ETHIOPIAN INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 11, November-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

Rakhmatullaev F.A.,Kamalova N.L.,

Karimov B.B.,

Department of Neurology, ASMI.

MEMORY AND ATTENTION DISORDERS IN PATIENTS WITH MIGRAINE

Introduction. The problem of migraine is widely discussed in the scientific literature. Currently, the criteria for diagnosis are clearly formulated, and there are numerous international recommendations for the relief of migraine attacks and its preventive treatment. It is well known that in episodic migraine (EM) and to an even greater extent chronic migraine (ChM), the ability to work of patients is seriously impaired [1]. Thus, in the two largest epidemiological studies at the moment, CaMEO and AMPP, the average level of disability on the MIDAS scale was extremely. It was high and amounted to 38-45 points among women with ChM and 6-7 points with EM [2]. At the same time, the proportion of patients with severe disability in EM is at the level of 32-38%, and in ChM reaches 79-82%. At the same time, traditionally, this disability is associated precisely with the presence of attacks of intense headache with EM and very frequent or constant pain with ChM.

Keywords: migraine, diagnosis, migraine attacks, prevention, treatment, episodic migraine, chronic migraine, memory impairment.

Materials and methods: The study involved 64 patients with ChM and 42 patients with rare EM (less than 4 days of headache in 1 month) aged 18-59 years. All patients were included in the study at the ASMI Clinic. The diagnosis of ChM and EM was established in accordance with the International Classification of Headache of the 3rd revision (ICGB-3-beta). Patients with ChM were examined during the period of absence or the least possible pain to minimize the effect of pain on cognitive tests (pain intensity during the examination was 0-4 points according to On a 10-point visual analog scale, the average pain intensity was 2.1 points). Patients who came to a neurologist's consultation for the first time during a severe headache could be included during subsequent consultations, provided there was minimal or no headache. Patients with EM were examined no earlier than 2 days after the end of a migraine attack, since during a migraine attack and in the postdromal period, the severity of CI is maximum [7]. The criteria for non-inclusion were age under 18 and over 59 years of age, the presence of mental illness and a severe depressive episode, the use of benzodiazepine-type drugs, antidepressants and topiramate that can affect cognitive functions (taking these drugs should be discontinued at least 2 weeks before inclusion in the study).

All patients with ChM and EM underwent a clinical neurological examination to exclude the secondary nature of the headache. The level of anxiety and depression was assessed using the hospital Anxiety and Depression Scale (HADS).

Cognitive functions were assessed using the Montreal Scale (MoCA), a test for replacing numbers with symbols (DSST) and Ray's Auditory-speech Memorization Test (RAVLT).

The DSST test allows you to evaluate the speed of information processing, concentration and attention maintenance, executive function and working memory. The legend contains 9 digit—symbol pairs. The following is the sequence numbers, under each of which the subject must enter the corresponding symbol within 90 seconds. The total number of correct pairs is estimated. The RAVLT test is widely used to assess verbal memory and learning ability. The participant is provided with a list of 15 unrelated words. The subject must repeat the words that he managed to remember and make five

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 11, November-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

attempts to reproduce the presented list. 2 indicators are evaluated: total memorization (Total Learning, the sum of all memorized words in the first five attempts) and learning ability (Learning Rate, the difference between the fifth and first attempts).

Results. The ChM and EM groups were comparable in demographic and basic clinical characteristics. The average headache frequency was 3.3 days in 1 month in the EM group and 20.7 days in 1 month in the ChM group.

Patients with ChM showed a higher level of anxiety and depression, however, in absolute values it corresponded to subclinical values on the HADS scale, and the level of anxiety in patients with EM and the level of depression in both groups — the absence of disorders.

An objective examination of cognitive functions in the ChM group revealed a decrease in the results of the DSST test. At the same time, 36% of patients with XhM and 17% of patients with rare EM showed extremely low results on the DSST test (less than 40 correct digit—symbol pairs; p=0.015). In the ChM group, a lower result of general memorization of RAVLT was also revealed. At the same time, when compared with published standards (47.6 words in the age group of 50-59 years, 46 words in the age group of 30-39 years and 54.9 words in the age group of 20-29 years) a decrease in this indicator was noted in in both groups (p=0.0001 for the EM group and p=0.0001 for the ChM group in comparison with the indicator for the age of 30-39 years) [12]. There were no differences in the RAVLT learning rate between EM and ChM. According to the MoCA scale, patients with ChM showed a lower result compared to patients with EM. At the same time, the median of this indicator was 27 points in the group HMM and 28 points in the EM group, which corresponds to normal values. However, in 38% of patients with ChM, the result is on the MoCA scale, it did not reach a value of 26 points (lower the limit of the norm) even during a period of minimal and absent pain. A low result on the MoCA scale was obtained only in 14% of patients with EM (p=0.014).

Correlation analysis showed the presence of a significant negative correlation of headache frequency with the DSST test (r= -0.29) and MoHS (r= -0.48) at $p<0.05$ for both indicators. The level of anxiety and depression did not correlate with any of the indicators of cognitive function tests.

Discussion. CI are the most poorly understood symptoms of migraine. It is only in recent years that descriptions of the various cognitive problems that patients face during an attack have begun to appear. The presence of migraines limits the ability of patients to perform complex mental work, makes it difficult to make decisions and perform non-trivial or complex work tasks, and CI during a migraine attack causes particular difficulties for patients. Patients also make more mistakes in the process of reading, writing, communicating and performing arithmetic operations, and the speed of thinking is significantly reduced. At the same time, the severity of CI is maximal during pain and in the postdromal phase of a migraine attack.

In recent years, there have been studies showing that as the frequency of migraine attacks increases, the prevalence and severity of CI increases. In our previous work, it was shown for the first time that in ChM, the prevalence of CI is extremely high even during the period of minimal or absent pain possible for the patient. This means that with ChM, the symptoms that appear during an attack persist after its end. It is possible that CI in ChM is not only a reflection of the emotional disorders that often accompany ChM, but They are also caused by the processes underlying chronic pain, including central sensitization. So, in our study, the level of anxiety and depression did not correlate with the indicators of cognitive tests. The persistence of CI as a permanent symptom in ChM may be one of the causes of

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 11, November-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

severe disability in this group of patients, in addition to constant pain, insufficient response to analgesics and widespread depression.

Every year, 3.1% of patients with EM have an increased headache frequency and develop ChM. One of the causes of chronic migraines is inadequate pain relief. Thus, it was shown that in patients with the maximum effectiveness of analgesia of seizures, the probability of disease progression was only 1.9%. At the same time, with moderate effectiveness of analgesia for headache attacks, this indicator is 2.7%, and in the case of inadequate analgesia, the probability of chronization increases to 6.8%. Thus, in the case of ineffective analgesia of migraine attacks, the probability of the further increase in seizures and the transition of headache to a chronic form increases by more than 2 times. This means that the prevalence of CI will also increase. As shown in our work, at the ChM stage, pronounced CI, according to the DSST and MoCA tests, are detected in 36-38% of patients.

5HT1 receptor agonists — triptans — are currently the most effective painkillers. By acting on 5HT1 receptors, sumatriptan blocks the release of painful neuropeptides, selectively narrows dilated ones during an attack vessels of the dura mater. In two studies conducted so far, it has been shown that the use of sumatriptan, leading to a rapid cessation of pain, significantly improves cognitive functions (reaction time, working memory, concentration and processing of visual and spatial information) in a short time after administration.

The first drug from the triptan group, the effectiveness and safety of which have been confirmed in numerous clinical studies, was sumatriptan. One of the most affordable and effective forms of sumatriptan in Uzbekistan is the drug sumamigren. Efficacy and tolerability of sumamigren at a dose of 50 mg. A significant reduction in headache has also been demonstrated in the treatment of menstrual migraine attacks and vestibular migraine paroxysms.

In our work, it was shown that patients with ChM have pronounced CI during the period of minimal and even absent pain, and their severity correlates with the frequency of headache. Other authors also confirmed the presence of memory disorders, as well as a decrease in MoCA results compared with healthy subjects with EM in the inter-onset period and an increase in CI as the headache becomes chronic [9, 10]. In addition, as in our work, there was no correlation with the severity of emotional disorders. Apparently, dysfunctional neuroplastic and neurochemical mechanisms underlying the chronization of pain are one of the reasons for the persistence and chronization of CI as the headache increases. This hypothesis confirms the importance of early and rapid pain relief of migraine attacks, as well as the great importance of preventive therapy at the stage of EM with frequent attacks. Such approaches will reduce the likelihood of chronic migraine and an increase in the prevalence and severity of CI in these patients.

Conclusion. Patients with EM and ChM have objective CI. The prevalence and severity of CI increase as the frequency of headache increases. Adequate and complete analgesia of seizures and timely preventive treatment are of great importance.

Literature:

1. Buse DC, Manack A, Serrano D, Turkel C, Lipton R. Sociodemographic and comorbidity profiles of chronic migraine and episodic migraine sufferers. J Neurol Neurosurg Psychiatry. 2020;81(4):428-432.

eISSN: 2349-5715 pISSN: 2349-5707

Volume: 11, Issue 11, November-2024 SJIF 2019: 4.702 2020: 4.737 2021: 5.071 2022: 4.919 2023: 6.980 2024: 7,662

2. Lipton RB, Manack Adams A, Buse DC, Fanning KM, Reed ML. A comparison of the Chronic Migraine Epidemiology and Outcomes (CaMEO) Study and American Migraine Prevalence and Prevention (AMPP) Study: demographics and headache-related disability. Headache. 2022;56(8):1280-1289.

3. Gil-Gouveia R, Oliveira AG, Martins IP. A subjective cognitive impairment scale for migraine attacks. The MIG-SCOG: Development and validation. Cephalalgia. 2021;31:984-991. https://doi.org/10.1177/0333102411408359

4. Meyer JS, Thornby J, Crawford K, Rauch G. Reversible cognitive decline accompanies migraine and cluster headaches. Headache. 2020;40:638-646. https://doi.org/10.1046/j.1526-4610.2000.040008638.x

5. Quintela E, Castillo J, Munoz P, Pascual J. Premonitory and resolution symptoms in migraine: A prospective study in 100 unselected patients. Cephalalgia. 2016;26:1051-1060. https://doi.org/10.1111/j.1468-2982.2006.01157.x

6. Gil-Gouveia R, Oliveira AG, Martins IP. Cognitive dysfunction during migraine attacks: a study on migraine without aura. Cephalalgia. 2015;35(8):662-674. https://doi.org/10.1177/0333102414553823

7. Gil-Gouveia R, Martins I. Clinical description of attack-related cognitive symptoms in migraine: A systematic review. Cephalalgia. 2018;38(7):1335-1350. https://doi.org/10.1177/0333102417728250

8. Caro G, Caro JJ, O'Brien JA, Anton S, Jackson J. Migraine therapy: Development and testing of a patient preference questionnaire. Headache. 1998;38:602-607. https://doi.org/10.1046/j.1526-4610.1998.3808602.x

9. Huang L, Juan Dong H, Wang X, Wang Y, Xiao Zh. Duration and frequency of migraines affect cognitive function: evidence from neuropsychological tests and event-related potentials. J Headache Pain. 2017;18(1):54. https://doi.org/10.1186/s10194-017-0758-6

10. Costa A, Sansalone A, Squillace A, Vescio G, Iannacchero R. Self-referred cognitive impairment in migraine patients. J Headache Pain. 2015;16(suppl 1):149. https://doi.org/10.1186/1129-2377-16-s1-a149

11. Kamalova N.L. BOTULINUM THERAPY IN THE TREATMENT OF CHRONIC MIGRAINE. http://www.eijmr.org/index.php/eijmr/article/view/499