Tools for Managing Migraine

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Abstract

Migraine diagnostic rates are less than 50%. To assist clinicians with screening, diagnosis, and management, migraine tools have been developed; this article reviews these tools. For diagnosis, ID Migraine, Impact-based Recognition, 3-Question Headache Screen, and the Menstrual Migraine Assessment Tool are summarized. Calendars and diaries are discussed as ways to help patients identify their pattern of headaches and the effectiveness of the treatment plan. Impact and disability are measured by Migraine Disability Assessment (MIDAS), Headache Impact Test 6 (HIT-6), Migraine Assessment of Current Therapy (Migraine ACT), and Staging Questionnaire. The goal of these tools is to assist migraineurs to become responsible decision-makers in terms of therapeutic choices. Tools enable individuals to see how changes in lifestyle as well as medication can lead to health between less frequent attacks of migraine.

Keywords

Migraine tools, ID Migraine, menstrual migraine, calendars, diaries, Migraine Disability Assessment (MIDAS), Migraine Assessment of Current Therapy (Migraine ACT), Headache Impact Test 6 (HIT-6), staging questions

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Numerous 'tools' have been developed for clinicians and patients that elucidate important elements of migraine diagnosis and management. Just as the stethoscope captures the dynamics of the working heart, migraine tools are an external verification of the migraineur's level of pain and disability. Properly utilized, 'migraine tools' have the potential to: improve communication between patient and clinician; increase the efficiency and quality of migraine care; quantify and objectify important aspects of migraine; improve patient adherence to treatment plans; and document patient outcomes. Despite these advantages, migraine tools have not been widely adopted by the medical or patient community. The reasons for this are complex, but may relate to migraine being historically considered as recurrent episodes of pain rather than a chronic condition with the potential to evolve into a debilitating pain disease. As such, longitudinal models of migraine care have only recently been adopted by clinicians whereby both short- and long-term therapeutic needs are defined and managed.

Migraine tools have been promoted to clinicians as vehicles to improve efficiency and limit the time required for migraine evaluation. In this article we propose that migraine tools may be more appropriately utilized as a component of longitudinal care. In this manner, specific migraine tools become the focus of specified medical visits and information gleaned from these tools can be integrated into ongoing care. With this in mind, migraine tools can be divided into those that are useful in further defining episodes of migraine and those designed to define therapeutic need.

Tools to Define Migraine

Epidemiological studies in the early 1990s demonstrated that in the general public the prevalence of migraine was approximately 18% for adult women and 6% for adult men.[1] However, diagnostic rates for migraine were less than 50%.[2] At that time, newly developed diagnostic criteria by the International Headache Society (IHS) were assumed to improve diagnostic rates for migraine. A decade later, a second nearly identical study was repeated demonstrating only modest improvement for diagnostic rates despite the widespread promotion of diagnostic tools and continuing medical education on migraine diagnosis. This perplexing paradox may be explained by understanding that diagnosis does not necessarily translate into seeking or receiving medical care. In reality, diagnostic tools for migraine do not provide a definitive answer, but instead need to be considered a catalyst that leads to a 'migraine conversation' that ties together diagnosis and need for care.

The diagnostic criteria established by the International Headache Society (IHS)[3] are considered the 'gold standard' for migraine diagnosis. Diagnostic tools may be useful as an abbreviated definition of migraine or to focus attention on important aspects of migraine beyond those defined by IHS diagnostic criteria, especially the impact an attack of migraine has on the sufferer. Several diagnostic tools for migraine have gained acceptance for screening populations at risk for migraine. In addition, they have been promoted to the general public to encourage

medical consultation. Providers have also been encouraged to use diagnostic screeners in waiting rooms or to have them completed by patients before the initial headache evaluation.

An alternative use for diagnostic screeners is as an education tool to clarify the diagnosis of migraine, for example assisting patients in understanding which features of the migraine syndrome are important in determining which headaches are migraine. This may be particularly useful in patients believing that some of their headaches are 'sinus' or 'tension' headaches even when the headaches fulfill IHS criteria for migraine. Patients can evaluate several of their headaches prior to a follow-up visit and the information they collect can then be used as a focal point of communication around migraine diagnosis. In this way, the migraine diagnostic tool can individualize the diagnostic process for the patient. Several diagnostic tools that are available to clinicians and patients are described below.

ID Migraine[4]

Among patients in a primary care waiting room who had headaches that interfered with their ability to work, study, or enjoy life or said they wanted to discuss their headaches with a physician, the following three questions identified those with likely migraine.

1. Has a headache limited your activities for a day or more in the last three months?
2. Are you nauseated or sick to your stomach when you have a headache?
3. Does light bother you when you have a headache?

A positive response to two of these three questions has an 81% sensitivity and 75% specificity for IHS diagnosis of migraine; in addition, the ID Migraine Screener was found to have a positive predictive value of 93.3% in the primary care setting. ID Migraine is widely used because it is simple and can be self-administered. ID Migraine can effectively illustrate to patients that migraine diagnosis requires more than just a headache; in addition, it often helps patients confirm family histories of migraine.

Impact-based Recognition[5]

This migraine recognition tool was one of the earliest tools developed for migraine recognition and is somewhat more complex than the others. It can be readily adapted as a template for patient education and understanding several key components of migraine. Unlike the other diagnostic tools, Impact-based Recognition is not scored. However, clinicians can use patients' answers as education points in subsequent office visits.

1. How do headaches interfere with your life? The patient's answer defines disability, establishes rapport, and directs intensity of therapeutic intervention.
2. How frequently do you experience headaches of any type? This differentiates episodic from chronic migraine, differentiates migraine from short duration headaches such as cluster headache, and helps identify the need for preventive interventions.
3. Has there been any change in your headache pattern over the last six months? A change suggests the need for in-depth evaluation, whereas no change reassures that serious underlying disease is unlikely.
4. How often and how effectively do you use medication to treat headaches? This answers the possibility of medication overuse and the effectiveness of the treatment strategy being used by the patient.

A survey of 315 physicians who completed the Continuing Medical Education form of Patient-Centered Strategies indicated that 65% were using this questionnaire as a screening tool for migraine and 95% used the publication to become better prepared to treat patients with migraine.[6] These questions were incorporated into an international consensus criteria diagnostic screen for headache patients in primary care. The assumption was that the majority of headache patients seeking medical consultation in primary care have migraine.[7] This point was later confirmed in an international study authored by Tepper where it was reported that over 90% of patients seeking evaluation for headache in primary care were suffering from migraine.[8]

3-Question Headache Screen[9]

The screening tool was studied in a large (3,014-subject) clinical trial where positive responses to the screener were compared with IHS diagnostic criteria and clinical impression. The screening tool identified 78% of subjects with IHS migraine and 74% of subjects diagnosed by clinical impression.

1. Do you have headaches that interfere with work, family, or social functions?
2. Do your headaches last at least four hours?
3. Have you had new or different headaches in the last six months?

A positive answer to questions 1 and 2 with a negative answer to question 3 was considered positive for migraine. Even though the screening tool may have utility in population-based studies, it is less effective as an aid to communication compared with ID Migraine or the Impact-Based Recognition Questionnaire.

Menstrual Migraine Screener

On the surface it would seem that associating migraine with menses would be straightforward. However, this is not always the case and can be particularly challenging when migraines are frequent or menses is unpredictable. The Menstrual Migraine Assessment Tool is a useful tool to establish a woman's awareness of an association of migraine and menses. This tool can be useful in deciding which women need to be provided with specific diaries or calendars for tracking migraine and menses and the effectiveness of therapeutic strategies directed at menstrually related migraine. Diagnostic sensitivity can be augmented by providing women with the definition of menstrually related migraine.

Menstrual Migraine Assessment Tool[10]

Among patients in an obstetric/gynecology waiting room, the following three questions elicited responses that indicated that the individuals were likely to have migraine related to menses.

1. Do you have headaches that are related to your period (i.e. occur between two days before the onset of your period until the third day of your period) most months?

Table 1: Staging Questions[15]

How many days per month do you have headaches?	
Stage 1:	2 or less
Stage 2:	3 to 8
Stage 3:	9 to 14
Stage 4:	15 or more
Does the medicine you take for headaches stop them?	
Stage 1:	Yes, most of the time
Stage 2:	Rely on medicine to get through the day
Stage 3:	Takes the edge off but the headache is still there
Stage 4:	Nothing works
Do you have physical problems other than headaches?	
Stage 1:	No, I'm healthy
Stage 2:	At times, I feel down, jittery, irritable, anxious with upset stomach
Stage 3:	Some aches and pains; bloating; and I feel depressed
Stage 4:	Yes, depression, fibromyalgia, insomnia, IBS, weight problem; I'm falling apart
How do your headaches interfere with your life?	
Stage 1:	They're a nuisance that slows me down
Stage 2:	I struggle through them and force myself to go on
Stage 3:	I'm missing work, family and social functions a lot
Stage 4:	My life revolves around headaches
How many days per month do you feel normal?	
Stage 1:	25, most of the time
Stage 2:	15, half the time
Stage 3:	5 to 10
Stage 4:	Zero

Pre-clinical	Early Clinical	Clinical	Post-clinical
5	10	15	20

Stage 1 patient: Episodic headaches that generally respond to medication. Medication may not be working as well as before but patient is still working, going to school, and functioning.
Stage 2 patient: Frequent (three to eight per month) episodic, disabling headaches not necessarily relieved by sleep or self-treatment. Multiple headache presentations. Associated with headaches are symptoms of anxiety, depression, non-head pain, or gastrointestinal disorders that have occurred on a recurrent episodic basis throughout the patient's life. Reliance on medication may be present.
Stage 3 patient: Frequent headaches (nine to 14 per month), taking acute medicine more than two times a week. Patient may be taking over-the-counter medicine daily. Medication is not working as well as before and patient is beginning to miss work or other activities that concerns him or her. Psychological, gastrointestinal, and/or muscle pain diagnoses are often present and chronic (>1 year's duration). Requires appointment with a psychologist for education and biofeedback training. The patient needs to be told that education and biofeedback are necessary parts of the treatment package for headaches as frequent as these.
Stage 4 patient: Chronic daily headache that incapacitates person. Medicine does not work and other physical problems are present. Requires an immediate intensive program with appointments with psychology and physical therapy.

2. When my headaches are related to my period, they eventually become severe?
3. When my headaches are related to my period, light bothers me more than when I don't have a headache?

These questions can be used as a series of communication points upon which the clinician and patient can increase their understanding of menstrual migraine. This can in many instances translate into specific therapeutic interventions that reduce the overall impact of migraine.

Tools to Define Patients with Migraine

Calendars

Calendars are arguably the most important assessment tool used to manage migraine patients. They are a reliable method for establishing the pattern of migraine and other primary headaches that a patient is experiencing. From the calendar the clinician and patient can easily, accurately, and rapidly assess how many days of migraine and non-migraine headache a patient experiences per month. This can be used to determine need for preventive medications or evaluate the benefit of specific therapeutic interventions. Calendars can also be used to assess acute medication effectiveness and establish the quantity of acute medication used by the patient each month. This can help identity medication-overuse syndromes early in their evolution. Many calendars also assess functional status of the patient during and between migraine attacks. They are simple to use and should be a communication focus in nearly all office visits for migraine. Excellent sources for migraine calendars can be found at www.headaches.org and www.ache.org

Diaries

Diaries are also commonly employed as a migraine tool. Historically, they were recommended to patients as a means of uncovering migraine triggers. Patients would record events such as diet, stress, sleep, weather, or, for women, menses in an effort to correlate these events as a trigger for migraine. Frequently, these diaries were voluminous, difficult to interpret, and time-consuming. Another option is to define the goal of a diary as a means to explore whether a specific factor affects the frequency of migraine for a specified period of time. The resulting diary would be a focus of communication during the next office visit. For example, a diary might explore the role of a specific stress (such as job or diet) as it relates to migraine. Over time, other potential risk factors and triggers can be explored with a diary in a sequential manner. Essentially, a diary facilitates the detective work involved in discovering the association of migraine and the 'environment' as it relates to risk factors and triggers.

Tools to Measure Impact and Disability

Migraine Disability Assessment Questionnaire

The Migraine Disability Assessment (MIDAS) Questionnaire[11] measures headache-related disability based on five disability questions from three domains of activity: employment (job or school), household work, and family, social, and leisure activities. The score is obtained by summing the number of days of missed activities and reduced productivity over three months. Scores range from grade I (0–5), minimal or infrequent disability; grade II (6–10), mild disability; grade III (11–20), moderate disability; and finally to Grade IV (21+), severe disability. Combining the MIDAS and a calendar is an excellent method to ensure accuracy.

Headache Impact Test

The Headache Impact Test (HIT-6)[12] lists six questions to measure the impact that headaches have had on the person's life over the past four weeks. The patient answers each of the six related questions using one of the following five responses to which category weights have been assigned: never = 6, rarely = 8, sometimes = 10, very often = 12, or always = 14. Scores range from less than 50, little or no impact, to 60 or more, very severe impact, where a higher score indicates a greater impact of headache on the daily life of the participant. Disabling headaches affect not only the individual but also colleagues, employer, family, and others depending on them to function at a certain level. The US population mean for recent headache sufferers is 50, with a standard deviation of 10. A score difference as little as three points is noteworthy; five points is highly significant.

Migraine Assessment of Current Therapy Questionnaire

The Migraine Assessment of Current Therapy (ACT) Questionnaire[13] uses four yes or no questions to determine whether acute therapy is effective or requires modification. The domains explored are impact, global assessment of relief, consistency of response, and emotional response. The questions are: When you take your treatment:

1. Does your migraine medication work consistently, in a majority of attacks?
2. Does your headache pain disappear within two hours?
3. Are you able to function normally within two hours?
4. Are you comfortable enough with your medication to be able to plan your daily activities?

A single no response indicates that acute therapy may need to be changed. This questionnaire is an effective tool to open a dialogue on the goals and use of acute therapy. The ACT can be given periodically especially when effectiveness of medication has changed or comorbidities are questioned. Comparing the patient's responses to this questionnaire over a period of time can enrich the discussion and treatment strategies, highlighting that variations in migraine presentations have special treatment needs.

Staging Migraineurs[14]

Migraine is a chronic potentially progressive neurological disease. Establishing progression or regression of migraine over time is critical to measuring the effectiveness of preventive therapy or lifestyle adjustment on disease modification. Migraine impact often occurs between attacks as well as between individuals. The true severity of migraine may be more accurately measured by assessing function between attacks as well as by the intensity of the headache during an attack. The question is how pervasive is migraine to the physical and mental health of the person with migraine. To measure this pervasiveness, the Staging Questionnaire, consisting of five questions, was created and validated (see *Table 1*). Stage 1 (score of 5, pre-clinical) describes the person who can manage her own headaches. Stage 2 (score of 10, early clinical) suggests that the individual probably requires a medical consult, especially for migraine-specific medication. Stage 3 (score of 15, clinical) places the patient in migraine transformation, where neurological impairment continues between attacks, after the headache stops. Stage 4 (score of 20, post-clinical) identifies the chronic migraineur who has few headache-free days, other physical and psychological symptoms, and migraine is developing or has developed into a chronic disease.

Migraine Tools and Collaborative Care

The premise of collaborative care is that certain chronic diseases are best managed by providing education that encourages patients to become proficient in making effective therapeutic decisions about their own care. In the case of migraine, patients are encouraged to make appropriate decisions about which headache to treat, when to treat them, what to treat them with, and what constitutes successful management. In this model, the therapeutic relationship between the healthcare professional (HCP) and the patient over time refines therapeutic decision-making. Considering that most patients will manage migraine for decades of their life, it is reasonable to assume that patients need to become responsible and proficient decision-makers of their own migraine pattern. Even though the HCP may be the expert on the subject of migraine, it is the patient that is the expert on her own migraine. The relationship forged through this model of care is used as a vehicle to understand what each of the 'partners' has to contribute and how this knowledge can be synthesized into an effective and dynamic management plan. The use of management tools can be central to successful collaborative care.

Summary

Because the diagnosis of migraine relies on a detailed history provided by the patient and there is no objective diagnostic test to objectify the communication, there is room for uncertainty and doubt. Tools for measuring the symptoms and impact of migraine tend to reassure both physician and patient by adding an element of credibility. This knowledge is important during the initial consultation for accurate diagnosis, but also during follow-up appointments as a measure of the effectiveness of the treatment plan to reduce the frequency of attacks, identify triggers, and to modify the overall pattern of migraine. Tools empower the migraineur to see how changes in behavior as well as medication can lead to health between less frequent attacks of migraine. ■

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