

Chronic Migraine: How to Diagnose and Manage

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Headache is the most common neurological presentation to general practitioners (GP) and neurologists.¹ The impact of headache to society is so obvious that 80,000 subjects out of 100,000 general population have suffered from headache in the past year. Among these sufferers, 20,000 people require self-prescribed analgesic drugs, and 9,000 patients seek medical advice. There are several causes of headache diagnosed by physicians, but only 10 people out of 100,000 turn out to be patients with brain tumour.² The most common causes of headache are migraine and tension type headache. These two conditions can cause long standing suffering of headache or chronic headache which this brings patients seeking for medical attention and management. Migraine is a chronic neurological disease characterized by episodic attacks of headache and associated symptoms. Migraine prevalence is approximately 18% in women and 6% in men.^{3,4}

Terminology

Migraine is thus the most common reason for a patient to see their GP for disabling headache.⁵ The economic burden of migraine in terms of income lost is more than the sum of expenses of asthma and brain tumour.⁶ Around 4.5% of the general population of Europe has headache on 15 days or more per month,⁷ and this condition includes migraine, tension-type headache and chronic daily headache. In 2006, a consensus on the nosology of migraine (The International Classification of Migraine Disorders-second edition (ICHD-II) established the new term of chronic migraine.⁸ This condition is diagnosed when patients experience headache on 15 days or more per month for at least 3 months, where 8 of these 15 days meet the criteria for typical migraine or respond to a migraine specific treatment. Migraine specific treatments are triptans, serotonin 5 HT 1B/1D receptor agonists or ergotamine derivatives.^{9,10} Patients must not overuse acute attack medicines such as triptans, ergots or codeine on 10 days or more per month (i.e. excluding medication overuse headache).¹¹

This terminology (chronic migraine) has replaced previously used terms of transformed migraine, mixed

headache/migraine or tension-vascular headache which are confusing and imprecise terms. The ICHD-II emphasized on the diagnosis of chronic migraine by only insisting on 8 of 15 headache days which have the criteria of typical migraine. Other days may have less features or they may be less troublesome, but this does not mean that the patient has two problems (i.e. migraine and tension type headache). Differentiation of migraine and tension-type headache is tabulated in Table 1 according to a practical approach.¹²

Burden of chronic migraine

Chronic migraine has several impacts on sufferers much more than episodic migraine. It can be very severe and lead to a significant burden, more time off work, a higher risk of unemployment, relationship difficulties, mood and behavioral changes and eventually family problems.¹³ Appropriate intervention with acute and prophylactic treatments could reduce the impact of chronic migraine on patients and society as a whole.

Patients with episodic migraine may develop chronic migraine in the later stage while patients with chronic migraine can recover due to natural history or through treatment. Migraineurs who experience frequent attacks or who have a high migraine disability score or those who tend to overuse acute medications especially opioids and barbitulates are at an increased risk of developing chronic migraine.¹⁴ Obese patient and those who experience allodynia and sleep disturbances are also at an increased risk of developing chronic migraine.¹⁵ The number of patients with chronic migraine remains static at between 2.5% and 4.6% of the general population.¹⁶

Deferential diagnosis of medication overuse

Medication overuse or medication overuse headache (MOH) are interchangeable terms of headache due to medication overuse.¹¹ Cross sectional studies in patients treated with analgesics for arthritis and various forms of gastrointestinal problems demonstrate that about 10% of patients who are taking analgesics have daily or nearly daily headaches.^{17,18} Several data suggest that some migraineurs may be especially at risk of headache induction from analgesics.^{19,20} The diagnosis of MOH is not easy. A careful history and a careful diary of headache and analgesics use are vital. Withdrawal of analgesics in a gradual approach is more effective than abrupt withdraw especially from a long acting non steroidal anti-inflammatory drug. Preventive treatments of the underlying condition (e.g. arthritis,

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TABLE 1. Differentiation of migraine and tension-type headache according to practical approach.

	Migraine	Tension-type headache
I) Attack characteristics	<ol style="list-style-type: none"> 1. Lateralised/less generalised 2. Throbbing 3. Made worse by movement 4. Associated with <ol style="list-style-type: none"> a) Nausea b) Photophobia c) Phonophobia 	<ol style="list-style-type: none"> 1. Generalised 2. Non-throbbing 3. No effect of movement 4. Associated with <ol style="list-style-type: none"> a) Nil
II) Patient characteristics	<ol style="list-style-type: none"> 1. Family history: present 2. Triggers <ol style="list-style-type: none"> a) Sleep b) Eating c) Stress/relaxation d) Exertion e) Hormonal change f) Weather change 	<ol style="list-style-type: none"> 1. Family history: absent 2. Triggers <ol style="list-style-type: none"> a) Stress

abdominal pain, back pain) is essential while tapering off the analgesics in MOH.²¹

Chronic daily headache includes 3 conditions, a) chronic tension-type headache, b) MOH, and C) chronic migraine. Therefore we should clarify the terminology and be strict to the criteria for the diagnosis of these conditions as a differential diagnosis of migraine.

Diagnostic approach

The diagnostic approach for chronic migraine is practically shown in Fig 1.

Management

I) Acute attack treatment

Effective migraine treatment begins with making an accurate diagnosis by ruling out alternative causes. An appropriate investigation is seldom required in most patients because the diagnosis of migraine relies on clinical features rather than investigations. An accurate diagnosis should be established before commencing treatment because a

migraine specific drug (i.e. triptan) may be without value or even harmful if used to treat a condition that looks like, but is not, migraine. For example, a patients acute symptomatic headache due to stroke or subarachnoid hemorrhage may respond to triptan, but the neurological deficit may be adversely influenced. Once a diagnosis has been made, patients must be informed with full explanation and this will benefit and have a big impact on the outcome and doctor-patient relationship. Most patients are relieved to find out that their headache is neither secondary to an organic disorder nor psychogenic.

Acute treatment attempts to relieve or stop the progression of an attack or pain and impairment once an attack has begun. The patients most disturbing symptoms must be dealt with in the most appropriate way. Patients have the expectation and the right to participate in their treatment especially informing about the medications adverse effects. Migraineurs should be educated about their condition and its treatment and encouraged to participate in its management. Provoking factors, such as menses, missed meals, or too little sleep should be identified.

A comprehensive headache treatment plan includes (1) education and reassurance; (2) avoiding triggers to prevent attacks; (3) non-pharmacological treatments, such as relaxation and biofeedback, and life style regulation, such as maintaining a regular schedule, getting adequate sleep, exercise, and stopping smoking; (4) treating the acute attack to stop its progression and relieve pain and impairment; (5) long-term preventive therapy to reduce attack frequency, severity, and duration; (6) physical and alternative medicines when appropriate; and (7) periodic reassessment of the treatment plan.

Migraineurs are physiologically and perhaps psychologically hyperresponsive to a variety of internal and external stimuli, including hormonal changes, dietary factors, environmental changes, sensory stimuli, and stress. The migraine triggers are listed in Table 2.

Medication for an acute attack can be specific or nonspecific. Nonspecific medications are used to control the pain and associated symptoms of migraine as well as other pain disorders, while specific medications control

TABLE 2. Migraine triggers.

I. Diet	<ol style="list-style-type: none"> 1. Hunger 2. Alcohol 3. Additives 4. Certain foods
II. Chronobiological	<ol style="list-style-type: none"> 1. Sleep (too much or too little) 2. Schedule change 3. Hormonal changes 4. Menstruation
III. Environmental factors	<ol style="list-style-type: none"> 1. Light glare 2. Odors 3. Altitude 4. Weather Change
IV Head or neck pain	<ol style="list-style-type: none"> 1. Of another cause
V. Physical exertion	<ol style="list-style-type: none"> 1. Exercise 2. Sex
VI. Stress and anxiety	<ol style="list-style-type: none"> 1. Letdown
VII. Head trauma	

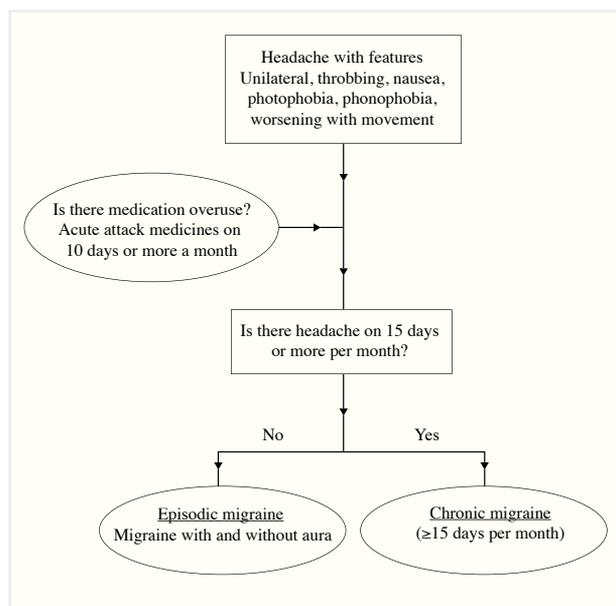


Fig 1. Practical classification of migraine.

the migraine attack, but are not useful for non-headache pain disorders. Nonspecific acute headache medications include analgesics (NSAIDs and combination analgesics), antiemetics, opioids, corticosteroids, and DA antagonists. Specific acute headache medications include ergotamine, dihydroergotamine (DHE), and the selective 5-HT₁ agonists (triptans). It is advisable to develop a treatment strategy for headaches of different severities, using one or more of these drug classes which includes initial treatment, a backup treatment, and a rescue treatment, taking into consideration the patients age and any coexistent illnesses, the migraine type, and the severity, frequency, disability, and associated features (including nausea and vomiting) of the attack.

A list of NSAIDs is in Table 3.

The goal of preventive therapy is to reduce the frequency, duration, or severity of attacks. In addition, reduced disability and improved function and responsiveness to acute attack treatment may result. Preventive treatment may also prevent episodic migraines progression to chronic migraine and result in health care cost reductions.

Preventive treatment can be either preemptive, short-term (miniprophylaxis), or chronic. Preemptive treatment is used when there is a known headache trigger, such as exercise or sexual activity. Patients can be instructed to pretreat before the exposure or activity. For example, single doses of indomethacin can be used to prevent exercise-induced migraine. Short-term prevention is used when patients are undergoing a time-limited exposure to a provoking factor, such as ascent to a high altitude or menstruation. These patients can be treated with daily medication just before and during the exposure.

Prevention is not being used to the extent which it should be and only 13% of all migraineurs currently use medication as a preventive therapy to control their attacks.²² According to the American Migraine Prevalence and Prevention (AMPP) Study, 38.8% of patients with migraine should be considered for (13.1%) or offered (25.7%)

migraine preventive therapy on the basis of their migraine frequency and disability associated with the headaches.²³

The major medication groups for preventive migraine treatment include beta-adrenergic blockers, antidepressants, calcium channel antagonists, serotonin antagonists, anticonvulsants, NSAIDs, and others (including riboflavin, minerals, and herbs). If preventive medication is indicated, the agent should be preferentially chosen from one of the first-line categories, on the basis of the drugs side effect profile and the patients coexistent and comorbid conditions.

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TABLE 3. NSAIDs: Chemical Classification.

I. Salicylic acids	
1.	Aspirin
2.	Choline magnesium salicylate
3.	Salsalate
4.	Sodium salicylate
II. Arylpropionic acids	
1.	Ibuprofen
2.	Naproxen
3.	Fenoprofen
4.	Ketoprofen
5.	Flurbiprofen
6.	Oxaprozin
III. Indole-heteroaryl acetic acids	
1.	Tolectin
2.	Indomethacin
3.	Diclofenac
4.	Sulindac
5.	Ketorolac
IV. Fenamic acids	
1.	Mefenamic acid
2.	Meclofenamate
V. Enolic acids	
1.	Phenylbutazone
2.	Piroxicam