

# Current Recommendation for the Treatment of Acute Migraine

Supreet Khare<sup>1</sup>; Deeksha Seth<sup>2</sup>; Shrayash Khare<sup>3</sup> & Rajit Gohil<sup>4</sup>.

<sup>1</sup>MBBS, Armed Forces Medical College, Pune, India.

drsupreet.khare@gmail.com

<sup>2</sup>MBBS, Kasturba Medical College, Manipal University, India.

muzic.deeksha@gmail.com

<sup>3</sup>MBBS, Sarojini Naidu Medical College, Agra, India.

Shrayash08@gmail.com

<sup>4</sup>MBBS, Silesian University of Medicine Poland

rajitgohil32@yahoo.com

## Abstract

*Migraine is the second most common reason behind patient complaining with headache. It is a common, disabling headache disorder, with substantial social and economic bearing, and is currently ranked by the World Health Organization as 19th among causes of years, which are lived with disability. The treatment of migraine is specific for each and every patient. The present review article focuses on the current recommendations for the treatment of acute migraine.*

**Key Words:** Migraine, treatment, drugs, therapy.

## Introduction

Migraine is the second most common reason behind patient complaining with headache. It's a recurrent neurological disorder, affecting 10-12 % of the population in the west. In population studies, the prevalence of migraine is approximately 17 % in women and 6 % in men <sup>[1]</sup>. Globally, half to three quarters of the adults between 18–65 years of age have had headache in the last year and among those personages, more than 10% have reported to have migraine. It is a common, disabling headache disorder, with substantial social and economic bearing, and is currently ranked by the World Health Organization as 19th among causes of years, which are lived with disability <sup>[2,3]</sup>. The treatment of migraine is specific for each and every patient. Currently following drugs are recommended for the treatment of an acute migraine attack.

## NSAIDS

Both the severity and duration of migraine attack can be reduced significantly by the use of NSAIDs. Numerous, different nonsteroidal anti-inflammatory drugs (NSAIDs) have been shown in randomized controlled trials to be effective for acute migraine <sup>[4,5]</sup>. As a parenteral formulation, ketorolac has been shown to be effective in the treatment of acute attacks of migraine. The recommended ketorolac dosage for abortive treatment of migraine is a 60-mg IM dose or 30-mg IM or IV doses every 6 hours (maximum daily dose of 120 mg) <sup>[6]</sup>. The added benefit of NSAIDs combined with other therapies remains unclear, but it has shown to be proven effective when added with triptans <sup>[11]</sup>. But still it's reasonable to prescribe NSAIDs alone given their consistent efficacy when studied as monotherapy. Common side effects include dyspepsia and gastrointestinal irritation.

### **Acetaminophen**

Patients frequently take acetaminophen during acute attacks. A Cochrane meta-analysis estimated the number needed to treat to be 12 for acetaminophen in acute migraine<sup>[7]</sup>. Given the cheap cost, easy availability, and low side effect profile of acetaminophen, it is one of the most useful drug for preventing acute attacks of migraine. FDA has approved combination of acetaminophen, aspirin and caffeine for treatment of mild to moderate migraine attacks. Though acting alone acetaminophen has been proved ineffective for the treatment of migraine attacks<sup>[8]</sup>.

### **Triptans**

Stimulation of 5-HT<sub>1B/1D</sub> receptors can stop an acute migraine attack. Early triptan use after the onset of headache may benefit to improve the effectiveness of acute migraine treatment, particularly in those patients, which have rapid pain onset, and it's deterioration, high frequency of migraine attack and severe associated symptoms<sup>[9]</sup>. Despite their usefulness as to prevent acute attacks of migraine, however, the triptans do not successfully treat all attacks of migraine or relieve all migraine-associated symptoms, such as nausea, vomiting even when they are administered in the early phase of an acute attack<sup>[10]</sup>.

A promising solution to increase the venture of successful treatment is to combine the triptan with a nonsteroidal anti-inflammatory drug (NSAID), which may help additionally to combat the distinct vascular and inflammatory processes underlying migraine<sup>[11]</sup>. Studies combining sumatriptan with naproxen<sup>[12]</sup>, rizatriptan with rofecoxib<sup>[13]</sup> or almotriptan with aceclofenac<sup>[14]</sup> have all demonstrated an increase in the proportion of migraine patients with required treatment outcomes.

Several medications are now available that can be administered to the patient by oral, nasal, or even subcutaneous routes. Evidence indicates that subcutaneous delivery is one of the fastest and utmost efficient methods of delivery, although no clear superiority of one triptan over another has been documented yet<sup>[15]</sup>. Common side effects, which result from triptan use, include hypersensitivity reactions, paresthesias and dizziness. Triptans are contraindicated in cases of pregnancy, basilar migraines, cardiovascular disease, Prinzmetal angina, ischemic stroke, and if an ergotamine is used within the previous 24 hours. Studies have also suggested that triptan therapy is less effective in patients with prolonged and severe migraine<sup>[16]</sup>.

### **Ergotamines**

Acting in the same way as triptans, that is on the serotonin 1B and 1D receptors, dihydroergotamine (DHE) has been approved by FDA as parenteral therapy in case of migraine attacks. There are also some evidence supporting that DHE combined with an antiemetic medication is as effective as other classes of drug for migraine such as meperidine, valproate, or triptan in relieving migraine headache and preventing relapse<sup>[17]</sup>. However, studies that compare the efficacy of DHE monotherapy and when combined with an antiemetic are few and favors non-DHE therapies<sup>[18]</sup>. Contraindications for dihydroergotamine are no different to those of triptans. Given the possible side effect report and lack of its therapeutic superiority when compared with other common treatment modalities, ergotamine is not preferred to be used as a first line drug for treating acute attack of migraine.

### **Dopamine antagonist**

Drugs such as metoclopramide, chlorpromazine, and prochlorperazine and others all have demonstrated efficacy in randomized trials as monotherapy for acute migraine [19]. While metoclopramide has been the most studied, there are facts, which suggest that chlorpromazine, and prochlorperazine may be more efficient in reducing pain and nausea [19].

Drug absorption is impaired during migraine because of reduced gastrointestinal motility, therefore when an oral NSAIDs or triptan fail, the addition of a dopamine antagonist should be considered to enhance gastric absorption

The most common adverse reactions are sedation and postural hypotension. Though mentioned in theories but clinically akathisia were rarely noticed [20]. Akathisia was more commonly associated with prochlorperazine than metoclopramide, and when given in adjunct with diphenhydramine, it reduced the relative risk of akathisia induced by the former by 61% [21].

### **Opioids**

When compared with NSAIDs, DHE, and antiemetic medications, opioids are less successful for migraine [22]. Unfortunately, most of the literature about the use of opioids for migraine was published when meperidine was commonly used. In patients taking oral narcotics such as oxycodone or hydrocodone, there addiction can wholly obscure the treatment of migraine. Raving for narcotics and its withdrawal can aggravate and heighten migraine [23]. This regimen only works in the sense that the sense of pain of migraine is eliminated without treating the underlying mechanism.

### **Combined pharmacological treatment**

Combination treatment has been proved to be much affective for combating acute migraine attack than individualized monotherapy. In response, to the current trend in clinical practice towards combination therapy, numerous studies have been reported. AV Krymchantowski, a Brazilian scientist, did an open-label randomized protocol study on 45 patients, using a combination of RIZ plus the COX-2 inhibitor rofecoxib (RO) or the NSAID tofenamic acid (TA). Results showed a superior pain-free response at 2 hours with RIZ + RO (62.9%) and RIZ + TA (40.6%) compared with RIZ alone (37.9%) and a better recurrence rate as well [24]. Smith et al and Wargin et al found superior efficacy of SUM + Naproxen in two separate trials and he presented his findings at the 2005 yearly meeting of American Academy of Neurology (AAN). This combination is being considered for FDA approval to be released by Glaxo Smith Kline under the trade name Trexima.

### **Non-Pharmacological Management**

In migraine most patient benefit by identification and avoidance of a specific trigger for their headache. A regulated routine is advantageous, including a balanced diet, regular exercise, regular sleep, adequate water intake, avoidance of excess caffeine or alcohol and avoidance of acute changes in stress levels. For most patients this approach is a best adjunct to pharmacotherapy. Psycho-physiologic management such as biofeedback, meditation self-relaxation, trigger point massage, and acupuncture are some of the recent methods in use to help migraine patients.

### **Conclusion**

The mainstay of pharmacological therapy in treatment of a migraine attack is the judicious use of one or more drugs that are effective in

migraine. The selection of an optimal regimen for a given patient depends on lots of factors, important one includes the age, severity of attack, its duration and so on and so forth. In general migraine therapy should be individualized, a standard approach for all patients is not possible. It is hypothesized that the pain of migraine results from a cyclic propagation of neural dysfunction and vasospasm in the brain. Purported therapies for the acute treatment of migraine are legion and of mixed efficacy. Some therapeutic strategies might even increase its' recidivism and therefore a therapeutic regimen may be needed to be constantly refined until one is chosen to be best for the patient.

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