 demonstrated small areas of reduction in caliber alternating with segments of caliber normal areas of the M2 portion of the right middle cerebral artery and P2 of the left posterior cerebral artery, without showing parietal thickening or anomalous contrast uptake, considering reversible cerebral vasoconstriction as the presumed etiology. Another patient, J.M.P.M., female, 43 years old, complaining of right hemicranial headache, whose cerebral arterial and venous angioresonance, carried out in 2022, showed apparent parietal thickening with a slight heterogeneous hypersignal in the TOF sequence, with a semilunar appearance, of the distal portion of the right cervical internal carotid artery, not observing its proximal limit and not determining significant stenosis, findings that outlined the possibility of dissection. Three days later, magnetic resonance angiography of the carotid and vertebral arteries was performed, confirming the hypothesis of dissection of the right internal carotid artery.

Conclusion
Given this, it is clear that the different spectrums of headache require attention and recognition to continue the necessary diagnostic investigation. Despite this, the majority do not require imaging tests as they are benign and self-limited episodes. It is important to note that patients over 55 years of age with new-onset headache in the temporal regions should be evaluated for temporal arteritis, and magnetic resonance imaging or magnetic resonance angiography are the preferred modalities, although they are unlikely to be performed in the emergency department. Reversible cerebral vasoconstriction syndrome, in turn, generally causes thunderclap headaches and its symptoms mimic those of aneurysmal subarachnoid hemorrhage. Imaging exams are important to confirm the diagnosis and exclude other causes, however, they are not always performed immediately. Spontaneous craniocervical dissections, in turn, can be triggered by minor activities such as coughing or cervical manipulation. The accuracy of magnetic resonance angiography and computed tomography for diagnosis is relatively similar, which is essential in the emergency context.

Keywords: Headache; arteritis; Cerebral vasoconstriction; Dissection of the internal carotid artery.

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Headache Medicine

Intracranial hypertension associated with complex dural fistula after traumatic brain injury, cerebral venous thrombosis and venous stenosis

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Categoria: Cefaleias Secundárias

Introduction
Intracranial arteriovenous fistulae (dAVFs) are rare lesions, accounting for 10 to 15% of all intracranial vascular malformations. DAVFs are typified by pathological anastomoses between meningeal arteries and dural venous sinuses or cortical veins. These fistulae frequently reside within the dural leaflets surrounding a venous sinus, characteristically at the transverse-sigmoid junction but also at the cavernous sinus (CS), superior sagittal sinus, anterior cranial fossa, tentorium, and other locations. The etiology of dAVFs is unclear in many instances; however, they are thought to be acquired after trauma, surgery, venous stenosis, or sinus thrombosis. Various treatment modalities are used to manage aggressive dAVFs, including endovascular techniques, surgery, radiosurgery, or a combination of these treatments.

Purpose
Our purpose is to report a case of a patient presenting headache with alarm signs later diagnosed with intracranial hyperten-sion secondary to multiple etiological factors.

Case report
A 43-year-old man came to our hospital complaining of a persistent, pulsating headache associated with reduced visual acuity and diplopia for 6 months. Furthermore, he had frequent episodes of transient visual obscuration. He had suffered an automo-bile trauma 2 years ago with brachial plexus and right external jugular injuries. The patient also had lower limb thrombosis two years ago, without a diagnosis of thrombophilia. On physical examination, he had visual acuity of 20/40 LE and 20/30 RE. There was grade 4 papilledema on fundoscopy. The strength in the right arm was grade 4+ due to previous trauma. Neuroima-ging showed signal failure in the distal portion of the superior sagittal sinus, extending to the torcula, communicating with large and tortuous vascular structures, suggestive of posterior dural arteriovenous fistulae. There was also stenosis of the middle third of the transverse sinuses. Cranial MRI showed signs of intracranial hypertension, with posterior straightening of the eyes, licorice accentuation of the optic nerve sheath, and partially empty sella turcica. A lumbar puncture was performed, with an opening pressure of 43cm H2O. Arteriography showed complex arteriovenous fistulae in the posterior region, associated with the supe-rior sagittal sinus and torcula thrombosis. The patient received acetazolamide (2g/day) to treat intracranial hypertension, and his visual complaints improved. Full anticoagulation was chosen because of its contribution to intracranial hypertension. The patient continued with neurological and neuroophthalmological monitoring. Two months later, the fistula was embolized with 70% occlusion. The patient is now stable, with improvement of the headache and visual complaints.

Conclusion
Endovascular treatment remains the first line of treatment in cases of complex dural fistulas. We emphasize the need to perform a fundoscopy in the emergency department as a fundamental step of the physical examination to recognize severe conditions.

Keywords: Intracranial hypertension; Fistula; Traumatic brain injury.

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Headache Medicine

Trigeminal Autonomic Headache Secondary to Submucosal Hemorrhage of Frontal Sinus Caused by Barotrauma

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Categoria: Cefaleia em Salvas e Outras Cefaleias Trigêmino-Autonômicas

Introduction
Headache attributed to airplane (AH) travel was formalized in International Classification of Headache Disorders III Beta Edition (ICHD III-B) in 2013 and in the past few years, several cases of this condition have been reported. In this condition, ipsilateral nasal congestion or tearing may occur in 5% of cases and usually magnetic resonance imaging (MRI) studies are normal but a small patient group shows inflammation and thickening of the mucosal wall in the sinuses.
Recurrence of the pain is required to fulfill diagnostic criteria for AH. In this case study we illustrate a patient with a similar clinical presentation to AH but with evidence of submucous hemorrhage of the frontal sinus.
Objectives
1. Describe a case of headache with trigeminal autonomic characteristics due to submucosal hemorrhage of the frontal sinus secondary to barotrauma.
2. Describe the neuroimaging findings that suggested the diagnosis
Case Report
A 28-year-old male patient with no significant past medical history or prior headache history presents with abrupt sharp, severe pain above the right eye with its peak within seconds and lasting about 5 minutes, described as the "worst pain of life". The pain was associated to ipsilateral trigeminal autonomic symptoms such as conjunctival injection, lacrimation, nasal congestion, rhinorrhea, and semi ptosis. Episode began while traveling during plane descent and improved minutes before landing persisting with just a subtle discomfort during the rest of the day. During the event, the patient was able to film by smartphone the autonomic features. Symptoms suggestive of upper airway infection or sinusopathy were absent. After the episode, subtle right semi ptosis persisted for about 4 days with progressive resolution and no specific treatment was needed due to the spontaneous improvement.
MRI and MRI angiography was performed three days after the headache and depicted T2/FLAIR and T1 hyperintense lesion in the right frontal sinus above the orbit without enhancement after contrast injection. SWI sequence showed hypointense signal. MRI angiography was normal. Noncontrast CT scan was performed which showed a soft tissue density lesion in the right frontal sinus.
Discussion
Based on clinical presentation and imaging findings, the diagnosis of headache secondary to submucosal hemorrhage of frontal sinus was made. The effects of pressure variations during the flight may cause inflammation of the parasinuses resulting in a reduced ventilation of the sinuses and causing a "vacuum effect" that leads to barotrauma and submucosal hemorrhage. This mechanism may be predisposed by anatomical variations causing reduced patency of the nasal pathways and difficult to equalize the pressure between sinuses and atmosphere.
The hypothesis to explain the clinical presentation in this case is that the damage of the sinuses and nasal mucosa that receive sensory innervation from the trigeminal nerve may activate the trigeminovascular system leading to headache with trigemino autonomic features.
In the author's opinion, although the patient experienced a single episode and do not meet diagnosis criterion for AH the submucosal hemorrhage in this case may suggest that the pathophysiology of AH is related to minimum barotrauma, insufficient to be identified on neuroimaging.
Conclusion
This case report illustrates a rare presentation of frontal sinus barotrauma making differential diagnosis with trigeminal autonomic cephalalgias. Neuroimaging was essential to rule out other secondary causes of thunderclap headaches, especially posterior communicating artery aneurysm rupture in view of persistent semi ptosis. The correct diagnosis and explanation about this condition to the patient is essential due to the psychological implications, such as anxiety and fear of airplane travels.

Keywords: Trigeminal; Barotrauma; Thunderclap.

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Headache Medicine

Genetic Biomakers: the Promising Tools in the Diagnosis and Manage of Headache Cases

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Categoria: Genética e Biomarcadores em Cefaleia

Introduction
Headaches are any painful process of the nervous system that reaches a certain cephalic segment. Enhanced by the speed of contemporary life, they, in addition to being one of the most disabling pains, have become even more prevalent, affecting more than half of the world's population. Given this, science sought to find ways to mitigate this situation. It is known that one of the promising and usable tools in such pain conditions are genetic biomarkers. Thus, since this work is relevant due to the need for more and more studies that address the theme of headaches, its justification is given by the intention of better understanding how genetic biomarkers can participate in the diagnosis and management of headache occurrences.

Objective
To analyze genetic biomarkers as tools in the diagnosis and management of headache cases.

Methods
This is an integrative review based on research in the MEDLINE, EMBASE, LILACS and SciELO databases, using the descriptors "Biomarkers", "Genetics" and "Headache Disorders", combined using the Boolean operator "AND". We selected studies available in their full versions, published in English, Portuguese or Spanish, between 2019 and 2023. After screening in stages, excluding studies of the review type and those that were not directly related to the aforementioned descriptors, 11 articles were selected that addressed the usefulness of genetic biomarkers in the diagnosis and management of headache occurrences.

Results
We found data that contemplated the intention of this study. A priori, it was found that headaches due to excessive use of medication were likely to be analyzed by genetic biomarkers, due to the high methylation of the three genes (CORIN, CCKBR and CLDN9) in cells of patients affected by this condition, compared to control individuals. It was also found that the smaller T allele of the rs3782218 of the NOS1 gene, together with rs2779249 and rs2297518 of the NOS2gene, represents an important genetic biomarker of high relevance for, in hypertensive patients, the overlapping of this comorbidity by tension headache. In addition, research conducted with Finnish families has shown that there are biomarkers associated with polygenic effects that signal increased susceptibility to migraine. In fact, miRNA activities have been highlighted as signaling this type of headache. In addition, a case-control study pointed out that the analysis of epigenetic biomarkers, such as the methylation status of the Long Intercalated Nuclear Element-1 and the Short Intercalated Nuclear Element, in peripheral blood mononuclear cells (PBMCs) can help identify patients at higher risk of developing migraine. Finally, in addition to helping in the diagnosis of headaches, genetic biomarkers were presented as potential therapeutic factors, assisting in the management of patients affected by such pain conditions. Gene therapies based on the genes MEF2D, TSPAN2, PHACTR1, TRPM8 and PRDM16, being related to migraine susceptibility, have the potential to contribute to the treatment and prevention of migraine. The CHRNA7 gene can be controlled by hsa-miR-3158-5p, via copy number variations, to modulate the mechanism of pain associated with this pain condition. Effects associated with altering tryptophan degradation via kynurenine may also have therapeutic action, so that, together with the regulation of miRNA correlated to this, it has the potential to greatly enhance the management of headache cases.

Conclusion
It can be stated, therefore, that genetic biomarkers are promising tools, not only in the diagnosis, but also in the management of the various cases of these pain conditions. Thus, more and more studies are needed to reach and improve their therapeutic potential, so that it is possible to reduce the considerable impacts of headaches on society.

Keywords: Genetic Biomakers; Headache Disorders; Diagnosis; Manage of Headache cases.

Headache Medicine

The importance of imaging in the diagnosis of secondary headache: case report

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Categoria: Cefaleias Secundárias

Introduction
Primary headaches are those that occur without etiology, with a good prognosis; the secondary ones are those caused by pathologies, whether of vascular, infectious or oncological origin, among others. Imaging exams, in addition to clinical history, has a fundamental importance in the diagnosis and follow-up of such entities. Objective
To describe a case report of a patient who had been treating a primary left hemicranial headache, which was later shown, through imaging tests, to have a secondary origin to parotid neoplasia.

Case report
Patient F.L.F.M, male, 84 years old, from the rural area of Marco-CE, heavy smoker, with a history of long-standing left hemicra-nial headache, treated at the health center with dipyrone and anti- non-steroidal inflammatory drugs (NSAIDs). He was referred to the imaging service due to self-perception of a nodulation in the topography of the left parotid in association with worsening headache and refractory pain control. A contrast-enhanced tomographic study of the skull, face and neck was carried out, which revealed a solid, heterogeneous lesion, containing areas of necrosis/liquefaction, occupying the lower portion of the left parotid superficial lobe, determining bulging of the platysma and, indirectly, of the subcutaneous/ cutaneous tissue, suggestive of neoplastic involvement. The patient was referred to the head and neck surgery service to undergo the lesion excision proce-dure and subsequent histopathological study, which is still awaiting the results.

Conclusion
It is essential that, in addition to clinical suspicion, imaging exams are added to the investigative workup of headaches, since those with a secondary cause, as they originate from another problem, may have a better prognosis and quality of life for the patient. patient if treated early. Remember that elderly people, especially those who smoke, are high-risk patients for numerous pathologies, including secondary headaches.

Keywords: Headache; Parotid tumor; Head and neck neoplasia.

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Atypical Presentation of Idiopathic Intracranial Hypertension Simulating Demyelinating Disease of the Central Nervous System

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Introduction
Idiopathic intracranial hypertension (iih) is a syndrome of increased intracranial pressure of unclear etiology that most often occurs in obese women of childbearing age, the prevalence ranges between 0.5 and 2 per 100,000 habitants and is expected to increase further given the worldwide increase in obesity. Headache and papilledema are common signs, but asymmetric papilledema in iih is an uncommon finding that can raise concern for alternate diagnoses, such as unilateral optic neuropathy (on), present in demyelinating diseases of the central nervous system (cns) manifesting unilateral or bilateral visual loss, mainly in young women such as iih.

Objective
To highlight the importance of revisiting the diagnosis of atypical cases of iih and especially in cases of asymmetric involvement of optic nerves, we must differentiate optic neuropathy from iih, considering that these conditions have different treatments and early diagnosis can prevent permanent visual loss.

Case Report
Woman, 46-year-old, obese and with previous and unnoticed total visual loss in her right eye for a year, presented to the emergency room with an atypical headache that worsened with exercise. Fundoscopy showed pallor of the right optic disc and edema of the left optic disc, the acuity of which was 20/20. In addition to a lumbar puncture (lp) opening pressure of 36cmh2o and 10 cells on cerebrospinal fluid analysis, she had a visual field test with left peripheral temporal loss. Orbital mri showed faint contrast enhancement in the bilateral optic nerve and nerve sheath, suggesting optic neuritis (on). The anti-aquaporin 4 antibody (aqp-4) was negative. After 2 days, lp was repeated and the opening pressure was 5cmh2o and due to the possibility of inflammatory disease of the optic nerve, 1g methylprednisolone was administered for 5 days. After that, the patient's symptoms improved. During outpatient follow-up, low-dose azathioprine and prednisone were started and, although the patient used the medications irregularly, her disease stabilized until three years later, when she began to complain of transient episodes of visual loss in her left eye. Ophthalmological evaluation demonstrated concentric visual loss and edema of the left optic disc. New cranial and orbital mri showed signs of intracranial hypertension, previously absent. A new lp revealed an opening pressure of 41cmh2o. Another aqp-4 test using the cba method was again negative. Then, four years after the first symptom, the patient was diagnosed with optic neuropathy caused by iih.

Conclusion
In our case, the patient was admitted with previous unilateral visual loss and progression to involvement of the other optic nerve. The first mri showed signs of inflammation in the optic nerve without signs of intracranial hypertension. Both lp and immunosuppressive treatment were instituted simultaneously. It was not possible to differentiate which of the two the patient developed a response to and it was subsequently decided to continue continuous treatment of the inflammatory condition. Until the recurrence of symptoms and imaging findings, visual field with concentric visual loss and persistence of intracranial hypertension years later revealed the diagnosis of iih. The clinical similarities between iih and inflammatory on, such as vision loss and the occasional presence of oligoclonal bands in csf, have brought to light the notion that antiglial antibodies associated with neuromyelitis optica may also participate in the pathogenesis of iih. Thus, some studies have focused on looking for the presence of antibodies aqp-4 or against myelin oligodendrocyte glycoprotein (anti-mog) in patients with iih. however, none of the studies showed these antibodies in patients with iih. medical reports in which these conditions have occurred concomitantly are rare and the phenotypic polymorphism of both conditions makes differentiating between these conditions a diagnostic challenge.

Keywords: Idiopathic Intracranial Hypertension; Demyelinating Disease; Differential Diagnosis.

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Theories About Migraine Aura During History: an Overview

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Categoria: Cefaleia na História e nas Artes

Introduction
The pathogenesis of migraine aura remains unclear, but is clinically dominated by one feature: the gradual spread of symptoms, usually over 5-20 min for each symptom. Many descriptions were made during time, from vasospastic theory and cortical ischaemia hypothesis to cortical spreading depression (CSD), described by Leão in 1944, which has been in focus since the 1980s, ally to new studies, like spreading oligaemia during migraine aura and subsequent discoveries of brainstem mechanisms.

Objective
To describe theories about migraine aura during history.

Methods
An integrative survey rose the data that was provided from the following scientific newspapers: PUBmed, BVsalud, EMBASE and CAPES. Once in these newspapers, the words 'migraine aura', 'theories', and 'history' were searched, combined with the boolean operator 'AND', providing the produced papers, without specified date, in english, spanish and portuguese. Furthermore, the original articles from the authors of the theories in this study were included. An overview was made.

Results
In 1941, Lashley published some observations of his own attacks of scintillating scotomas. He summarized his observations as follows: 'Maps of the scotomas of ophthalmic migraine sketched at brief intervals during an attack suggest that a wave of intense excitation is propagated at a rate of about 3 mm. per min. across the visual cortex. This wave is followed by complete inhibition of activity, with recovery progressing at the same rate'. In 1944, Leão described how EEG activity was successively depressed in different channels depending on their distance from an electric stimulus. Afterwards, he described that a wave of marked arterial dilation and increased blood flow in the pial vessels traveled simultaneously with the wave of CSD over the cerebral hemisphere. In 1945, Leão and Morrison proposed that CSD may be related to migraine with aura (MA) because of the slow development of scotoma and sensory symptoms. In 1969, Skinhøj and Paulson used the xenon-133 intracarotid technique with 16 detectors to investigate two patients. During the aura phase in one patient there was a reduction in regional cerebral blood flow (rCBF) of up to 66% compared with before the aura, a level known to be critical for normal oxygenation. The prerequisite for a more precise characterization of rCBF during migraine was the development by Lassen, with six patients with MA, the attacks were initiated by focal hyperaemia in three cases, and during the aura phase all patients developed rCBF reduction (oligaemia), which only in one case approached critical values. Oligaemia gradually spread anteriorly in the course of 15-45 min. In four cases severe headache was present concomitantly with oligaemia. Inspired by the rCBF results, Lauritzen investigated in 1982 CBF in rats during and in the wake of CSD by quantitative autoradiography. Cortical blood flow increased 218% during the CSD wave, but, more importantly, it decreased 15-27% after the hyperaemia and for more 1 hour after CSD. The changes in blood flow were largely limited to the cerebral cortex. After 1990, the CSD elicited by KCl significantly increased cell staining (c-fos protein-like immunoreactivity) within ipsilateral trigeminal nucleus caudalis (TNC). This was the first report demonstrating that neurophysiological events within the cerebral cortex can activate brainstem regions involved in pain processing via a trigeminovascular mechanism. In 2001, the study by Hadjikhani indicated that an electrophysiological event such as CSD generated the aura in the visual cortex.

Conclusion
Despite the theories are inconclusive about the migraine aura, the most relevant studies make an association between CSD and the rCBF. So many more studies are in process to elucidate this question on neuroscience.

Keywords: Migraine aura; Theories;History; Cortical spreading depression; Cerebral blood flow.

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Headache Medicine

Headache Control and quality of life in Idiopathic Intracranial Hypertension: Analysis of Tertiary Hospital in Fortaleza/CE

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Introduction
Idiopathic intracranial hypertension (IIH) is a condition of unknown etiology characterized by elevated intracranial pressure and papilledema without evidence of intracranial expansive lesion or cerebral venous thrombosis. Headache is the most common symptom and the main reason for seeking medical care in patients with IIH. Headache determines quality of life. Studies indicate that, even with specific treatment of reduction of intracranial pressure and resolution of papilledema, there was no evidence of significant improvement in headache and quality of life. However, according to Mollan et al, headache control is crucial for the quality of life of these patients and one of the ten research priorities for this disease.

Objectives
To evaluate headache control and correlate it with the impact on the quality of life of patients undergoing IIH treatment followed at the outpatient clinic of the Hospital Geral de Fortaleza

Methodology
Cross-sectional observational study, with a descriptive aspect, with retrospective data analysis based on the analysis of medical records, interviews with patients with IIH followed at the headache outpatient clinic of the Hospital Geral de Fortaleza in the State of Ceará and application of questionnaires, such as World Health Organization Quality of Life instrument (WHOQOL-BREF), Headache Impact Test - 6 (HIT 6), headache diary and Pittsburgh sleep quality index and Diagnostic and Statistical Manual of Mental Disorders (DSM V). previously approved by the ethics committee.

Results
A population of 22 patients was found who met the diagnostic criteria for IIH according to the 2013 Friedmann criteria, but it was only possible to interview 17 patients. Our sample consisted of predominantly female patients, with a mean age of 38 years. The mean follow-up time was 4 years, ranging from 1 year to 15 years. The mean opening pressure measurement at diagnosis was 37.18 cm H2O, ranging from 28 to 57 cm H2O.
Headache control was was assessed using headache frequency and the HIT6 scale. As for the frequency of headache, 70% had less than fifteen days of headache per month(episodic pattern) and 30% had fifteen or more days of headache per month(chronic pattern). Furthermore, it was shown in the HIT-6 that 52.94% had a severe impact, 11.76% had a moderate impact and 35.29% had a mild impact.
We showed that headache control had statistical relevance inversely proportional of quality of life.
Sleep quality had a directly proportional statistical correlation with quality of life and in our sample reported that 76% of the patients had some sleep disturbance.
The presence of psychiatric disorders was showed in 59% of our patients, but we did not show any statistical correlation with quality of life
Perception of quality of life was assessed using the WHOQOL-BREF questionnaire with an average of 3.4 (regular quality of life). The most affected domain was physical health, around 76% reported that pain is important for quality of life. In addition, 76% are dissatisfied with their health, and 71% believe they are in dire need of medical attention.

Conclusion
In this study, we concluded that headache control and sleep quality are determinant for the perception of quality of life in patients with Idiopathic Intracranial Hypertension. The patients' perception of quality of life was generally regular. However, the majority showed dissatisfaction with their health with impairment of domain 1 (physical health) and having the perception of pain as one of the main factors, as well as sleep quality. Therefore, special attention is needed to treat pain and improve the quality of sleep in these patients.

Keywords: Idiopathic Intracranial Hypertension;Headache;Quality of life;Headache Control.

Headache Medicine

Analysis Of Sus Expenses With The Hospitalization Of Patients Affected By Headaches In The State Of Ceará, Between 2013 And 2022

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
Headaches are painful conditions of the nervous system that affect some area of the head. Such conditions have become increasingly prevalent, through the greater presence of habits, disorders and behaviors, such as poor diet, alcohol consumption and, mainly, stress, in order to impact the lives of people who suffer from them, disabling them. In fact, headaches affect more than 140 million Brazilians and are one of the most disabling pains in the world, leading many individuals to hospitalization. In this sense, it is expected that the costs to the Unified Health System (SUS) arising from this situation will be high. Thus, this study being relevant because it addresses a very common theme in society, its justification is given by the intention of better understanding how the expenses of the Unified Health System occurred with the hospitalization of patients affected by headaches in the state of Ceará, between 2013 and 2022.

Objective
To analyze the expenses of the Unified Health System with the hospitalization of patients affected by headaches in the state of Ceará, between 2013 and 2022.

Methods
This is a study of the cost of disease. The "TabNet" platform, made available by DATASUS, was accessed, where the axis "epidemiological and morbidities" was accessed, selecting the topic "Hospital Morbidity of the SUS (SIH/SUS)". Next, the subtopic "General, by place of hospitalization - from 2008" was selected, choosing "Ceará" as the geographical coverage area. Finally, the content "total value" was selected; the period "2013-2022"; the morbidity "Migraine and other cephalic pain syndromes"; the age group "All categories"; and "male" and "female" gender, obtaining the data of this study.

Results
In a period of 10 years, between 2013 and 2022, the SUS spent a total of 6,422,606.81 reais on the hospitalization of patients affected by headaches in the state of Ceará. In annual data, going from the oldest to the most recent year, were spent, in reais, respectively: 115,295.51, 232,825.55, 209,663.08, 198,401.67, 284,648.07, 508,269.95, 1,117,914.73, 920,478.54, 1,588,075.19 and 1,247,034.52. Under a statistical and financial bias, dividing this period into two intervals of 5 years, it is noticed that, comparing the first period of time (1,040,833.88 reais) to the second (5,381,772.93 reais), there was an increase of more than 400% of the costs generated by the hospitalizations of patients affected by headaches. Comparing the expenses between men and women, the costs arising from hospitalizations for headaches of female individuals (3,453,405.69 reais) is, in relation to that of males (2,969,201.12 reais), about 15% higher. Finally, analyzing the prevalence by age group, in the subgroups "Younger 1 year", "1 to 4 years", "5 to 9 years", "10 to 14 years", "15 to 19 years", "20 to 29 years", "30 to 39 years", "40 to 49 years", "50 to 59 years", "60 to 69 years", "70 to 79 years" and "80 years and over", The hospitalization expenses by age, respectively, in reais, were: 17,366.34, 67,210.92, 97,215.43, 152,997.95, 245,878.32, 589,145.44, 898,517.82, 1,204,830.94, 1,211,219.82, 1,058,695.28, 575,529.49 and 303,999.06. Thus, it is also observed that hospitalizations for headaches of individuals aged 40 to 69 years (3,474,746.04 reais) represent more than 50% of the total incidence.

Conclusion
It can be stated that the expenses of the Unified Health System with the hospitalization of patients affected by headaches in the state of Ceará, between 2013 and 2022, were quite significant, presenting a strong trend of increase. In addition, it can be observed that women and individuals, in general, in the age group of 40 to 69 years are the ones who generate the most costs, requiring greater attention and care. Therefore, it is evident the need for more and more studies that seek to better understand this situation, in order to provide its combat more effectively and, consequently, to reduce its expenses for the Unified Health System.

Keywords: Headache; SUS; Analysis of expenses; Hospitalization; Ceará. Keywords

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Headache Medicine

A case of migraine-like presentation secondary to vertebral artery dissection

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Categoria: Cefaleias Secundárias

Introduction
Vertebral artery dissection (VAD) is an uncommon cause of stroke in the general population and a common cause of stroke in patients younger than 45 of age. VAD occurs when a tear of the vessel wall compromises its structure, leading to arterial blood dissecting between layers of the arterial wall. VAD can develop spontaneously or be triggered by traumas to the neck. Headache is a common presentation in VAD and can be isolated or associated with other neurological signs. VAD-related hea-daches have no specific symptoms and sometimes might be confused with other forms of headache. VAD can mimic migraine typical symptoms, leading to a failed therapy until properly diagnosed. Herein, we reported a rare case of VAD mimicking a migraine-like presentation in a young woman.

Objective
Report and discuss a rare case of VAD causing migraine-like presentation.

Case report
A 38-year-old female was admitted with a sudden intense right frontal pulsatile headache, associated with nausea and intermit-tent dysphagia, after practicing intense physical exercise. Initial neurological exam showed right eyelid ptosis and right hemiface paresis, without any visual, pupillary or motor deficit. The patient has had chronic migraines since she was eleven years old and they became more frequent in the last year, with a different pattern in the past month. There was a family history of migraine with her mother and her five siblings presenting the same condition. A computed tomography (CT) scan did not show any acute cerebral injuries. Brain CT angiography revealed occlusion of the right vertebral artery. Magnetic resonance angiography ima-ging showed hematoma in the right vertebral wall compatible with dissection of the V4 segment without medulla infarction. The presentation of symptoms was consistent with incomplete Wallenberg syndrome due to a transitory compromising of brainstem structures and causing neurological impairments. Despite the neurological deficits and the dissection, the patient recovered completely from the symptoms, confirming a transient ischemic attack of medulla oblongata.

Conclusion
The possibility of vertebral artery dissection should be considered in the differential diagnosis of severe secondary headaches especially after physical exercise. The prognosis for patients with VAD will depend on the size, location, and time of the region affected by ischemia. Although rare, VAD mimicking migraine is a serious condition and clinicians should be aware of this presentation for an early diagnosis and proper managemen

Keywords: Vertebral Artery Dissection; Case Report; Migraine.

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Headache Medicine

Headache As a Common Post-Concussion Symptom Among Striking and Grappling Fighters

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Categoria: Cefaleias Secundárias

Introduction
Traumatic brain concussion is an injury that can result from direct impact to the cranial region or from another part of the body transferring energy to the head, causing acceleration and deceleration (shaking) of the brain. Concussion can occur in athletes participating in various sports, including combat sports, which are widely practiced worldwide. Striking and grappling are styles of combat used in combat sports. In the former, combat takes place while standing, involving striking techniques (e.g., Muay Thai, Boxing, Kickboxing), while in the latter, the fight involves grappling and can occur both standing and on the ground, with the objective of bringing the opponent to the ground (e.g., Jiu-jitsu, Judo, Wrestling). Due to the aim of striking the opponent in the head, close body contact, and falls in combat sports, the risk of traumatic brain concussion is significant and can manifest in various symptoms.

Objective
The objective of this study was to assess the history of concussion-related symptoms in Jiu-Jitsu (JJ) and Muay Thai (MT) athletes.

Methodology
This was a cross-sectional study involving a Brazilian sample of JJ athletes (n = 18) and MT athletes (n = 22). The sample included both professional and amateur athletes (with women constituting 20% of the sample). Individual interviews with a researcher were conducted to collect the following data: self-reported history of traumatic brain concussion and the timing of the injury (during training or competition). The
Post-Concussion Symptom Scale (PCSS) was also administered. In this study, a concussion was defined as a direct impact to the head followed by symptoms. This study received approval from a local Ethics Committee.

Results
Among JJ athletes, 61% reported a history of concussion, while among MT athletes, the percentage was higher (86%). The primary mechanisms of head impact were falls and elbow strikes to the head in JJ, and punches and knee strikes to the head in MT. There was no difference in post-concussion symptom scores between JJ and MT athletes (average of 11 vs. 10.7, respectively). The most common symptoms were headache, nausea, and dizziness in JJ athletes, and headache, nausea, drowsiness, and mental confusion in MT athletes.

Conclusion
These results suggest that traumatic brain concussions in MT and JJ occur through different mechanisms, with headache being a common post-concussion symptom in both fighting styles. While JJ athletes reported headaches along with potentially vestibular symptoms, MT athletes reported headaches and cognitive symptoms.

Keywords: Concussion; Headache; Combat sports; Traumatic Brain Concussion.

Headache Medicine

Primary headaches: analysis of comorbidities associated with tension-type headaches

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Categoria: Comorbidade das Cefaleias Primárias

Introduction
Headaches are any painful process of the nervous system that reaches a certain cephalic segment. According to their level of alteration, headaches can be classified into primary or secondary; these with disorders at the structural level, and those, at the level of neurotransmitters. Among the primary headaches, tension-type headaches are one of the most prevalent. Approximately 1.89 billion people worldwide are affected by this condition. It is also known that this fact is related to different comorbidities of people suffering from such headaches, directly impacting their quality of life. In this sense, being this study relevant, because it addresses a subject very present in society, its justification is given by the intention of better understanding how tension-type headaches can be related to the different comorbidities of patients affected by this condition.

Objective
To analyze the comorbidities associated with tension-type headaches.

Methods
This is an integrative review based on research in the MEDLINE, EMBASE, LILACS and SciELO databases, using the descriptors "Headache Disorders, Primary", "Tension-Type Headache" AND "Comorbidity" combined using the Boolean operator "AND". We selected studies available in their full versions, published in English, Portuguese or Spanish, between 2019 and 2023. After screening in stages, excluding the review type studies and those that were not directly related to the aforementioned descriptors, 10 articles were selected that addressed the comorbidities associated with tension-type headaches.

Results
Entering the sphere of primary headaches, there were relevant associations between comorbidities and tension-type headache. An analysis, carried out with patients affected by Generalized Anxiety Disorder or Major Depressive Disorder, found that these individuals were more affected by tension headaches, compared to people who did not have the comorbidities mentioned. A prospective study of 500 participants affected by epilepsy highlighted that 32.6% of them had headache at least once a month; of these, 33.1% had tension headache, confirming its relationship with the comorbidity of epilepsy. An analysis of patients affected by the comorbidity of Hashimoto's thyroiditis showed that changes in the levels of thyroid hormones, influencing neurotransmitters, were also related to tension headache. A cross-sectional study conducted with 570 individuals over 50 years of age showed that more than 70% of them, presenting comorbidities, such as hypertension or irritable bowel syndrome, had primary headaches, especially tension- type headaches. It was found that arterial hypertension, by the biomarker present in the smaller T allele of the NOS1 gene, has a high risk of being confluent to tension headache, due to indirect dysregulation of the action of neurotransmitters. A study conducted with female patients highlighted, for this same cause, a significant relationship between the comorbidity of irritable bowel syndrome and the development of tension headache. In addition, a cross-sectional approach conducted with 1340 Saudi students showed that individuals affected by depression were more likely to suffer from tension headaches and vice versa. Finally, a study pointed out that individuals affected by hypothyroidism, due to changes in neurotransmitter levels, were more likely to develop tension headaches.

Conclusion
It is legitimate to state, therefore, that, within the scope of primary headaches, the comorbidities associated with tension-type headaches are diverse, of considerable incidence and quite relevant in society. Therefore, considering the different ways in which such comorbidities can manifest themselves, more and more studies are needed to improve the treatments of comorbidities associated with this condition, based on the specificities of the syndromic conditions of each patient.

Keywords: Headache Disorders; Primary; Tension-Type Headache; Comorbidity.

Headache Medicine

Physical Activity and Inflammation Mediates the Job Stress-Migraine Relationship. A sequential mediation analysis in the ELSA-Brasil study

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Categoria: Fatores Psicológicos e Comportamentais no manejo das Cefaleias

Background
Primary headaches are common brain disorders associated with psychosocial job stress, lower leisure-time physical activity (LTPA) levels, and inflammatory mediators, while their interplay is poorly known. Objective: To conduct a sequential mediation analysis to test whether there would be indirect mediating effects of LTPA and high-sensitivity C-reactive protein (hs-CRP) in the associations of migraine and tension-type headache (TTH) with job stress.

Methods
In a cross-sectional study with the ELSA-Brasil baseline data, we measured the Demand, Control, and Support (DCSQ) subscales of job stress, self- reported LTPA, and high-sensitivity C-reactive protein (hs-CRP). Conditional process analyses with a sequential mediation approach computed the path coefficients with a 95 % confidence interval (CI) for the direct effects of headache disorders on DCSQ subscales and the CIs of the indirect effects of LTPA and hs- CRP levels. Sociodemographic, lifestyle, and comorbidities variables were included in the fully adjusted models.

Results
Of 15,105 participants, 7,466 (45.6% women) current workers with a mean age of 49.3 (95%CI: 49.3-49.6) years provided full data. The frequency of migraine and TTH was 13.1% (985/4,766) and 49.4% (3,692/4,766). Age- and sex-adjusted models showed that migraine was associated with higher job stress in all DCSQ subscales, TTH was associated with higher Control, and both headache disorders were associated with lower LTPA levels. LTPA levels were inversely associated with hs-CRP levels. Only the association of migraine with lower Control was mediated by LTPA levels [effect = -0.035(-0.055, -0.017)] and by the inverse association between LTPA and hs-CRP levels [effect = -0.0009(-0.002, -0.0001)]. Socioeconomic factors and comorbidities abrogated the sequential mediating indirect effect of LTPA and hs- CRP levels but not the direct effect of migraine on lower Support [β = -0.41(-0.66, -0.16)], the effect of migraine [β = -24.86(-39.90, -9.83)] and TTH [β = -14.58(-24.14, -5.02)] on lower LTPA levels, or the effect of LTPA on hs-CRP levels [β = -0.0004(-0.0007,-0.0002)].

Conclusion
In this study, the inverse association of LTPA with hs-CRP levels mediated the link between psychosocial job stress and migraine, while this effect was mostly determined by sociodemographic and comorbidities factors. These findings have potential clinical implications by helping to design workplace behavioral interventions through physical exercise and stress management to reduce migraine burden.

Keywords: Physical Activity; Migraine; Tension-type Headache; C-reactive Protein; Occupational Health; Occupational Stress.

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Painful Horner's Syndrome and Its Association with Internal Carotid Artery Dissection

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Categoria: Cefaleias Secundárias

Introduction
Claude Bernard-Horner Syndrome is a medical condition that affects the sympathetic autonomic nervous system. It manifests clinically with eyelid ptosis (drooping of the upper eyelid), miosis (constriction of the pupil) and anhidrosis (decreased sweating) on the hemiface. As part of the disease, Painful Horner Syndrome is characterized by the presence of intense neck pain and pain in the hemiface, with dissection of the internal carotid artery being one of the most common causes of this syndrome.

Objective
This study aims to deepen the understanding of Painful Horner's Syndrome and analyze the relationship between this syndrome and dissection of the internal carotid artery, highlighting the distinctive symptoms, such as eyelid ptosis, miosis, anhidrosis and intense pain in the neck and face, in order to improve clinical recognition and early diagnosis of this condition.

Methods
Considering it to be a specific topic, we included articles published from 1987 to 2021, using the descriptor "Painful Horner Syndrome" on the PubMed and Embase platforms; twelve articles were selected from 38 results, removing duplicates and inaccessible ones. The articles were subsequently compiled for the purpose of this review.

Results
In the analysis, we saw a strong association between Painful Horner's Syndrome and internal carotid artery dissection. Carotid artery dissection occurs when the layers of the artery wall separate due to some kind of trauma or even spontaneously. This can affect the sympathetic fibres that accompany the internal carotid artery, leading to Classic Horner's Syndrome (eyelid ptosis, miosis and anhidrosis) with the addition of intense pain in the neck and face, characterizing Painful Horner's Syndrome. Horner's syndrome associated with carotid dissection should be considered in the differential diagnosis of patients with headache and ipsilateral ocular symptoms (In one of the articles, a study of 90 cases of isolated Horner's Syndrome due to dissection of the internal carotid artery revealed that 91% of these cases were
painful). Most ischemic attacks occur within two weeks of carotid dissection. After this period, the risk of an ischemic attack decreases dramatically, which is why early diagnosis and treatment are important. The diagnosis of Painful Horner's Syndrome usually begins with the observation of characteristic symptoms, such as eyelid ptosis, miosis and anhidrosis in the hemiface with the presence of pain. The next step is to perform imaging tests such as ultrasound, magnetic resonance angiography (MRA) or computed tomography (CT) to evaluate the carotid artery and confirm the presence of a dissection. The diagnosis of carotid dissection requires cerebral angiography, which will reveal typical angiographic features such as a long, conical narrowing of the internal carotid artery. Treatment of carotid artery dissection varies depending on the severity of the symptoms and may include anticoagulant therapy, antiplatelet therapy and, in severe cases, surgical intervention. Immediate treatment is necessary to prevent the development of ischemic strokes

Conclusion
Painful Horner's Syndrome should raise suspicions about the possibility of an underlying carotid dissection. Early diagnosis and appropriate treatment are essential to prevent serious complications. More studies are needed to deepen our understanding of the relationship between Horner's Syndrome and carotid artery dissection.

Keywords: Horner's syndrome; Carotid dissection; Painful Headache.

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Headache Medicine

The use of Transcranial Direct-Current Stimulation in the Prevention of Chronic Migraine: an Integrative Review

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Categoria: Tratamento Preventivo da Enxaqueca

Introduction
Migraine is one of the most prevalent neurological disorders in the world. It becomes chronic when there are 15 or more heada-che days per month for over three months, with at least 8 of those days meeting the criteria for migraine. The cerebral cortex of individuals with chronic migraine (CM) is hyper-responsive to external stimuli, possibly due to altered functional connectivity with subcortical structures. There are non-invasive neuromodulation techniques, such as transcranial direct current stimulation (tDCS), which involves delivering a low-intensity current through the scalp via electrodes, potentially neutralizing the pathophysiological triggers of migraine. Preventive treatments for migraine are recommended in cases of high-frequency, disabling attacks, or poor response to acute treatments. The investigation of tDCS as an alternative treatment for CM is relevant because current medi-cationsmay not yield a satisfactory response or may have undesirable adverse effects. This study is justified by the scarcity of publications on the topic. Only four relevant articles were found in the databases searched between 2019 and 2023. Therefore, it is essential to conduct an integrative review of these articles to better understand the use of tDCS in the prevention of CM.**Objectives**
The objective of this study is to conduct a literature review on transcranial direct current stimulation (tDCS) therapy in the pre-vention of chronic migraine.
Methods
The present study is a bibliographic research in the format of an integrative review aimed at understanding the efficacy of tDCS in preventing chronic migraine. This research consists of a review conducted in the databases: PUBMED/MedLine, Embase, and Scielo in September 2023. The descriptors "Migraine," "Prevention," and "Transcranial direct current stimulation" were used, linked by the Boolean operator "AND." Inclusion criteria included full-text original writings with research objectives and a time frame from 2019 to 2023, as well as the ability to answer the following guiding question: Is transcranial direct current stimu-lation effective in preventing chronic migraine? Theses, dissertations, abstracts, reviews, articles that did not meet the research objective, and duplicate articles were excluded. After the search, 16 articles were found, all in the English language. The sample composition was based on 4 articles, considering the criteria presented.
Results
Among the total selected articles, one is from 2021, one from 2022, and two from 2023. Among these, two articles assessed CM with allodynia, while the other two did not take it into consideration. Those that addressed allodynia showed promising results for tDCS, with improvements in the levels of this symptom. However, for patients without allodynia, the response to treat-ment was more significant. Following tDCS, the frequency, duration, and use of symptomatic analgesics for migraine attacks decreased. It proved to be safe, effective, and plausible for prophylactic treatment in these individuals. Nevertheless, further studies evaluating this therapeutic approach are necessary.
Regarding the studies that assessed only CM, the efficacy of tDCS in the active groups was substantial. All active groups de-monstrated significant reductions in the frequency, duration, and intensity of migraine attacks.
Conclusions
The use of tDCS is of potential interest for the prevention of CM, but the quality of the evidence is very low. Nevertheless, the results presented are quite promising. Therefore, tDCS could be an intriguing therapeutic strategy to prevent the progression of CM into a refractory form.
Larger controlled trials are needed to confirm the efficacy demonstrated in the present study, assess the long-term effects of tDCS, and identify predictive factors that may influence the clinical response to treatment.

Keywords: Migraine;Prevention of Migraine;Transcranial stimulation;Chronic Migraine.

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Polycythemia in a Young Patient as a Probable Cause of Cerebral Venous Thrombosis

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Categoria: Cefaleias Secundárias

Introduction
The clinical and imaging diagnosis of CVT is difficult, due to its broad, non-specific and variable clinical presentation with over-lapping changes in signals and venous flow in conventionally used images. The condition can vary from a mild and insidious headache to dramatic conditions, such as those that evolve with cranial hypertension and focal deficits.A significant proportion of patients have a reasonable prognosis with no deficits or minimal sequelae when treated with appropriate drugs early. It is known that conditions in which there is an increase in blood viscosity, such as hematological hyperviscosity syndromes (Polycy-themia Vera (PV), Essential Thrombocythemia (ET) and Myelodysplasias), it can generate changes in CSF dynamics directly or indirectly. Two mechanisms involved in the predisposition: Decreased absorption of cerebrospinal fluid (CSF) and progressive increase in venular and capillary pressure, both of which can be influenced by blood viscosity contributing to increased blood stasis and the risk of venous thrombotic events and arterial. The 2016 WHO classification divides the diagnostic criteria for PV into major and minor, defined respectively by: elevated HB (>16.5 g/dl for men/>16.0 g/dl for women), HCT (>49 % in men / >48% in women) or elevated red blood cell mass (>25% above the predicted mean normal value); pleomorphic changes in the bone marrow, such as panmyelosis and hypercellularity; and presence of the JAK-2 mutation. The minor criterion for PV is a subnormal level of erythropoietin. At least two major criteria and the minor criterion are required for the diagnosis of PV. **Objectives**
Describe a case of headache secondary to CVT in a patient with polycythemia as a probable causal factor
Case report
Man, 22-year-old, no comorbidities, with a history of alcoholism, smoking and recreational use of cannabis and cocaine. Started in January 2022 moderate-intensity headache, frontal, oppressive and intermittent. In May 2022, he presented with a non-specific viral illness, after which the headache became intense, continuous and refractory to common analgesia. After 2 weeks, he presented a generalized tonic clonic seizure (CTCG) with a return to the previous baseline state, but maintained an intense headache. He arrived at the Emergency of the General Hospital of Fortaleza four days later, presenting right-sided hemiparesis, reduced verbal fluency and papilledema. A cranial tomography (CT) showed temporo-parietal intraparenchymal bleeding with vasogenic edema on the left and indirect signs of intracranial hypertension. The angiotomographic study showed extensive thrombosis of the transverse, superior and inferior sagittal sinuses, rectum, sigmoid sinuses and sigmoid anastomoses, in addition to the internal jugular vein on the left. Therapy with acetazolamide was started for intracranial hypertension and anticoagulation with coumarin. Following an etiological investigation, a significant increase in hemoglobin and hematocrit was found, with values of 19.9 g/dl and 56.1%. Myelogram without atypia, but with absolute hyperplasia of the granulocytic sector. The JAK-2 test was negative. The patient began follow-up with Hematology, and serial phlebotomies were recommended, evolving with a good response and reduction in hemoglobin and hematocrit levels, in addition to stable clinical status in subse-quent evaluation. The hypothesis of CVT of probable hematological etiology secondary to polycythemia with no clear etiology was put forward.
Conclusion
Faced with patients like the case reported, even with incompletely met criteria, it is extremely important to follow a rigorous diagnostic work-up, in order to exhaust the hypotheses. Directing him to treatment as early and effective as possible, since there are a series of clinical conditions, not just hematological, such as polycythemia detected in the patient in this case, which can evolve into serious complications.

Keywords: Thrombosis; Polycythemia; Headache.Keywords

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Headache Medicine

Yoga Practice as a Therapeutic Complement in Headache Management - Literature Review

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Introduction
Headaches are currently the sixth leading cause of disability worldwide, thus carrying a significant disease burden. Furthermore, this symptom is responsible for a large portion of healthcare consultations and is associated with a high socioeconomic impact, loss of work productivity, and reduced quality of life. In this scenario, the importance of a therapeutic approach is evident, one that is based on an integrated treatment strategy aimed at relieving pain, improving patient functionality, reducing the frequency of attacks, and preventing/limiting disease progression. One of these alternatives is the practice of Yoga, where the positive effects of this exercise have been noted in the non-pharmacological treatment of headache disorders. In Brazil, Yoga was incorporated into the Unified Health System (SUS) through Ordinance 719, enacted on April 7, 2011, which created the Health Academy Program. This was due to the benefits evidenced in various literature, considering Yoga as a useful tool for the health of the population, particularly in the care of individuals with headaches, heart diseases, stress, palliative care needs, among others.
Objective
This work aims to investigate the beneficial effects of Yoga practice on headache disorders.
Methods
This study employs a systematic literature review method, addressing the topic of the beneficial effects of Yoga practice on headache disorders, using the PubMed and Scielo databases. The evaluation parameters include English and Portuguese languages, with publication dates from 1991 to 2023.
Results
A comprehensive analysis of the data suggests that the practice of the well-being modality known as 'Yoga' may offer significant advantages in the treatment of headaches. The results indicate a statistically relevant decrease in the frequency, duration, and intensity of pain experienced by patients who participated in this practice, especially those dealing with tension- type headaches. However, it is important to note that no significant effects were observed in relation to patients suffering from migraines. It is essential to emphasize that, despite these promising findings, the results are based on a set of studies related to the references used. Additionally, the variability in the effectiveness of Yoga among different types of headaches highlights the complexity of treating this health condition.
Conclusion
Research suggests that regular Yoga practice can play a beneficial role in headache treatment, especially those associated with tension. There was a significant reduction in the frequency, duration, and intensity of pain in patients who adopted this therapeutic approach. However, statistically significant effects were not observed in patients with migraines. It is important to note that these results are based on a limited set of studies, limiting their general applicability. The variation in the effectiveness of Yoga among different types of headaches underscores the complexity of treating this condition, which, upon closer examination of the initial findings, suggests that Yoga practice may be beneficial for headache management, especially tension-related headaches.

Keywords: Headaches;Yoga; Quality of Life; Review Literature as Topic.

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Headache Medicine

General Aspects of Secondary Headaches: a brief Literature Review

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Categoria: Cefaleias Secundárias

Introduction
Secondary headaches are caused by underlying diseases that unfolds to this condition. Thus, the origin pathology is admittedly capable to cause a headache and this symptom needs to be developed during the course of the primary disease. After the effective treatment, there must be mark remission of the pain for until 3 months or spontaneous remission of the causing disorder. The epidemiology of the secondary headaches could vary depending on the clinical setting or the population sampled. Age-related variability may also be observed, with elderly patients having a higher likehood of secondary headaches compared to their younger counterparts. This classification of headache can be attributed to traumas to the head and/or neck, exposure or oversure of a substance, related to arterial ischemic event and many other etiologies. There are some alert "flags" to secondary headaches, and they include systemic symptoms, like fever, neoplasm of the brain, neurological deficits, papilloedema, older age after 50 years at headache presentation and change of pattern of previous headache. Objetives
To comprehend the concept of secondary headaches and briefly discern about the underlying diseases that lead to this condition.
Methods
The current review is a product of a bibliographic research on the databases MEDLINE and EMBASE, through the application of descriptors "headache", "secondary headache", "headache disorders, secondary", "post-traumatic headache" and their combinations. There has been included scientific publications in Spanish, Portuguese and English languages, between 2018 and 2023, with a relevant approach to the study objective. Five studies were included in this review.
Results
From all causes, Post Traumatic Headaches (PTH) are one of the most common secondary headache disorders. Factors associated with PTH include the number of post-traumatic symptoms, young age and the female sex. It is thought that PTH is likely due to traumatic brain injury, culminating in the structural remodeling of various regions involved in pain modulation. The secondary headache caused by exposure or overuse of substance led to a challenge for the clinicians: whether this entity should remain distinct, as opposed to a complication of those with pre-existing migraine, since those who have this condition are known to be triggered by certain substances. Headaches related to arterial ischemia may occur in the setting of transient ischemic attack or cerebrovascular infarction. Some of the risk factors identified include previous history of headache disorders and being female.
Conclusion
It is a serious syndrome that without the diagnosis, could damage the patient's lifestyle and quality of life. The causes of secondary headache syndromes can vary significantly, from trauma to vascular problems. Overall, the management of some underlying diseases is complex and requires a multifaceted approach. Red flags are a useful checklist of features to look out for regarding secondary headache syndromes. The absence of these red flags may support the notion that no further workup is necessary. A headache that has developed or significantly worsened in temporal relation to the origin condition, or led to its discovery is one of the biggest diagnosis criteria for secondary headache.

Keywords: Headache; Secondary headache; Underlying disease.

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Migraine in women´s lives: a Literature Review

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Introduction
Migraine is a complex neurological, chronic disorder characterized by a moderate or severe headache lateralized to one side of the head and typically present along with nausea, vomiting, photophobia and precarious auditory behavior, which affect patients' quality of life and functioning. Factors like age, the female sex, hormonal disorders, oral contraceptives, menstrual cycle, pregnancy and intense stress can initiate migraine episodes. It is well-established that inflammation may play an important role for the disease process. Furthermore, there is a potential association and pathophysiological mechanisms between migraine and anxiety. This causes significant absenteeism at school or work, challenges in remaining engaged as productive members of society. Many women experience worsening migraine symptoms during the postpartum and perimenopausal period. That has negative effects on health and is costly for patients and society, despite the often underdiagnosis and the inadequately treatment in the primary care setting. It is known that sexual and gender minorities (SGM) experience a disproportionate migraine burden compared to cisgender heterosexual individuals.

Objetives
To review the most important aspects of migraine in a woman´s life, as well as the management for this condition. Methods
The current review is a product of a bibliographic research on the databases MEDLINE, EMBASE and LILACS, through the application of descriptors "headache", "migraine", "hormone", "female", "female hormone" and their combinations. There has been included original articles in Spanish, Portuguese and English languages, between 2014 e 2023, with a relevant approach to the study objective. Five studies were included in this review.

Results
It is referred that an expressive percentage of women has migraine attacks before, during or after their period, which clearly highlights the association between migraine and female hormones. Since there is an inflammatory association with migraines, the risk of cardiovascular and cerebrovascular events is increased, even though the mechanisms are incompletely understood and likely multifactorial. Lastly, many women consider the primary care provider as the migraine management, despite the several knowledge gaps relating to the patients' treatment and outcomes.

Conclusion
Migraines are a type of primary headache with high prevalence and socioeconomic/personal impact. It's the third cause of incapability in men and women, especially, resulting in a bad lifestyle. Due to several factors, women have more intense symptoms and worst consequences, such as severe anxiety or high risk of cardiovascular events. Therefore, the primary care sectors must qualify headache-specific profissionals to improve provider performance and the patient follow-ups.

Keywords: Migraine; Migraine in women; Females hormones.

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Clinical history of headache, cross-referencing etiological diagnosis and the need for emergency referral, in hospitals in Rio Grande do Sul

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Categoria: Epidemiologia, Desfechos e Impacto das Cefaleias

Introduction
The importance of headache disorders, particularly of the primary forms, is established by their distribution worldwide, their duration (the majority being life-long conditions) and their imposition of both disability and life-style restrictions among large numbers of people and represent prevalent medical issues and rank as a primary cause for neurology consultations. Never-theless, a significant portion of individuals affected by these conditions refrains from seeking medical assistance. As a result, the symptoms progress and may eventually necessitate emergency referral. This inherent unpredictability significantly impinges upon one's quality of life and may precipitate substantial disability and anxiety, even in the absence of active migraine attacks. **Objectives**
The aim of this study is to assess the types of etiological diagnosis in patients with a clinical history of headache, based on whether or not emergency referral was required, and to present the epidemiological data regarding the age and gender of the analyzed patients.
Methods
This is a cross-sectional study involving 1,166 patients from the "Advanced Center for Neurology and Neurosurgery" (CEAN-NE), located in 14 hospitals in the states of Rio Grande do Sul and São Paulo. The statistical analysis conducted included an examination of syndromic diagnostic types in patients and whether or not emergency referrals were made during the period from April 2019 to October 2022. All patients provided informed consent for this research, and data collection adhered to the general data protection law.
Results
Describing the epidemiology of the total number of patients (1,166), it can be observed that 498 (42.7%) are female, and 668 (57.3%) are male, with a median age of 59, an average of 55, and a mode of 67. When dividing by age groups, the distribution is as follows: age 0-16: 95 (8.1%) patients, 16-31: 116 (9.9%) patients, 31-47: 178 (15.2%) patients, 47-62: 288 (24.6%) patients, 62-78: 321 (27.5%) patients, 78- 93: 157 (13.4%) patients, 93-100: 11 (0.9%) patients. Out of the total patients, 283 (24.3%) were referred for emergency care, while 883 (75.7%) were not. Regarding diagnoses, 842 (72.2%) had a metabolic cause as the etiological diagnosis, of which 748 (88.8%) did not require emergency referral, while 94 (11.2%) did. 274 (23.4%) had a vascular cause, with 123 (44.8%) being referred for emergency care and 151 (55.2%) for non-emergency care. Additionally, 50 (4.4%) had a traumatic cause, with 12 (24%) requiring emer-gency referral, while 38 (76%) did not. This study revealed that the majority of individuals affected by headaches in the sample were male. Patients with older age tend to experience more headache symptoms, and vascular causes are notably more severe, often requiring more emergency referrals compared to traumatic and metabolic causes.
Conclusion
In the Emergency Department (ED), as elsewhere, migraine is often under-diagnosed-and under-treated when it is diagnosed. The result is likely to be failure of treatment. Particular attention to diagnosis is needed in ED patients with acute headache, since there is a higher probability of secondary headache due to underlying pathologies. Strategies for managing migraine triggers include keeping a headache diary, focusing on healthy lifestyle choices, and using prevention.Whilst particular attention is needed in ED patients with acute headache, since there is a higher probability of secondary and serious headache, the role of the ED physician does not consist exclusively of ruling out serious causes. Future research and interventions to reduce migraine–related ED use could target high-risk patients such as those with previous ED visits for any indication and neurology referrals.

Keywords: Emergency Referral; Etiological Diagnosis; Headache.

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Profile of Hospitalizations for Migraines in Brazilian Territory: a Cross-Sectional Study of the Last 5 Years

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Categoria: Epidemiologia, Desfechos E Impacto Das Cefaleias

Introduction
Migraine is one of the main causes of primary headache, and is frequently reported by patients in medical consultations, whether on an outpatient care or in emergency service. Epidemiologically, it has a higher prevalence in females, being one of the major causes of disability in the world. The most common types are migraine with aura, and migraine without aura, which represents around 80% of cases. The migraine with aura is seen when there are reversible symptoms in vision, sensitivity, speech, language and motricity, and can have positive and negative characteristics, such as the visualization of flickering lights, tingling, visual loss and falling asleep. Regarding the clinical condition, it has a pulsatile, unilateral alternating, moderate or severe intensity and exacerbation due to routine physical activity, being associated with nausea and/or photophobia and phonophobia and possible aura, with duration from 4 to 72 hours.

Objective
This study analyzes hospitalizations resulting from migraines and other headache syndromes in the last 5 years of the Brazilian Unified Health System (SUS).

Method
A cross-sectional study was carried out using data available in the Hospital Information System from SUS (SIH/SUS) inserted in DATASUS. All hospital admissions resulting from migraines and other headache syndromes between the period from June 2018 to June 2023 were included in the study.

Results
In the time interval studied, there were 51,428 hospitalizations all over Brazil, with prevalence in the northeast, southeast and south regions, representing, respectively, 31%, 29% and 27% of hospitalizations. The involved population were around 40% in the brown people and 38% in the white people, and 14% of the total having no information regarding color/race. It was identified that 66% of those affected were in the age group between 20 and 59 years old, with 18% being between 30 and 39 years old and there was a negligible amount in the first 5 years of life. There was a prevalence of around 65% in females, in agreement with data described in the literature, which may be correlated with women's hormonal factors. Approximately 95% of the hospitalizations were urgent cares, which could be due to functional incapacity caused by this headache, with a total expense of around 28 million reais in this period.

Conclusion
Migraine is a disorder that reduces health-related quality of life, reducing the general well-being of individuals, being females in young adulthood the population more acomitted in the national territory. Furthermore, due to treatment, this condition generates high medical costs which overloads the public health system, highlighting the need for the adoption of pharmacological and non- pharmacological measures, including the prevention and abortion of crises and the identification of possible triggers of crises. The choice of medicine must take into account an individualized treatment plan, identifying comorbidities and other coexisting conditions, in addition to the frequency, intensity and degree of disability reported by the patient, avoiding its recurrence.

Keywords: Migraine; Hospitalizations; Brazil.

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Relationship between the use of oral contraceptivas and migraines in women: limiting factor or not?

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Categoria: Cefaleia e Gênero

Introduction
Migraine is a type of chronic headache, characterized by a throbbing pain pattern and unilateral manifestation in association with other symptoms, such as nausea, photophobia and phonophobia. It is commonly more present in women, demonstrating a possible association between female hormones and this type of headache.

Objective
Describe the relation between migraines and the use of combined oral hormonal contraceptives, analyzing and discussing the risks of this association, especially in women presenting migraines with aura.

Methods
A search was carried out for the descriptors "migraine" AND "oral contraceptives", in September 2023, in the PubMed and Scopus databases. Observational cohort studies, systematic reviews and newspaper articles were selected. The selection of articles was carried out independently by 1 author. 5 articles were selected in the end, by title and abstract lecture.

Results
In these studies, the relationship between the prevalence of migraines in women and the fertile period is evident, especially due to menstrual cycle hormones, such as estrogen. The most exposed pathophysiology is associated with the rate of decline in estrogen over the 2 days following the luteal peak. Additionally, the issue of the risk associated with the use of combined oral contraceptives in women with migraines is discussed. Most of the studies analyzed reinforce the need, to a certain extent, to limit this form of contraceptive treatment in the female contingent that has manifestations of migraine with aura. However, when this parameter is analyzed in women who have migraines without aura, there is a drop in the results found, which leads to a discussion about the effective probability of this limitation. The most relatable evidenced effect is the intensification of pain during the menstrual period in patients using combined hormonal contraceptives. Another risk brought into question is the possibility of stroke in these women, due to the thrombogenic potential of these medications. The presence of "exogenous hormone-induced headache" is practically consensual. However, disagreements regarding the risk of stroke are constants, as women with migraines without aura have a negligible chance of suffering this condition. Consensus statement by the European Headache Federation (EHF) and the European Society of Contraception and Reproductive Health (ESC) in 2019, for example, calculated the absolute risk of stroke in young women with migraines but without aura as 4 /100,000, and in women manifesting migraine with aura 5.9/100,000. In view of the results presented, it is also worth noting that the amount of hormones present in oral contraceptives reduced exponentially, which, consequently, led to a drop in the risk associated with their use (since this hormonal load was considered as the main responsible for these side effects), especially in women whose migraine manifests without aura.

Conclusion
Therefore, it is evident that, although there are risks associated with the use of oral combined hormonal contraceptives in women with migraines, such as the intensification of pain and the possibility of stroke, they have been shown to be reduced over time, although the attention and limitation given to women who experience migraine with aura should be maintained, as the risk in this group is higher. As a result, contraceptive treatment should still be considered an option to some women, given the individual conditions of each patient, without the need to completely discard its use.

Keywords: Migraine; Contraceptives; Women; Hormones.

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Acute Confusional Migraine associated with probable genetic vascular leukoencephalopathy presenting as a CADASIL phenotype: a case report

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Categoria: Cefaleias Secundárias

Introduction
Acute confusional migraine is a rare cause of transient impairment of consciousness, characterized by defects in sensorium, impaired awareness, disattention, agitation, and amnesia. Although often reported in childhood, confusional migraine has rarely been associated with cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL). Diagnosis is made by excluding other more common and threatening causes of confusional states (e.g., epilepsy, stroke, neoplasm, intoxication, and encephalitis).

Objective
To present a case of acute confusional migraine in a patient with vascular leukoencephalopathy of probable genetic origin, evaluated in the neurology service of an academic hospital linked to the Universidade de Pernambuco.

Case report
A 43-year-old man presented with a history of probable migraine without aura since childhood, occurring with a frequency of four attacks per month. He had experienced confusion during more severe headache episodes for the past two years. During these episodes, he became disoriented, agitated, aggressive, and exhibited some inappropriate social behavior, which resolve with pain relief. The patient did not remember these episodes. One year before admission, following a mild Sars-CoV-2 infection, his wife observed progressive forgetfulness, affecting various aspects of his life, such as forgetting relatives, friends, objects, and work schedule, accompanied by psychomotor slowness, which significantly impacted his daily functioning. They sought psychiatry evaluation, leading to a diagnosis of depression and he was treated with sertraline.
Neurological examination revealed apathy, fluent and disoriented speech, a score of 12/30 points in the mini- mental status examination, global bradykinesia and mild rigidity with cogwheel phenomenon, and gegenhalten in his wrists, mild dysmetria, and a wide-based parkinsonian gait. Brain magnetic resonance imaging showed bilateral hyperintensities on T2-weighted/FLAIR sequences in the periventricular white matter, corona radiata, temporal POLES, and external capsule, with preservation of the subcortical and U- shaped fibers, without evidence of diffusion restriction or contrast enhancement. There were also focal hyperintensities in the external capsules and thalamus, consistent with prior ischemic insults, although brain and neck vascular studies and echocardiogram were unremarkable. Cerebrospinal fluid analysis revealed an elevated protein level (87mg/dL) and normal cell count. The electroencephalogram demonstrated diffuse slowing of basal activity, without epileptic activity. Inflammatory, autoimmunity, and infectious investigations were negative. The set of findings were consistent with vascular leukoencephalopathy of probable genetic origin (CADASIL), presentig as episodes of confusional migraine and evolving into subcortical dementia signs. Genetic testing or skin biopsy were unavailable. The patient was prescribed aspirin and clopidogrel, along with low doses of quetiapine, and amitriptyline, in addition to language and physical rehabilitation. He responded well to treatment and was referred to the cognition and neurovascular outpatient clinic.

Conclusion
We present an unusual case of an adult man with acute confusional migraine and vascular leukoencephalopathy exhibiting a CADASIL phenotype.

Keywords: Migraine without Aura; Acute Confusional Migraine; Subcortical Leukoencephalopathy; CADASIL.

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Psychiatric Comorbidities in Migraine: Pathophysiology and Clinical Management

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Categoria: Fatores Psicológicos e Comportamentais no Manejo das Cefaleias

Introduction
Migraine is a prevalent neurological disorder that is highly associated with psychiatric disturbances, such as depression, anxiety, bipolar affective disorders, post-traumatic stress disorders and sleep dysfunctions. For example, migraineurs are up to 4 times more likely to suffer from a major depressive disorder and up to 3 times more likely to be tackled by a bipolar spectrum disorder than healthy individuals. Psychiatric comorbidities are known to be associated with a negative migraine prognostic, since these disorders are related to stress responses that induce the process of chronification and increase the level of severity, causing worse outcomes and a major disability for the individual and, as a consequence, reducing quality of life.

Objectives
This summary aims to correlate the co-occurence of psychiatric disorders in individuals with episodic and chronic migraine, approaching the common pathophysiological mechanisms of both diseases to improve the clinical management of this type of patients.

Methods
A narrative review of literature was performed based on research in PubMed database using the boolean operator "and" and the describers "migraine", "psychiatric" and "comorbidities". Filters were used to select only review articles and systematic reviews with full-text availability. 131 articles were obtained in the PubMed database, of which 10 were selected and 6 were used.

Results
Most of the patients presented a co-occurrence of migraine and psychiatric disorders, instead of only migraine, demonstrating a bidirectional relationship. Furthermore, compared to migraineurs without psychiatric comorbidities, patients with those types of disorders reported a reduction in the response to acute pharmacological treatment. Sleep dysfunctions, stress, depressive and anxiety disorders alter the transmission of nociceptive stimulus from thalamus to the brain cortex by the modulation of neurotransmitters, causing exacerbated tonic cerebral discharges that acts in the chronification of episodic migraine. More specifically, acute stress induces the dysregulation of allostatic responses, provoking functional and structural brain alterations, leading to chronic migraine. Psychiatric disorders and migraine share common pathophysiological mechanisms, such as serotonergic dysfunction – since decreased plasma 5-HT predisposes increased cortical spreading depression, raising the sensibility of trigeminovascular paths that leads to headache pain – and HPA axis hyperactivity, with larger activation of the hippocampus, increasing emotional response to pain presented in migraine attacks and exacerbating anxious and depressive symptoms. The efficacy of tricyclic antidepressants (TCAs) in migraine treatment also indicate an association with depression. However, while high doses are needed to treat depressive symptoms, migraine prevention with TCAs is effective with low dosages, and induces fewer side effects. The new generation of antidepressants, the Selective Serotonin Reuptake Inhibitors, did not present the same effect on preventing migraine, being no better than placebo. Therefore, the results reported that different treatments for migraine and psychiatric disorders were a more efficacious option than monotherapy.

Conclusions
Psychiatric comorbidities have been demonstrated to be common in migraineurs – specially the chronic type – since these disorders modulate physiological pathways associated with the chronification of episodic migraine. Distinct pathophysiological mechanisms – for example, HPA axis hyperactivity and serotonergic dysfunction – are related to migraine, depression, anxiety and other psychiatric disorders, possibly explaining the high prevalence of co-occurrence. The pharmacological management of these disturbances is still limited and studies indicate that monotherapy is not the most proper approach. Therefore, more research needs to be conducted to enable suitable and improved treatment for both conditions.

Keywords: Clinical Management; Migraine; Pathophysiology; Psychiatric Comorbidities.

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Headache Phenotypes in Idiopathic Intracranial Hypertension: Analysis of Tertiary Hospital in Fortaleza/CE

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Categoria: Cefaleias Secundárias

Introduction
Headaches in Idiopathic Intracranial Hypertension (IIH) are prevalent in approximately 90% of the patients. It is the main symptom of the disease. This constant pain significantly is determinant to the patients quality of life. The International Classification of Headache Disorders version 3 beta (ICHD-3b) diagnostic criteria for headache attributed to IIH do not specify a particular headache phenotype but require at least two of the following characteristics in a patient with a diagnosis of IIH and a documented lumbar puncture opening pressure of ≥ 250 mm of water: (1) the headache developed in temporal relation to IIH, or led to its discovery, (2) headache is relieved by reducing intracranial hypertension, and (3) headache is aggravated in temporal relation to an increase in intracranial pressure.
The headache phenotype can mimic primary headaches, such as migrainous-type headache or tension-type headache, but the history is accompanied by pattern or frequency change or suggesting a secondary headache. It also can be a new headache onset, with the description of global headache, chronic and daily worsening in the morning and exacerbation by coughing or with valsalva-like maneuver. In some cases, it may overlap with previous primary headaches.

Objective
This work aims to present the different phenotypes of headache presentation in patients with IIH in a tertiary hospital in Fortaleza, Ceará.

Methodology
This is a cross-sectional study in which data were obtained by medical interview and were made qualitative and quantitative analysis of medical records. It utilized Headache Impact Test-6 (HIT 6) and headache diary to assess headache intensity and frequency. For diagnosis of headaches phenotypes were utilized International Classification of Headache Disorders (ICHD-3). Approved by the ethics committee, among the 22 patients followed in the specialized outpatient clinic at a tertiary hospital, met the diagnostic criteria for IIH according to the 2013 Friedmann criteria. Among these, we were able to interview 17 patients. Our sample consisted entirely of female patients with a mean age of 38 years, ranging from 27 to 55 years. The mean follow-up time was 4 years. The mean opening pressure measurement at diagnosis was 37.18 cm H2O.

Results
From our sample, the initial clinical picture occurred in 70% (N=12) as migraine with signs of chronification, 18% primary exercise-like headache (N=3), and 12% (N=2) with other phenotypes. As for the previous headache phenotype, 70% (N=12) presented some form of headache, of which 83% were episodic migraine. Around 30% (N=5) did not meet criteria for primary headache. Regarding the current predominant phenotype after follow-up: 30% (N=5) were of episodic migraine, while 23% (N=4) had chronic migraine, 17% (N=3) primary exercise-like headache, and 30% (N=5) had other headaches. Concerning the frequency of headaches, 70% (N=12) experience less than fifteen headache days per month, and 30% (n=5) still have fifteen or more headache days per month. As evidenced by the HIT-6 questionnaire, 52.94% (n=9) reported severe impact, 11.76% (n=2) moderate impact, and 35.29% (n=6) mild impact.

Conclusion
A enxaqueca com sinais de cronificação foi o fenótipo mais observado na apresentação inicial. Identificamos também que a maioria da amostra tinha dores de cabeça anteriores e em 83% delas era uma enxaqueca episódica. Reforçando a importância da realização de exame oftalmológico e pesquisa de outros sintomas de HII em pacientes com enxaqueca prévia que apresentam sinais de cronicidade, principalmente do sexo feminino e que relatam ganho de peso. Embora a apresentação diária não tenha sido a frequência mais comumente relatada, o impacto severo da dor pode contribuir para a incapacidade. Além disso, a cefaleia sobreposta mais frequente foi a enxaqueca episódica, o que pode estar relacionado à dificuldade de controle da dor nesses pacientes devido aos diversos fatores fisiopatológicos da dor.

Keywords: Hipertensão Intracraniana Idiopática; Enxaqueca Episódica; Cefaleia Red Flag; Cefaleia Crônica.