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Acute treatment of migraine headache

Marisa Chang, MD,[a] Alan M. Rapoport, MD[a,b]

From the [a]Department of Neurology, The David Geffen School of Medicine at UCLA, Los Angeles, California; and [b]The New England Center of Headache, Stamford, Connecticut.

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The purpose of this article is to provide practitioners with the tools necessary to diagnose and treat acute migraine. The current diagnostic criteria for migraine are outlined. Pearls to distinguish migraine from the other primary headaches, such as tension-type headache and cluster headache, are provided. The importance of the headache history, plus indications for neuroimaging, are presented. Readers will be taught how to take an effective headache history. General principles of treatment, including appropriate medication selection, medication dosing and route of administration, medication contraindications, drug interactions, and tips to optimize success are covered. A stratified care plan is outlined. Acute migraine treatment options are discussed, including dosing, side effects, and summary recommendations for simple analgesics, combination analgesics, opiates, corticosteroids, and the migraine specific ergots and triptans. The 7 available triptans are covered in detail and tips for selecting the most appropriate triptan for specific situations are delineated. Preventative and future treatments are briefly discussed.

Migraine affects approximately 12% of the population in most Western societies. The World Health Organization has shown that migraine is one of the top 20 disabling disorders. The burden of illness and cost for migraine is greater than that of epilepsy, stroke, Parkinson's syndrome, multiple sclerosis, and Alzheimer's disease combined.

The prevalence of migraine varies by age and sex. Before puberty, slightly more boys are affected than girls. As puberty and adolescence approaches, migraine prevalence increases rapidly in girls and, during the adult years, female migraine sufferers outnumber male ones by 3:1.[1] More than 80% of patients who develop migraine have their first attack before the age of 30 years.

The correct identification and diagnosis of migraine headache is essential. The International Headache Society (IHS) has published a second classification of headache disorders (the ICHD-2), in 2004. The primary headache disorders fall into 3 main categories: (1) migraine, (2) tension-type headache, and (3) cluster headache. Migraine is subclassified into migraine without aura, migraine with aura, basilar type migraine, hemiplegic migraine, and chronic migraine.

The IHS diagnostic criteria for migraine without aura require at least 5 previous attacks of headache lasting 4 to 72 hours. The headache must have at least 2 of the following 4 characteristics: unilateral location, pulsating quality, moderate or severe pain intensity, or aggravation by or avoidance of routine physical activity, such as bending over. In addition, during the headache, the patient must have at least one of the following 3 characteristics: nausea, vomiting, or both photo and phonophobia. An aura is classified as a fully reversible neurological symptom that develops gradually over greater than 5 minutes and lasts no longer than 60 minutes. A headache fulfilling the criteria for migraine with aura must begin during the aura or follow the aura within 60 minutes. Common auras include visual symptoms (flashing lights, blind spots, zig-zag lines, colored dots or loss of vision in certain areas), sensory symptoms (numbness or tingling in one side of the face, arm or leg), or speech

Address reprint requests and correspondence: Marisa Chang, MD, UCLA Department of Neurology, Neurological Services, 300 Medical Plaza, Suite B200, Los Angeles, CA 90095-6975.
E-mail address: marisachang@mednet.ucla.edu.

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Table 1 Migraine headache diagnostic criteria of the ICHD-2

Migraine without aura:
- A. At least 5 attacks fulfilling criteria B-D
- B. Headache attacks lasting 4-72 hours (untreated or unsuccessfully treated)
- C. Headache has at least two of the following characteristics:
  1. Unilateral location
  2. Pulsating quality
  3. Moderate or severe pain intensity
  4. Aggravation by or causing avoidance of routine physical activity (eg, walking or climbing stairs)
- D. During headache at least one of the following:
  1. Nausea and/or vomiting
  2. Photophobia and phonophobia
- E. Not attributed to another disorder

Typical aura with migraine headache:
- A. At least 2 attacks fulfilling criteria B-D
- B. Aura consisting of at least one of the following, but no motor weakness:
  1. Fully reversible visual symptoms, including positive features (eg, flickering lights, spots or lines) and/or negative features (ie, loss of vision)
  2. Fully reversible sensory symptoms, including positive features (ie, pins and needles) and/or negative features (ie, numbness)
  3. Fully reversible dysphasic speech disturbance
- C. At least 2 of the following:
  1. Homonymous visual symptoms and/or unilateral sensory symptoms
  2. At least one aura symptom develops gradually over ≥5 minutes and/or different aura symptoms occur in succession over ≥5 minutes
  3. Each symptom lasts ≥5 and ≤60 minutes
- D. Headache fulfilling criteria B-D for 1.1 *Migraine without aura* begins during the aura or follows aura within 60 minutes
- E. Not attributed to another disorder

disturbance. It is important to note that motor weakness is not included in this classification. Motor auras are in the separate category of hemiplegic migraine (Table 1).

When diagnosing migraine it is important to correctly distinguish it from the 2 other primary headache disorders, ie, tension-type headache and cluster headache. Tension-type headaches are the most common and prevalent type of primary headache, affecting 70% to 90% of the population. Tension-type headaches last from 30 minutes to 7 days. They have at least 2 of the following characteristics: bilateral location, pressing/tightening (nonpulsating) quality, mild or moderate intensity, no aggravation by routine physical activity. In addition, tension-type headache must have both of the following characteristics: no nausea or vomiting and no more than one of photophobia or phonophobia. Tension-type headache is a bilateral headache with none of the qualities of migraine (Table 2).

The rarest of primary headaches, and the only one that occurs more in men than women, is cluster headache, which affects <0.1% of the population. Cluster patients have severe, extremely intense, and unbearable unilateral orbital, supraorbital, and/or temporal pain lasting 15 to 180 minutes if untreated. Cluster headaches are accompanied by at least one of the following autonomic signs: ipsilateral conjunctival injection, lacrimation, nasal congestion, rhinorrhea, eyelid edema, forehead sweating, miosis, or ptosis. Many patients have a sense of restlessness or agitation during the attack and that may be used instead of any autonomic finding to qualify for the diagnosis. In addition, cluster headaches tend to be cyclical, coming in bouts about once per year for a 4- to 8-week cluster period. During that period patients have attacks from one every other day to 8 per day, often at the same time daily, and frequently waking the patient in the early morning. The presence of any autonomic symptom in a patient with a headache lasting about 1 hour should point to the diagnosis of cluster headache, and not migraine or sinus problems. The restlessness or agitation during a cluster attack contrasts with a migraine attack during which patients prefer to lie absolutely still in a dark quiet room.

Finally, it is of utmost importance not to miss serious and life-threatening causes of headache. Any headache that is the worst headache of the patient's life, of sudden onset (thunderclap headache), or presenting with marked changes (in frequency, location, accompanying neurologic symptoms or severity) should be investigated further with neuroimaging. We usually prefer the use of magnetic resonance imaging as the initial screening tool. In addition, patients with possible or proven HIV, cancer, seizures, or new onset headache after the age of 50 warrant further evaluation. Any patient with an abnormal neurological history or examination should be further evaluated.

Table 2 Tension-type headache diagnostic criteria of the ICHD-2

- A. At least 10 episodes occurring on <1 day per month on average (<12 days per year) and fulfilling criteria B-D
- B. Headache lasting from 30 minutes to 7 days
- C. Headache has at least two of the following characteristics:
  1. Bilateral location
  2. Pressing/tightening (nonpulsating) quality
  3. Mild or moderate intensity
  4. Not aggravated by routine physical activity, such as walking or climbing stairs
- D. Both of the following:
  1. No nausea or vomiting (anorexia may occur)
  2. No more than one of photophobia or phonophobia
- E. Not attributed to another disorder