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PHARMACOLOGICAL APPROACHES TO THE TREATMENT OF MIGRAINE: THE ROLE OF RIZATRIPTAN IN THE RELIEF OF ATTACKS (LITERATURE REVIEW)

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Migraine is one of the most prevalent primary headache disorders and is considered a chronic neurological disease that significantly affects patients' quality of life, social functioning, and work capacity. According to epidemiological studies, migraine is diagnosed in approximately one in seven individuals worldwide and occurs considerably more frequently in women. Despite the high prevalence of this condition, the issue of timely diagnosis and effective treatment remains highly relevant, as a substantial proportion of patients do not receive adequate disease-specific therapy.

The aim of this study is to analyze current approaches to the management of acute migraine attacks, with particular emphasis on the role of rizatriptan in the pharmacotherapy of this disorder. The article reviews contemporary concepts of migraine pathophysiology, including the role of the trigeminovascular system, neurogenic inflammation, and vasoactive neuropeptides in the development of the pain syndrome. The mechanism of action of triptans is described, highlighting their function as selective agonists of serotonin 5-$HT_1B/1D$ receptors, which induce constriction of dilated cranial vessels, inhibit the release of calcitonin gene-related peptide and other inflammatory mediators, and reduce the transmission of nociceptive impulses within the trigeminovascular system.

Particular attention is given to rizatriptan as one of the most effective agents within the triptan class. The results of clinical studies demonstrating a high rate of headache relief and a substantial proportion of patients achieving complete symptom resolution within the first two hours after administration are presented. Rizatriptan is shown to have a rapid onset of action, a favorable safety profile, and good tolerability. Current pharmaceutical formulations are also discussed, including orally disintegrating tablets and intranasal delivery systems, which may enhance treatment efficacy and convenience during migraine attacks.

It is concluded that rizatriptan occupies an important place in contemporary migraine pharmacotherapy and may be considered one of the drugs of choice for the acute treatment of migraine attacks.

Key words: *migraine, triptans, rizatriptan, acute migraine attack, pathophysiology of migraine, pharmacotherapy.*

Connection of the publication with planned research work.

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Introduction.

Migraine is among the most prevalent neurological disorders and is one of the leading causes of temporary disability worldwide. The condition is characterized by recurrent attacks of intense, predominantly unilateral, pulsating headache, often accompanied by nausea, vomiting, and increased sensitivity to light, sound, or odors. The duration of attacks typically ranges from 4 to 72 hours and significantly impairs patients' quality of life. According to epidemiological data, migraine is diagnosed in approximately one in seven individuals globally and occurs about three times more frequently in women than in men [1–5].

Despite the high prevalence of the disease, the issue of timely diagnosis and adequate management of migraine remains highly relevant. International studies indicate that only about 40% of patients receive an accurate clinical diagnosis, while disease-specific and preventive therapies are provided to approximately 12.5% of patients [6–10]. Moreover, only one-third of patients demonstrate adequate adherence to prescribed treatment, which is often associated with insufficient therapeutic efficacy or the occurrence of adverse effects [11–15].

The primary goal of migraine pharmacotherapy is the rapid relief of headache attacks, reduction of the intensity of associated symptoms, decreased recurrence frequency, and improvement of patients' quality of life. In addition, important objectives of treatment include the restoration of patients' physical and social functioning and the reduction of the economic burden of the disease [14, 15].

In contemporary clinical practice, various classes of medications are used for the treatment of migraine attacks, including nonsteroidal anti-inflammatory drugs, analgesics, and migraine-specific agents. Among these, triptans occupy a central role as selective agonists of serotonin 5-$HT_1B/1D$ receptors that target the key pathophysiological mechanisms underlying migraine attacks. These agents promote constriction of dilated cerebral vessels, inhibit the release of neuropeptides, and reduce neurogenic inflammation within the trigeminovascular system [6, 7].

One of the agents in this class is rizatriptan, which has demonstrated high efficacy in the acute treatment of migraine attacks along with a favorable tolerability profile. Clinical studies indicate that rizatriptan may provide more rapid pain relief and a higher proportion of pain-free patients within 2 hours after administration compared with some other triptans [14, 15].

In this context, an analysis of current evidence on the efficacy of rizatriptan, its comparison with other agents in the triptan class, and the evaluation of the potential of novel dosage forms that may improve bioavailability

and accelerate the onset of therapeutic effect are of particular relevance.

The aim of the study.

To synthesize current evidence on the pharmacotherapy of acute migraine attacks, with a focus on the clinical efficacy, safety, and practical role of rizatriptan among triptans. An additional objective was to assess the potential of novel formulations of rizatriptan to enhance the speed of therapeutic onset and ease of use.

Object and research methods.

This study is of a narrative review and analytical nature and is based on a systematic analysis of scientific literature, clinical guidelines, and evidence-based studies addressing pharmacological approaches to migraine management. The literature search was conducted using the PubMed, Scopus, Web of Science, Cochrane Library, and Google Scholar databases.

Main part.

Pathophysiology of migraine.

Migraine is a complex neurological disorder whose pathogenesis is associated with dysregulation of neurovascular mechanisms. Contemporary concepts of migraine attack development are based on the activation of the trigeminovascular system, which leads to the release of vasoactive neuropeptides such as calcitonin gene-related peptide (CGRP), substance P, and neurokinin A [2, 16, 17]. These mediators induce vasodilation of meningeal vessels, increase vascular permeability, and promote the development of neurogenic inflammation [18].

Serotonergic mechanisms also play a significant role in migraine pathogenesis. A decrease in serotonin levels during an attack contributes to impaired regulation of vascular tone and activation of pain pathways. An additional mechanism involved in migraine development is cortical spreading depression – a wave of neuronal depolarization that propagates across the cerebral cortex and is associated with the occurrence of aura in a subset of patients.

As a result of these processes, sensitization of peripheral and central nociceptive structures occurs, leading to the development of the characteristic intense, pulsating headache and associated symptoms [5, 19–23].

Activation of the trigeminovascular system plays a central role in migraine pathogenesis. Under the influence of various trigger factors, neurons of the trigeminal ganglion are activated, resulting in the release of vasoactive neuropeptides, including CGRP, substance P, and neurokinin A. This leads to vasodilation of meningeal vessels, increased vascular permeability, and the development of neurogenic inflammation. Consequently, nociceptive receptors are activated, and pain impulses are transmitted via the trigeminal nerve to central brain structures, resulting in the characteristic migraine pain and associated symptoms **(fig. 1)** [16, 22].

Current approaches to migraine treatment.

Migraine management is aimed at aborting acute attacks and preventing recurrent episodes. The primary goals of therapy are the rapid reduction of pain intensity, relief of associated symptoms, restoration of functional capacity, and improvement of patients' quality of life [6, 23, 24].

For the acute treatment of mild to moderate migraine attacks, nonsteroidal anti-inflammatory drugs (NSAIDs), non-opioid analgesics, and combination analgesics with caffeine are commonly used. In cases of moderate to severe attacks, the use of migraine-specific agents is recommended, including triptans, ergot alkaloids, and newer classes of medications such as calcitonin gene-related peptide (CGRP) receptor antagonists (gepants) and serotonin 5-HT_1F receptor agonists (ditans) [25].

The choice of therapy depends on the frequency and severity of attacks, the presence of comorbid conditions, and the patient's individual response to previous treatment. One of the key principles of modern management is the early administration of an effective medication at the onset of an attack, which increases the likelihood of rapid symptom relief and helps prevent the development of central sensitization [23].

According to the recommendations of the American Headache Society and the European Headache Federation, the selection of a treatment strategy for acute migraine attacks should be based on symptom severity and the patient's prior treatment experience. In cases of insufficient efficacy of simple analgesics, escalation to migraine-specific therapy is recommended, primarily with agents from the triptan class [26–28].

Triptans are considered first-line agents for the treatment of moderate to severe migraine attacks. These medications are selective agonists of serotonin 5-HT_1B/1D receptors and target the key pathophysiological mechanisms underlying migraine attacks. Their therapeutic effects are mediated through constriction of dilated meningeal vessels, inhibition of the release of vasoactive neuropeptides, including calcitonin gene-related peptide (CGRP), and reduction of nociceptive sig-

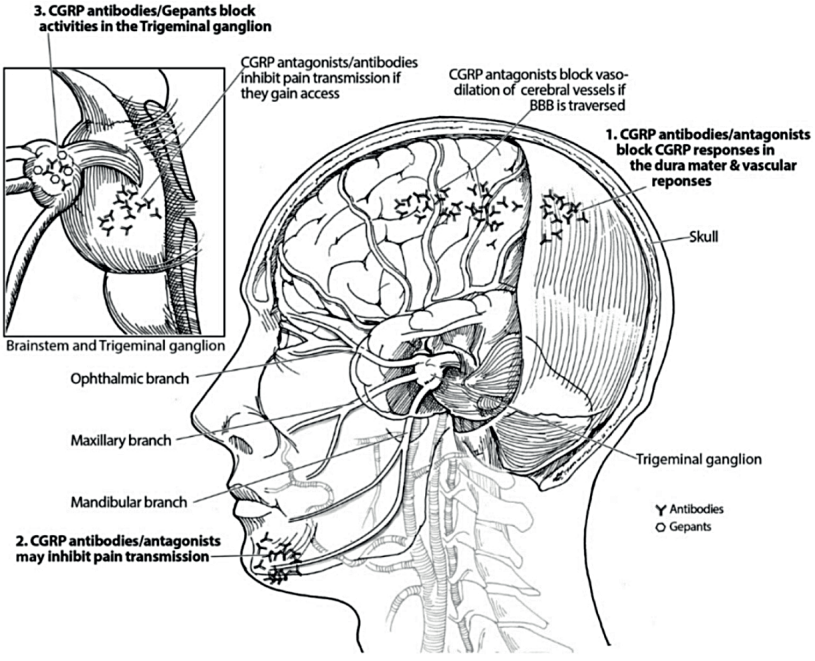

Figure 1 – Schematic representation of the involvement of the trigeminovascular system and calcitonin gene-related peptide (CGRP) in the pathogenesis of migraine [22].

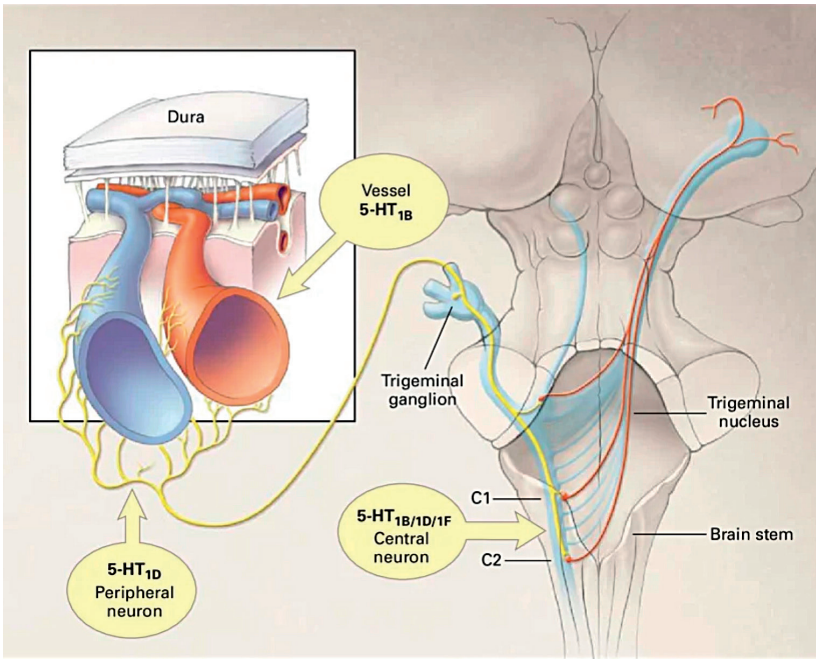

Figure 2 – Key sites of action of triptans within the trigeminovascular system in migraine (5-HT$_1$B/1D/1F receptors) [40].

nal transmission within the trigeminovascular system [29–34].

The principal agents in this class include sumatriptan, zolmitriptan, rizatriptan, naratriptan, almotriptan, frovatriptan, and eletriptan. These drugs differ in their pharmacokinetic properties, onset of action, and duration of effect. The selection of a specific agent depends on the patient's individual response, tolerability, and clinical characteristics of the disease course [31, 33].

An important aspect of contemporary therapy is the use of various dosage forms of triptans, allowing optimization of treatment according to the clinical situation. In addition to conventional oral tablets, nasal sprays, subcutaneous injections, and orally disintegrating tablets are available, which may be particularly beneficial for patients experiencing significant nausea or vomiting during a migraine attack [34].

Thus, triptans play a key role in modern migraine pharmacotherapy by providing effective and rapid relief of attacks. Among the agents in this class, rizatriptan has attracted particular attention due to its high clinical efficacy and favorable tolerability profile.

Triptans in the treatment of migraine.

Triptans are among the most effective and widely used agents for the treatment of acute migraine attacks. They are selective agonists of serotonin 5-HT$_1$B/1D receptors, which play a key role in the regulation of cerebral vascular tone and the transmission of nociceptive impulses within the trigeminovascular system. By targeting the principal pathophysiological mechanisms underlying migraine attacks, triptans provide a targeted and pathophysiologically grounded therapeutic approach to this condition [35, 36].

The mechanism of action of triptans involves several key components. First, they induce constriction of dilated meningeal vessels through activation of 5-HT$_1$B receptors, thereby reducing the vascular component of the pain syndrome [37–40]. Second, activation of 5-HT$_1$D receptors at the terminals of the trigeminal nerve inhibits the release of vasoactive neuropeptides, including calcitonin gene-related peptide (CGRP), substance P, and neurokinin A, which play an important role in the development of neurogenic inflammation. In addition, triptans reduce the transmission of nociceptive impulses within central structures of the trigeminovascular system, further contributing to the reduction of pain intensity **(fig. 2)** [38–40].

Due to this multifaceted mechanism of action, triptans effectively relieve not only headache but also associated migraine symptoms, including nausea, vomiting, photophobia, and phonophobia. Clinical studies have demonstrated that the use of triptans enables significant pain relief or complete resolution within the first two hours after administration in a substantial proportion of patients [38, 41].

The agents in this class include sumatriptan, zolmitriptan, naratriptan, almotriptan, frovatriptan, eletriptan, and rizatriptan. Although all triptans share a similar mechanism of action, they differ in their pharmacokinetic properties, onset of action, duration of effect, and tolerability profiles. Some agents are characterized by a more rapid onset of action, whereas others exhibit a longer duration of effect and a lower rate of headache recurrence.

An important feature of triptan therapy is the interindividual variability in treatment response. Approximately 30% of patients may experience insufficient efficacy or poor tolerability with a given triptan; however, switching to another agent within the same class often results in improved clinical outcomes. This underscores the need for individualized treatment selection based on clinical characteristics of migraine, speed of attack onset, presence of associated symptoms, and patient-specific needs [38, 39].

Among the triptans, rizatriptan has attracted particular attention due to its rapid onset of action and high clinical efficacy in the acute treatment of migraine attacks. Clinical studies indicate that rizatriptan may provide faster pain relief and a higher rate of complete symptom resolution compared with some other triptans. In addition, the drug demonstrates a favorable tolerability profile and high levels of patient satisfaction with treatment [41, 42].

In this context, rizatriptan is regarded as an important representative of the triptan class, widely used for the acute treatment of migraine attacks. Its clinical efficacy and comparative characteristics relative to other agents in this group are of considerable interest in contemporary migraine pharmacotherapy. Therefore, a detailed analysis of the clinical efficacy and specific features of rizatriptan use in patients with migraine is warranted [42].

Comparative efficacy of rizatriptan.

Rizatriptan is one of the most extensively studied agents within the triptan class and is widely used for the treatment of acute migraine attacks. The drug is a selective agonist of serotonin 5-HT$_1$B/1D receptors, activation

of which leads to constriction of dilated cranial vessels, inhibition of the release of vasoactive neuropeptides from trigeminal nerve endings, and suppression of nociceptive signal transmission within the trigeminovascular system. These mechanisms underlie the therapeutic effects of triptans in acute migraine attacks [43, 44].

The pharmacokinetic profile of rizatriptan contributes to its rapid clinical effect. Following oral administration, peak plasma concentrations are typically achieved within approximately 1–1.5 hours, facilitating prompt relief of headache symptoms. The elimination half-life is about 2–3 hours, which is consistent with other agents in this class [45–48].

Randomized controlled clinical trials have demonstrated that rizatriptan at a dose of 10 mg provides a high rate of headache relief in migraine. According to a meta-analysis of clinical trials involving more than 24,000 patients, the proportion of patients achieving headache relief within 2 hours after administration of rizatriptan 10 mg is approximately 65–70%, while complete pain resolution within 2 hours is observed in about 35–40% of patients [44, 45].

Comparative analyses of the efficacy of oral triptans **(table)** in the treatment of acute migraine attacks indicate certain differences among agents within this class. In particular, rizatriptan 10 mg provides headache relief within 2 hours in approximately 65–70% of patients, whereas complete pain freedom within the same time frame is achieved in about 35–40% of cases. The rate of sustained pain-free response over 24 hours is approximately 25–30% [37, 38].

Comparable efficacy outcomes have also been reported for eletriptan at doses of 40–80 mg, with pain relief at 2 hours observed in 65–70% of patients and complete pain resolution in 35–40% of cases. The rate of sustained pain-free response with this agent is approximately 25–30% [35, 36].

Table – Comparative efficacy of oral triptans in the treatment of acute migraine attacks

Drug	Standard dose	Pain relief at 2 h (%)	Pain-free at 2 h (%)	Sustained pain-free at 24 h (%)
Rizatriptan	10 mg	65–70	35–40	25–30
Sumatriptan	100 mg	60–65	25–30	20–25
Zolmitriptan	2.5–5 mg	60–65	30–35	20–25
Naratriptan	2.5 mg	50–55	20–25	18–22
Eletriptan	40–80 mg	65–70	35–40	25–30
Almotriptan	12.5 mg	60–65	30–35	25–28

Note: the values are based on meta-analyses of randomized clinical trials evaluating the efficacy of triptans in the treatment of acute migraine attacks.

Sumatriptan at a dose of 100 mg provides headache relief within 2 hours in approximately 60–65% of patients, while complete pain freedom at this time point is achieved in about 25–30% of cases. The proportion of patients maintaining a pain-free state over 24 hours is approximately 20–25% [35, 43].

Zolmitriptan at doses of 2.5–5 mg demonstrates similar efficacy, with pain relief at 2 hours occurring in 60–65% of patients and complete resolution of pain in approximately 30–35% of cases. The rate of sustained pain-free response over 24 hours is about 20–25% [35, 43].

Almotriptan at a dose of 12.5 mg provides pain relief within 2 hours in approximately 60–65% of patients, with complete pain resolution observed in 30–35% of cases. Sustained pain-free response over 24 hours is achieved in approximately 25–28% of patients.

Naratriptan at a dose of 2.5 mg is associated with somewhat lower efficacy rates, with pain relief at 2 hours observed in approximately 50–55% of patients, complete pain resolution in 20–25% of cases, and sustained pain-free response over 24 hours in approximately 18–22% [35, 43].

The results of comparative analyses indicate that rizatriptan and eletriptan demonstrate among the highest efficacy rates among oral triptans for the acute treatment of migraine attacks. At the same time, other agents in this class also provide substantial clinical benefit and may be selected based on individual patient characteristics and specific clinical circumstances.

An important clinical indicator of triptan efficacy is the therapeutic gain, defined as the difference between the response rate to the active drug and that to placebo. For rizatriptan, this parameter is approximately 30–35%, indicating its high clinical efficacy among oral triptans [34].

In addition to relieving headache, rizatriptan effectively reduces associated migraine symptoms, including nausea, vomiting, photophobia, and phonophobia. The reduction of these symptoms is of significant importance for improving patients' functional status and restoring their daily activities [46–48].

Another important parameter is the intra-individual consistency of the therapeutic response. Clinical studies have shown that approximately 86% of patients achieved an effective response in at least two out of three migraine attacks, indicating a high level of predictability of rizatriptan's therapeutic effect [48].

From a tolerability standpoint, rizatriptan is characterized by a favorable safety profile. The most commonly reported adverse effects are mild and transient, including sensations of warmth, paresthesia, dizziness, or chest pressure, which generally do not require discontinuation of the medication.

Novel formulations of rizatriptan.

The efficacy of oral medications during a migraine attack may be limited by functional disturbances of the gastrointestinal tract, particularly gastroparesis, which is commonly observed in patients with migraine. Delayed gastric motility leads to prolonged gastric emptying and, consequently, slower absorption of orally administered drugs. This may result in a delayed onset of action, variability in pharmacokinetic parameters, and reduced therapeutic efficacy during acute attacks [49, 50].

To overcome these limitations, alternative formulations of triptans are being actively developed to enable more rapid delivery of the active substance into the systemic circulation and to allow use in patients with pronounced gastrointestinal symptoms. These include intranasal formulations, orally disintegrating tablets (ODTs), and other noninvasive drug delivery systems.

Intranasal administration of triptans represents a promising approach, as the nasal mucosa is highly vascularized, allowing rapid drug absorption and a faster onset of therapeutic effect. In addition, this route of

administration partially bypasses first-pass hepatic metabolism and reduces dependence of drug efficacy on gastrointestinal function. Intranasal formulations are particularly useful in patients whose migraine attacks are accompanied by severe nausea or vomiting, which may hinder oral drug intake [50, 51].

Orally disintegrating tablets of rizatriptan constitute another modern formulation designed to improve ease of use. These tablets rapidly disintegrate in the oral cavity without the need for water, which is an important advantage during acute migraine attacks. Following disintegration, the active substance is swallowed with saliva and absorbed in the gastrointestinal tract.

Although the majority of the drug is absorbed in the intestine, the rapid disintegration of the tablet shortens the time to the onset of absorption and enhances convenience for the patient.

Clinical studies have demonstrated that the efficacy of orally disintegrating rizatriptan tablets is comparable to that of standard oral formulations in relieving headache and associated migraine symptoms. At the same time, patients often report greater convenience with this dosage form, particularly in situations where access to water is limited or when the attack is accompanied by nausea.

The use of alternative formulations of rizatriptan may enhance patient adherence to therapy, optimize migraine pharmacotherapy, and improve clinical outcomes [52].

Ongoing research is focused on the development of advanced drug delivery systems that provide an even faster onset of action and more consistent therapeutic effects.

Thus, rizatriptan remains an important and effective agent in the management of acute migraine attacks. Further studies aimed at improving its formulations and delivery systems may contribute to optimizing therapy, increasing patient adherence, and enhancing clinical outcomes in patients with migraine.

Conclusions.

Migraine is one of the most prevalent primary headache disorders and is regarded as a chronic neurological disease that significantly affects patients' physical, social, and occupational functioning. Its high prevalence, recurrent nature, and substantial level of disability underscore the need for effective and timely pharmacotherapy. Contemporary approaches to the treatment of acute migraine attacks include both nonspecific analgesics and migraine-specific agents, among which triptans – selective agonists of serotonin 5-$HT_1B/1D$ receptors – play a central role.

Rizatriptan is one of the most effective agents within this class and is widely used for the acute treatment of migraine attacks. Through its selective action on serotonin receptors, the drug induces vasoconstriction of dilated cranial vessels, inhibits the release of neuropeptides from trigeminal nerve endings, and suppresses nociceptive signal transmission within the trigeminovascular system. These mechanisms contribute to the rapid reduction of headache intensity and associated migraine symptoms.

Evidence from numerous randomized clinical trials and meta-analyses demonstrates the high clinical efficacy of rizatriptan. Its use results in a substantial proportion of patients achieving significant pain relief or complete resolution of headache within the first two hours after administration, along with a reduction in associated symptoms such as nausea, photophobia, and phonophobia. In addition, rizatriptan is characterized by good tolerability and a favorable safety profile, making it an important component of contemporary migraine pharmacotherapy.

Comparative analyses of different triptans indicate that rizatriptan demonstrates some of the highest rates of therapeutic response among oral agents in this class, particularly in terms of rapid pain relief and the achievement of sustained pain-free outcomes. This supports its consideration as one of the treatments of choice for acute migraine attacks.

At the same time, the efficacy of oral formulations may be limited by gastrointestinal motility disturbances during migraine attacks. In this regard, the development of alternative dosage forms – such as nasal sprays and orally disintegrating tablets – represents an important direction in pharmacotherapy, as these formulations may enable faster drug absorption and improve ease of use for patients.

Prospects for further research.

Future studies should focus on the comparative evaluation of modern formulations of rizatriptan, the identification of predictors of therapeutic response, and the assessment of its role within personalized treatment algorithms for migraine, taking into account the clinical phenotype of attacks, associated symptoms, and comorbid conditions.

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ФАРМАКОЛОГІЧНІ ПІДХОДИ ДО ЛІКУВАННЯ МІГРЕНІ: РОЛЬ РИЗАТРИПТАНУ У КУПІРУВАННІ НАПАДІВ (ОГЛЯД ЛІТЕРАТУРИ)

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Резюме. Мігрень становить актуальну медико-соціальну проблему сучасної неврології через рецидивуючий перебіг, виражений вплив на функціональний стан пацієнтів і значний тягар захворювання. Висока поширеність мігрені, значний рівень інвалідизації, схильність до рецидивуючого перебігу, а також недостатня своєчасність діагностики й неповне охоплення пацієнтів специфічною терапією зумовлюють актуальність аналізу сучасних підходів до лікування цього захворювання. Особливий інтерес у сучасній фармакотерапії мігрені становлять препарати, здатні забезпечувати швидке та достатньо стійке купірування гострого нападу при прийнятному профілі безпеки і добрій переносимості. Метою роботи було узагальнення сучасних даних щодо фармакотерапії гострих нападів мігрені з акцентом на механізми дії, клінічну ефективність і переносимість триптанів, а також визначення місця ризатриптану серед препаратів цього класу. Додатково поставлено завдання проаналізувати значення сучасних лікарських форм ризатриптану та їх потенційну роль в оптимізації лікування пацієнтів із мігренню. У роботі узагальнено сучасні уявлення про патофізіологію мігрені, зокрема роль тригеміноваскулярної системи, нейрогенного запалення, серотонінергічних механізмів, кальцитонін-ген-зв'язаного пептиду та центральної й периферичної сенситизації у формуванні больового синдрому та супутніх симптомів. Показано, що триптани посідають важливе місце у лікуванні гострих нападів мігрені завдяки здатності впливати на ключові патогенетичні ланки захворювання через активацію серотонінових рецепторів 5-HT_1B/1D. Їхній терапевтичний ефект пов'язаний зі звуженням дилатованих менінгеальних судин, пригніченням вивільнення вазоактивних нейропептидів і зменшенням передачі ноцицептивних імпульсів у тригеміноваскулярній системі. Особливу увагу приділено ризатриптану як одному з клінічно значущих представників класу триптанів. Узагальнені дані свідчать, що препарат характеризується швидким початком дії, високою частотою зменшення інтенсивності головного болю впродовж перших двох годин після прийому та доброю переносимістю у більшості пацієнтів. Поряд із впливом на больовий синдром, ризатриптан сприяє послабленню нудоти, фотофобії та фонофобії, що має важливе значення для відновлення функціональної активності хворих. Розглянуто також порівняльні характеристики пероральних триптанів, які свідчать, що ризатриптан належить до найбільш ефективних засобів для купірування гострого мігренозного нападу за умови індивідуалізованого підбору терапії. Окремо проаналізовано значення сучасних лікарських форм препарату, зокрема орально-диспергованих таблеток, а також перспективних альтернативних систем доставки, які можуть підвищувати зручність застосування, прихильність до лікування та клінічну результативність терапії, особливо у пацієнтів із вираженою нудотою, блюванням або порушенням гастроінтестинальної моторики під час нападу. Ризатриптан займає важливе місце у сучасній фармакотерапії гострих нападів мігрені завдяки поєднанню патогенетично обґрунтованого механізму дії, високої клінічної ефективності та сприятливого профілю переносимості. Його застосування є доцільним у пацієнтів, які потребують швидкого купірування нападу та відновлення повсякденної активності. Подальше вдосконалення лікарських форм і розвиток персоналізованих підходів до вибору триптанів можуть розширити можливості ефективного та безпечного лікування мігрені.

Ключові слова: мігрень, триптани, ризатриптан, гострий мігренозний напад, патофізіологія мігрені, фармакотерапія.

PHARMACOLOGICAL APPROACHES TO THE TREATMENT OF MIGRAINE: THE ROLE OF RIZATRIPTAN IN THE RELIEF OF ATTACKS (LITERATURE REVIEW)

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Abstract. Migraine constitutes a relevant medical and social challenge in modern neurology because of its recurrent course, pronounced impact on patients' functional status, and substantial disease burden. The high prevalence of migraine, the considerable level of disability associated with it, its tendency toward recurrence, as well as insufficiently timely diagnosis and incomplete access of patients to specific therapy, underscore the relevance of analysing current approaches to the treatment of this disorder. Of particular interest in contemporary migraine pharmacotherapy are agents capable of providing rapid and sufficiently sustained relief of an acute attack while maintaining an acceptable safety profile and good tolerability. The aim of this study was to summarise current data on the phar-

macotherapy of acute migraine attacks, with particular emphasis on the mechanisms of action, clinical efficacy, and tolerability of triptans, and to determine the place of rizatriptan among drugs of this class. An additional objective was to analyse the significance of modern dosage forms of rizatriptan and their potential role in optimising the treatment of patients with migraine. The paper summarises current concepts of migraine pathophysiology, including the role of the trigeminovascular system, neurogenic inflammation, serotonergic mechanisms, calcitonin gene-related peptide, and central and peripheral sensitisation in the development of pain and associated symptoms. It is shown that triptans occupy an important place in the treatment of acute migraine attacks owing to their ability to influence key pathogenetic links of the disease through activation of 5-HT_1B/1D serotonin receptors. Their therapeutic effect is associated with constriction of dilated meningeal vessels, inhibition of the release of vasoactive neuropeptides, and reduction of nociceptive impulse transmission within the trigeminovascular system. Particular attention is paid to rizatriptan, a clinically significant representative of the triptan class. The summarised data indicate that this drug is characterised by a rapid onset of action, a high rate of reduction in headache intensity within the first two hours after administration, and good tolerability in most patients. In addition to its effect on pain, rizatriptan contributes to the alleviation of nausea, photophobia, and phonophobia, which is important for restoring patients' functional activity. The comparative characteristics of oral triptans are also considered, indicating that rizatriptan belongs to the most effective agents for the relief of acute migraine attacks when therapy is selected on an individualised basis. The significance of modern dosage forms of the drug, particularly orally disintegrating tablets, as well as promising alternative delivery systems, is analysed separately. These formulations may improve the convenience of use, treatment adherence, and clinical effectiveness, especially in patients with marked nausea, vomiting, or impaired gastrointestinal motility during an attack. Rizatriptan occupies an important place in the current pharmacotherapy of acute migraine attacks due to the combination of a pathogenetically substantiated mechanism of action, high clinical efficacy, and a favourable tolerability profile. Its use is appropriate for patients who require rapid relief of an acute attack and restoration of daily functioning. Further improvement of dosage forms and the development of personalised approaches to triptan selection may expand the possibilities for effective and safe migraine treatment.

Key words: migraine, triptans, rizatriptan, acute migraine attack, pathophysiology of migraine, pharmacotherapy.

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