Chronic Migraine: Making the Diagnosis

Learning Objectives
After participating in this educational activity, participants should be able to

1. Identify the specific diagnostic criteria for chronic migraine
2. Demonstrate collaborative interview techniques for assessing patients with chronic migraine
3. Develop a management approach that matches the needs of the patients with chronic migraine

Introduction
The diagnosis and management of migraine headache and chronic migraine continue to pose significant challenges to busy primary care clinicians. Fortunately there is continuous progress being made in defining and classifying migraine headache subtypes and syndromes. These advances enhance a primary care provider’s ability to choose the best therapeutic intervention and medication for each patient. Clinicians need to be aware of the evolution of “chronic migraine” classification and recent clinical trials that have demonstrated efficacy and benefit of botulinum toxin for treatment of chronic migraine.

Q1. Chronic migraine is a diagnosis defined by 15 or more days of headache per month (in an individual with migraine) for at least
   a. 1 month
   b. 2 months
   c. 3 months
   d. 6 months
The term “chronic migraine” has often been used to describe the migraine pattern in a patient who has had migraine headaches for years (hence the term chronic) or to describe a pattern of frequent or more severe migraines. In 2004, chronic migraine was officially classified in the International Classification of Headache Disorders, Second Edition (ICHD-2). For chronic migraine to be diagnosed according to ICHD-2, the migraine headache had to be present for 15 days or more per month for three months or more. The migraine headache had to fulfill the criteria for migraine without aura on all of the 15 days or more per month to meet the strict diagnostic criteria for chronic migraine.

Subsequently, it was found that these criteria for chronic migraine were too restrictive. Many patients with chronic migraine are going to take their triptan or other acute headache medication early in the headache to abort the full-blown migraine attack; therefore, the headache may not have yet evolved into a full-blown migraine. As a result, these patients may have 15 days or more a month of headache but not all fulfill the criteria for migraine.

The Chairman and several members of the ICHD met and debated the criteria for chronic migraine and proposed amended diagnostic criteria for chronic migraine that would be more inclusive of those migraine patients in our practice with frequent headaches and better suited for further research of chronic migraine. In publishing this revised definition of chronic migraine the authors stated that chronic migraine is considered a consequence of episodic migraine; thus supporting the concept of early diagnosis and effective treatment of the patient with episodic migraine.

Chronic migraine patients in our practice have more than simply more frequent attacks of migraine. Chronic migraine is associated with greater disability, more associated comorbid conditions, greater medical costs, and greater burden of disease than those with episodic migraine. They are often among our most challenging patients in our practice. This CME activity will review the current diagnostic criteria for chronic migraine, demonstrate collaborative techniques for assessing our patients with chronic migraine, and provide practical management strategies for these challenging patients in our practice.

**Making the Diagnosis of Chronic Migraine**

Migraine is a primary headache disorder. Other primary headache disorders include tension-type headache and cluster headache. There are no diagnostic tests for migraine. The diagnosis is made by the history and description of the headache attacks. Good communication between the patient and the healthcare provider is crucial to making the correct diagnosis. Episodic migraine is characterized by recurrent episodes of disabling headache attacks in a genetically prone individual. Recent research supports the theory that most migraine patients have inherited their migraines as a genetic predisposition. Migraine can be thought of as the “hyperexcitable brain.” Migraine can be the “great masquerader” and often presents as tension-type headache, sinus headache, probable migraine, “period” headache, muscular neck pain, cyclic vomiting, and “stress” headache. Migraine can be all of these and more.
If not effectively treated, migraine headache attacks generally last four to 72 hours. This duration helps differentiate migraine from the shorter duration primary headaches such as cluster headache.

When does migraine become chronic migraine by definition? The table shown below is the official revised International Headache Society criteria for chronic migraine.

**Current International Headache Society Criteria for Chronic Migraine**

A. Headache (tension-type and/or migraine) on 15 days or more per month for at least three months

B. Occurring in a patient who has had at least five attacks fulfilling migraine without aura

C. On eight days or more per month for at least three months headache has fulfilled C1 and C2 below and/or C3 below

1. Has at least two of a through d
   a. Unilateral location
   b. Pulsating quality
   c. Moderate or severe pain intensity
   d. Aggravation by, or causing avoidance of, routine physical activity

2. Has at least one of a or b
   a. Nausea and/or vomiting
   b. Photophobia and phonophobia

3. Treated and relieved by triptan(s) or ergot before the expected development of the symptoms listed in C1 and C2

D. No medication overuse and not attributed to another causative disorder
Q2. Bill has a history of migraine and tension-type headaches. A review of his headache diary shows 16 to 18 headache days per month in the past three months. He takes a triptan on nine of the headache days in a month and if he takes it early in the headache, the headache goes away and he never gets the nausea or photophobia. He has learned to take the triptan during the mild phase of his headache when it feels more like a tension-type headache. On occasion the headache progresses and becomes so severe that he vomits and rescues with an injection of sumatriptan. Other headache days feel more like a tension-type headache and he treats with an over-the-counter analgesic or drinks a caffeinated beverage with some relief. Bill’s diagnosis is

a. Medication overuse headache from excessive triptan use
b. Mixed headache type
c. Chronic daily headache
d. Chronic migraine
e. Transformed migraine

Discussion: Bill takes his triptan early for nine of his headache days a month; at this stage, the headache is not yet a full-blown migraine but it responds to the triptan. Based on the revised and current criteria for chronic migraine, Bill meets the criteria for chronic migraine. His total headache days/month over the past three months is 16 to 18 and at least nine a month respond to the triptan which is considered evidence that his headaches are indeed migraine. Significantly, he has a history of migraine and has “transformed” into chronic migraine based on a review of his recent headache history.

The term chronic daily headache should no longer be used as a diagnostic entity; rather, the specific headache type that is chronic should be used in the diagnosis, such as chronic tension-type headache or chronic migraine. The definition of chronic daily headache was a general category that referred to anyone having a headache 15 days a month or more for three months or more.

How common is chronic migraine? Findings from a recent publication revealed there are over 9 million Americans, mostly women, suffering from chronic migraine. That represents about 3% of the U.S. population and over 20% of the U.S. Migraine Population older than 18 years.[3]

Clinical Pearl: Chronic migraine is a diagnosis defined by 15 or more days per month of headache for at least three months in an individual with migraine.

Identifying and Diagnosing Patients With Chronic Migraine

Patients often have their own headache diagnosis when they see you. Their diagnosis is often made because of key associations such as allergies and sinus symptoms (sinus headache), neck pain (tension headache), association with menses (“period” headache), and headaches cluster together in time (cluster headache). Research indicates that when patients present to us in primary care with a primary headache disorder that it is migraine 94% of the time. Therefore, good collaborative communication is critical for making the correct diagnosis. Taking a history that goes beyond the initial presenting symptoms is critical. In making a diagnosis of migraine look for—
1. Disabling headache – headaches that cause a person to alter or want to alter their function
2. Throbbing or pulsating quality to the headache
3. Nausea and/or vomiting
4. Sensitivity to light or noise
5. Predictable triggers (such as menses or stress or change in weather)
6. Stable pattern of headache for more than six months

If there is a stable pattern of headache for more than six months, then imaging studies are usually not indicated. Often there is family history of migraines helping to support the proposed genetic link.

Once the diagnosis of migraine is made, it can be divided into—

1. Episodic Migraine—less than 15 headache days a month
2. Chronic Migraine—15 or more days a month of headache (for three or more months)

Episodic migraine implies recovery of the nervous system in between migraine attacks.

Migraine can “transform” or “evolve” into a more frequent and more refractory pattern. The nervous system has less time to recover in between attacks. With time, some migraine patients never return to a “zero” or “no headache” level of functioning. These patients complain they have a headache every day or nearly every day.
There are many factors that can contribute to the evolution of chronic migraine including major life stress, mood disorders (such as depression and anxiety), sleep disorders, and medication overuse. Patients can move in and out of chronic migraine as some of these other circumstances (such as life stress) or medical conditions improve. Let’s take a look at a patient named Laura.
Q3. Laura, a 22-year-old female, just graduated from college. She has had a history of a two to three day per month migraine associated with some of her menses throughout college but lately experiences one to two migraine attacks per month outside her menstrual window. These other attacks are described as throbbing, worsen with activity, and associated with photosensitivity. Unlike her menstrual migraines, there is no nausea and on a scale of 0 to 10, they are about a 4 to 5 in pain. Her menstrual migraines are an 8 to 9 in severity and are longer in duration. These nonmenstrual migraines may last one to two days. Laura’s headache diagnosis is
   a. Menstrual migraine with tension-type headache
   b. Frequent episodic migraine
   c. Transforming migraine
   d. Chronic migraine

Laura has evolved from an infrequent episodic migraine pattern to frequent episodic migraine. Does she have chronic migraine based on her history?

Answer: No; her total number of headache days in a month is five to seven. To meet the criteria she would have to have 15 days or more a month of headache.

Could she evolve or transform into chronic migraine?

Answer: Yes. She is someone we need to work carefully with to prevent this from happening. Effective control of her acute attacks is critical and patient participation to work on lifestyle and prevention of transformation are management goals for her.

As stated previously, there are no diagnostic tests for migraine. Successful diagnosis and management depend entirely on the ability of the healthcare provider and the patient to communicate with one another. Closed-ended interviewing is less likely to align the patient and healthcare provider. Open-ended questions that allow patients to “tell their headache story” provide more open dialogue, provide useful information, and cause less frustration.

Q4. Open-ended interview techniques take more time than closed-ended interview techniques.
   a. True
   b. False

The American Migraine Communication Study showed that open-ended interview techniques take no more or less time than closed interview techniques.[4]
Examples of closed-ended questions:

- Is your pain throbbing?
- Is your pain unilateral?
- Do you have nausea?

Examples of open-ended questions:

- Tell me about your headaches?
- How do your headaches impact your quality of life?
- What kinds of things seem to trigger your headaches?

A helpful model to use for effective migraine communication has been developed. It is called the 5 “Ps” and can help guide the provider in an open-ended communication dialogue with the migraine patient. Useful information is obtained in an open-ended style which allows patients to “tell their story” and for the provider to make the correct diagnosis. In addition, this collaborative dialogue can help to stage the patient and guide appropriate management.

The 5 “Ps” for Effective Migraine Communication are shown below.

**Pattern**

Pattern refers to the frequency, duration, and any change in the headache. For example, the question may be “Can you tell me about the pattern of your headache?” or “How have your headaches been since your last visit?” or “Can you tell me about the frequency or any change in your headaches?” If the history is consistent with migraine, then the patient’s description of the pattern can help distinguish between—

1. Infrequent episodic migraine
2. Frequent episodic migraine
3. Transforming migraine
4. Chronic migraine
Or the pattern may suggest a nonmigraine headache such as a new-onset daily persistent headache, a cluster headache, or even an important secondary headache.

**Phenotype**

Phenotype refers to the description of the headache itself. Since patients can have more than one kind of headache, it can be helpful to ask, “Tell me what your worst headaches feel like” or “Tell me what you experience when your headache is at its worse.” Often the patient will describe a typical migraine attack and make it unnecessary to go through a checklist of all the ICHD criteria for migraine. A migraine patient may have tension-type headaches, probable migraine, or other headaches, but should be considered a migraine patient if his/her worst headaches are migraine. It is also useful to keep in mind that migraine can have many different presentations even in the same patient.

**Patient**

Here we focus on how patients feel in between their headache attacks; this can be referred to as the interictal period. The question could be, “What do you feel like between episodes of severe headache?”

Q5. If the patient responds to the question, “What do you feel like between attacks?” with “I never feel really good, even in between headaches. I feel like I have a headache almost every day and even when I don’t, I know one is coming. I don’t think I will ever get better.”—then the likely diagnosis is

a. Infrequent episodic migraine  
b. Frequent episodic migraine  
c. Transforming migraine  
d. Chronic migraine

For patients with chronic migraine, they often report never feeling really good even in between attacks. They often present with comorbid depression and feel hopeless about their headache condition as well as their life in general. These patients are often very draining for staff and providers.

**Pharmacology**

In this part of the dialogue we ask about what medication is used to treat the headaches. An open-ended question could be “How do you treat your headaches?” During this part of the collaborative interview we can get valuable details that may reveal excessive medication usage or inappropriate medication usage. For example, the patient may respond with “I take hydrocodone ... it is the only thing that works!”

In general, if the same acute medication is used more than two times a week on a regular basis, it can transform an episodic migraine pattern into medication overuse headache.
Q6. Medications that have been associated with medication overuse headache include all of the following except

a. Butalbital  
b. Hydrocodone  
c. Triptans  
d. Caffeine  
e. Dihydroergotamine (DHE)  
f. Analgesics

Medication overuse headache is defined as a headache pattern that occurs in response to overuse of an acute medication. By definition, the headache occurs if the medication of overuse is not taken; the headache responds to the medication of overuse when taken. However, often the patient never goes back to a zero baseline of headache. Medications that frequently are associated with medication overuse headache (formerly referred to as rebound headache) include narcotics such as hydrocodone, barbiturates such as butalbital, analgesics, and caffeine. Triptans and ergotamines have also been associated with the development of medication overuse headache.

In contrast, dihydroergotamine (DHE) has not been linked to medication overuse headache and, in fact, is often used to treat medication overuse headache.

Medication overuse headache is important to recognize and diagnose in the primary care setting as both acute and preventive treatments are less likely to be successful in the presence of medication overuse. These patients can be very challenging to treat in a busy primary care setting and may need to be referred to a headache specialist.

Clinical Pearl: Medication overuse headache is a different diagnostic headache syndrome than chronic migraine. The approach to medication overuse headache needs to involve elimination or marked reduction in the use of the offending medication.

Precipitants

In this part of the dialogue, the patient is asked about triggers or precipitants he or she feels are contributing to the migraine headache attacks. Common triggers are hormonal (in women), stress, weather changes, dietary triggers, disruption in sleep, and lifestyle issues such as alcohol or lack of exercise. An open-ended question could be “Are you aware of events or triggers that put you at risk for having a migraine?” or “What triggers have you noticed from your headache diary?” Allowing patients to openly express what they think are the precipitants can be very helpful and patients feel their concerns are validated. In this part of the migraine communication, additional questions can be asked about lifestyle such as, “How is your diet? How are you sleeping? Are you on a regular exercise program?”
Developing an Effective Management Plan

Effective management plans for our migraine patients require a correct diagnosis. Correct diagnosis results from good collaborative communication. Once the diagnosis of migraine is made, the patient can be placed into one of the following four stages[5]:

Stage 1—Infrequent episodic migraine
Stage 2—Frequent episodic migraine
Stage 3—Transforming migraine (frequent, progressing)
Stage 4—Chronic migraine

Management can be tailored according to the Stage of Migraine that a patient is in. The following lists the emphasis of treatment based on the staging[5]:

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<tr>
<th>Stage 1 – Properly executed acute treatment</th>
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<tr>
<td>Early intervention for acute attacks</td>
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<td>Lifestyle modification</td>
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<th>Stage 2 – Prevention of transformation</th>
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<tr>
<td>Patient participation</td>
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<td>Control of acute attacks</td>
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<th>Stage 3 – Prevention of chronification (progression)</th>
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<tr>
<td>Careful management of migraine</td>
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<td>Identification and treatment of comorbidity</td>
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<tr>
<th>Stage 4 – Management of chronic migraine</th>
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<tr>
<td>Consider consultation or referral</td>
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There are many medications used for migraine prevention including antidepressants, antihypertensives, and antiepileptics. The four medications that are FDA approved for migraine prevention include

1. Propanolol
2. Timolol
3. Divalproate sodium
4. Topiramate
To date, the only medication approved for chronic migraine is onabotulinumtoxinA. Instituting an effective migraine preventive medication can reduce migraine frequency and severity and may help prevent patients from evolving or transforming into chronic migraine.

In summary, being aware of the specific diagnostic criteria for chronic migraine can help with correct diagnosis of the migraine patient. Correct diagnosis can lead to more effective treatment plans including preventive management of the patient who is at risk of transforming into chronic migraine. Collaborative interviewing, including the use of open-ended questions, can lead to greater patient and provider satisfaction. A better appreciation of the level of burden and disability in an individual migraine patient can result from asking the patient how he or she feels both during and in between headache attacks. Lastly, staging patients based on frequency and burden of migraine can result in improved patient care. Ultimately, prevention of migraine progression is an attainable goal for primary care providers. Both the healthcare provider and migraine patient benefit.

References


