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Revised guidelines of the French Headache Society for the diagnosis and management of migraine in adults. Part 1: Diagnosis and assessment

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ABSTRACT

The French Headache Society proposes updated French guidelines for the management of migraine. The first part of these recommendations is focused on the diagnosis and assessment of migraine. First, migraine needs to be precisely diagnosed according to the currently validated criteria of the International Classification of Headache Disorders, 3d version (ICHD-3). Migraine-related disability has to be assessed and we suggest to use the 6 questions of the headache impact test (HIT-6). Then, it is important to check for risk factors and comorbidities increasing the risk to develop chronic migraine, especially frequency of headaches, acute medication overuse and presence of depression. We suggest to use a migraine calendar and the Hospital Anxiety and Depression scale (HAD). It is also necessary to evaluate the efficacy and tolerability of current migraine treatments and we suggest to systematically use the self-administered Migraine Treatment Optimization Questionnaire (M-TOQ) for acute migraine treatment. Finally, a treatment strategy and a follow-up plan have to be proposed. Guidelines for pharmacological and non-pharmacological treatments are presented in the second and third part of the recommendations.

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1. Introduction: Why should we be concerned by migraine?

Migraine is the second most common neurological disease after tension type headache, but many affected patients remain undiagnosed and undertreated. The prevalence of migraine is 14,4% with a peak between 35 and 39 years, 30% of women and 15% of men being affected in this age group [1]. In France, one in every five persons aged $\geq$ 18 years (21.3%) has migraine satisfying the diagnostic criteria of the International Classification of Headache Disorders, 3d version (ICHD-3) [2,3].

Migraine is a primary headache disorder that should no longer be considered as benign because it is the second cause of years lived with chronic disability after low back pain, and even the leading cause in individuals aged < 50 years [1]. Patients with migraine have a markedly reduced health-related quality of life as compared to healthy persons, both during and between attacks, because the disorder has negative impacts on patients' work performance, household tasks, leisure time activity [4] and family relationships [5]. In addition, migraine leads to considerable costs, including direct costs of health care and treatments, and indirect costs of absenteeism and reduced work productivity. The burden of migraine culminates in patients with chronic migraine, formerly called ''chronic daily headache'' or ''transformed migraine'' [6]. Migraine is an independent vascular risk factor [7], and patients with migraine with aura have a two-fold increased risk of ischemic stroke [8]. Although its exact mechanisms are incompletely deciphered, migraine is a neurovascular condition due to the interplay of complex genetic factors with multiple environmental factors.

2. Methods

The French Headache Society has prepared, revised guidelines to provide healthcare professionals with practical and up to date recommendations to optimize diagnosis and treatment of migraine, with the aim of improving the quality of life of affected patients and their relatives. The first part presents guidelines about the diagnosis and assessment of migraine. The second and third parts respectively present guidelines about pharmacological and non-pharmacological treatments of migraine [9] [10].

2.1. Objectives

These recommendations were elaborated under the auspices of the French Headache Society (*Société Française d'Etude des Migraines et Céphalées, SFEMC*) and update the previous guidelines [11,12]. They summarize and evaluate available evidence with the aim of assisting all health care professionals supporting patients with migraine in selecting the best management strategies. These recommendations concern adult patients with migraine.

2.2. Guideline development

The development process consisted in five stages:

- literature review within each writing sub-groups (writing group members and invited experts), ii) draft update within each sub-groups;
- review of the whole draft by the writing group;
- review by the reading group;
- final editing by the writing group in the light of all comments.

Each sub-group was responsible for the literature review focusing on five key topics: ''Diagnosis and assessment of migraine,'' ''Acute migraine treatment'', ''Prophylactic treatment'', ''Specific situations in women with migraine'' and ''Non-pharmacological approaches''. The literature review on ''Diagnosis and assessment of migraine'' and ''Pharmacological treatment'' was conducted since previous French guidelines, as several authors (ADo, CL, MLM) were involved in both works and as the same methodology was used. For topics that were not covered by the previous recommendations (e.g. neuromodulation, other non-pharmacological approaches), we searched for articles published since MEDLINE was launched in 1966.

We first graded the levels of evidence in three categories ''High = We are confident that the true effect lies close to the estimate given by the evidence available'', ''Moderate = We are moderately confident in the effect estimate, but there is a possibility it is substantially different'', ''Low = Our confidence in the effect estimate is limited. The true effect may be substantially different''. Secondly, we provided the strength of recommendation grades for clinical implication [13]: ''Strong = Benefits clearly outweigh risks and burdens for most patients = Can apply to most patients in most circumstances'', ''Moderate = Benefits clearly outweigh risks and burdens for most patients = Can apply to most patients, but there is a chance the recommendation may change with more research'', ''Weak = Benefits clearly outweigh risks and burdens for most patients = Can apply to most patients, but there is a good chance the recommendation could change with more research'' or ''Not recommended''. A reading committee scored the proposals by attributing a score ranging from 1 to 9 (best score). Any score below 5 had to be justified. All the proposals were finally deemed appropriate by the reading group (median $\geq$ 7). Relative (range: 5 to 9) or strong (range: 7 to 9) agreement of at least 90% of reading group members [14] was obtained for all recommendations.

2.3. Guideline panel composition

During the first stage, an expert writing group (CL, CR, ADo, ADu, GD, SDG, EGM, JM, XM MLM, PG, DV) and 14 invited experts were assembled to summarize the existing literature. Each sub-group was responsible for the literature review for its topic. A group of 24 interprofessional external reviewers and patients who were not involved in any aspects of the guideline development, was convened to conduct a final review of the guidelines. All active contributors to the review are named in the acknowledgments at the end of the article.

3. Diagnosis and assessment of migraine

The management of migraine aims to precisely diagnose migraine according to ICHD-3 criteria, check for risk factors for chronic migraine and comorbidities, assess migraine-related disability and severity, evaluate the efficacy and tolerability of current migraine treatments, and propose a treatment

Box 1. Relevant information to collect in a patient with migraine.

Headache history

- First consultation: diagnosis of the type of migraine
  - age at onset
  - location, type and intensity of pain
  - associated signs and symptoms before (prodromal phase), during, and between attacks
  - presence of aura symptoms and signs
  - duration of attacks
  - migraine triggers (true or supposed)
- Follow-up: check for the absence of a new type of headache
- Frequency of attacks (migraine calendar): number of monthly migraine days and headache days
- Risk factors for chronic migraine, comorbidities and emotional burden (HAD scale)
- Migraine impact and disability: HIT-6 scale, assess avoidance behavior against triggers
- Migraine medications
  - previous treatment: acute and preventative drugs used, efficacy, observance, tolerance, dose, duration of administration, reasons for stopping
  - current treatment (review the migraine calendar)

– acute treatment: efficacy, number of days with intake, tolerance, dose, timing and route of administration, respect of contraindications
– prophylactic medication: efficacy, observance, tolerance, dose, respect of contraindications
– non-drug treatment: type, efficacy

Medical history

- other cephalic or non-cephalic pain diseases
- other conditions and their medications
- women: desire of pregnancy, pregnancy, breast-feeding, contraception, menopause

Physical exam

- Blood pressure, heart-rate, weight and height (BMI), neurological exam

strategy and a follow-up plan (Box 1). The efficacy of the management is driven by the precision of the initial diagnosis, which relies on a careful and detailed initial assessment.

3.1. *Diagnose migraine attacks according to ICHD-3 criteria*

Patients can have attacks of migraine without aura and/or with aura. When patients have both types of attacks, both the diagnosis of migraine with and without aura must be given [2]. The pattern can change over the years.

3.1.1. *Migraine without aura*

Migraine without aura, the commonest type of migraine, is diagnosed when patients have had at least five attacks of migraine without aura and no any aura [2]. Attacks typically comprise an incapacitating headache associated with light and sound hypersensitivity and/or digestive symptoms, lasting 4 to 72 h when untreated (Box 2). Osmophobia is not included in the ICHD-3 criteria, but is considered as a highly specific symptom of migraine [15].

Typical pain is located in the frontal, orbital, temporal and occipital regions [16]. Migraine pain frequently involves the neck and the face [17–20] and is commonly misdiagnosed as occipital neuralgia (Arnold's neuralgia) or sinus headache respectively. Other non-painful symptoms comprise osmophobia, cutaneous allodynia, fatigue, yawning, concentration difficulties, mood changes, neck stiffness, pallor and dizziness [15]. In a subset of patients, pain is accompanied by cranial dysautonomic features such as conjunctival injection, lacrimation, nasal congestion, rhinorrhea, eyelid oedema, miosis and ptosis [21,22]. In the presence of dysautonomic symptoms, migraine attacks must carefully be distinguished from cluster headache attacks. All the non-painful symptoms, which can be very bothersome, may begin up to two days before the headache during the ''prodromal phase'' and may last following pain resolution during the so-called ''postdrome phase'' for up to two days. They might even persist in some patients between the migraine attacks.

Probable migraine without aura is diagnosed in patients with attacks fulfilling all but one criteria A-D for migraine without aura and not fulfilling ICHD-3 criteria for another headache disorder [2].

3.1.2. *Migraine with aura*

Migraine with aura is diagnosed when patients have had at least two attacks of migraine with aura, irrespective of the number of attacks of migraine without aura [2]. About one-third of patients with migraine have migraine with aura [23]. Typical aura comprises visual (> 90%), sensitive (30%), and more rarely, speech/language symptoms (Box 3). Each individual symptom usually lasts less than one hour. On the contrary of transient ischemic attacks, which symptoms start suddenly

Box 2. ICHD-3 diagnostic criteria for migraine without aura [2].

A. At least five attacks fulfilling criteria B-D
B. Headache attacks lasting 4–72 h (untreated or unsuccessfully treated)
C. Headache has at least two of the following four characteristics:
a. unilateral location
b. pulsating quality
c. moderate or severe pain intensity
d. aggravation by or causing avoidance of routine physical activity (eg, walking or climbing stairs)

D. During headache at least one of the following:
e. nausea and/or vomiting
f. photophobia and phonophobia

E. Not better accounted for by another ICHD-3 diagnosis.

Box 3. ICHD-3 diagnostic criteria for migraine with aura [2].

A. At least two attacks fulfilling criteria B and C
B. One or more of the following fully reversible aura symptoms:
a. visual
b. sensory
c. speech and/or language
d. motor
e. brainstem
f. retinal

C. At least three of the following six characteristics:
g. at least one aura symptom spreads gradually over ≥ 5 minutes
h. two or more aura symptoms occur in succession
i. each individual aura symptom lasts 5–60 minutes
j. at least one aura symptom is unilateral
k. at least one aura symptom is positive
l. the aura is accompanied, or followed within 60 minutes, by headache

D. Not better accounted for by another ICHD-3 diagnosis.

and concomitantly, aura symptoms spread gradually over ≥ 5 min, and occur in succession. Visual symptoms affect both eyes and include positive (flashing lights, zig-zag lines), and/or negative (blind spots) disturbances. Sensitive symptoms often comprise unilateral negative (numbness), or positive (tingling, pins and needles) symptoms that start in the hand and gradually involve the arm and face. Uncommon auras include brainstem symptoms (dysarthria, vertigo, tinnitus), motor weakness (hemiplegic migraine), and strictly monocular visual symptoms (retinal migraine) [2]. In most cases, migraine aura is followed or accompanied by a headache that can have migraine features or not. In a minority of cases, aura occurs without any headache, thus it is possible to receive a diagnosis of migraine without having any headache.

3.1.3. *Distinguish migraine from other headaches and facial pain*

A careful history permits to distinguish migraine from other primary headaches, notably tension headache or cluster headache and from trigeminal neuralgia that is much less prevalent (Table 1). Key clinical features for a proper diagnosis are the duration of attacks without any treatment, the associated symptoms and the behavior during attacks.

3.2. *Distinguish episodic and chronic migraine*

Patients with < 15 headache days per month have episodic migraine. Chronic migraine is defined by 15 or more headache

Table 1 – Discriminating features of the main primary headaches and trigeminal neuralgia.

	Migraine	Tension-type headache	Cluster headache	Trigeminal neuralgia
Attack duration	4–72 h	Hours to days, or unremitting	15–180 min	Seconds to two minutes
Unilaterality	Usually unilateral	Usually bilateral	Strictly unilateral	Strictly unilateral
Pain location	Usually frontotemporal, sometimes occipital or diffuse	Circumferential or bitemporal or occipital	Orbital and/or temporal	V2/V3 >> V1
Type of pain	Usually pulsating	Usually pressing, tightening	Overwhelming	Electric shock, shooting, stabbing or sharp
Pain during routine physical activities (walking, climbing stairs)	Often aggravated by routine activities, Seeks calm	Not aggravated by routine physical activity	Not aggravated by routine activity Restlessness or agitation	Not aggravated by routine activity Aggravated by speaking, drinking, chewing
Pain Intensity	Moderate to severe	Mild to moderate	Severe to very severe	Severe to very severe
Digestive symptoms	Usually nausea and/or vomiting	Usually none	Rare nausea and/or vomiting	None
Sensorial symptoms	Usually phonophobia and photophobia Frequent osmophobia	Often none; sometimes photophobia OR phonophobia (not both) No osmophobia	Possible phonophobia and photophobia	None
Dysautonomic features*	Possible	None	Prominent*	Rare
Other possible features	Cranial and cervical tenderness, cutaneous allodynia	Cranial and cervical tenderness	Cranial and cervical tenderness Circadian periodicity of attacks	Precipitated by innocuous stimuli within trigger zones that are predominantly reported in the perioral and nasal region. Contraction of facial muscles on affected side

* Lacrimation, conjunctival injection, eyelid oedema, forehead and facial sweating, nasal fullness, rhinorrhea, ptosis, miosis.

Box 4. ICHD-3 diagnostic criteria for chronic migraine [2].

A. Headache (migraine or tension-type-like) on ≥ 15 days/month for > 3 months, and fulfilling criteria B and C
B. Occurring in a patient who has had at least five attacks fulfilling criteria B–D for *1.1 Migraine without aura* and/or criteria B and C for *1.2 Migraine with aura*
C. On ≥ 8 days/month for > 3 months, fulfilling any of the following:
1. criteria C and D for 1.1 Migraine without aura
2. criteria B and C for 1.2 Migraine with aura
3. believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative
D. Not better accounted for by another ICHD-3 diagnosis.

days per month, for more than three months, which, on at least eight days per month, meet ICHD-3 criteria for migraine with or without aura (Box 4). About 3% of persons with episodic migraine develop chronic migraine in a year [24], through a process called ''transformation'', ''chronification'' or ''progression'' [5]. Chronic migraine has a major impact on physical, mental, and socioeconomic functioning, and is associated with a worse quality of live than episodic migraine [6].

3.3. *Check for risk factors for chronic migraine and comorbidities*

Comorbidities of migraine (i.e., disorders that are more prevalent in migraineurs than in controls) include anxiety, depression, sleep disorders, asthma and other respiratory conditions, chronic non-headache pain, cardiovascular disorders, and other less common disorders (Table 2). Any of these comorbidities is associated with an increased risk of progression from episodic to chronic migraine, and the risk is further increased when multiple comorbidities are present [25] (Supplementary material - Appendix 1).

The improvement of comorbidities may possibly improve the treatment outcomes for migraine and vice versa. Among the modifiable risk factors for migraine progression, the highest strength of evidence is demonstrated for headache frequency at baseline, depression, and medication overuse [5,25,26].

In order to improve the management of migraine, the frequency of headaches and use of acute medications must be monitored by a headache calendar, and the psychiatric comorbidities must be systematically evaluated by the Hospital Anxiety and Depression (HAD) scale. An increased score on the HAD scale may reveal the emotional burden of debilitating migraine attacks, or a definite psychiatric disorder, or a combination of both.

3.4. *Screen for medication overuse and medication overuse headache*

Medication overuse headache (MOH) is a headache occurring at least 15 days/month and developing as a consequence of regular overuse of acute headache medication for more than 3 months (Box 5). An overuse is defined as a regular use of simple analgesics (paracetamol, acetylsalicylic acid, NSAIDs) for at least 15 days a month, or a regular use of triptans, combination-analgesics, ergotamines, opioids, or any combination of the mentioned drug-classes for at least 10 days a month. Opiates and combined analgesics induce the highest

Table 2 – Risk factors for chronic migraine [5,25].

Risk factors for transformation		Levels of evidence [5]	Potential preventive or curative intervention
Sociodemographics	Female gender	Fair	Non modifiable
Lifestyle factors	Low socioeconomic status of family	Fair	
Habits	Caffeine intake	Fair	Education, withdrawal/reduction of use
Major live events	Obesity	Medium	Education, healthy diet and physical exercise
	Major life events including history of abuse	Fair	Prevention of physical, emotional and sexual abuse Stress regulation techniques
Headache features	Frequency of headache days	High	Prophylactic treatment of migraine
	Persistent/frequent nausea with migraine	Medium	Prophylactic treatment of migraine
	Cutaneous allodynia	Medium	Prophylactic treatment of migraine
Comorbidities	Depression	High	Systematic HAD scale, treatment and/or referral
	Asthma and other respiratory conditions	Medium	Treatment or referral for treatment
	Non-cephalic pain (low back/neck pain, arthritis)	Medium	Physical activity, physical therapy, education about risks of medication overuse, avoidance of opiates
	Head and neck injury	Fair	Education, helmet when appropriate
	Snoring	Medium	Sleep management techniques, avoidance of
	Insomnia	Fair	benzodiazepines and hypnotics, specific treatments
	Hypertension, cardiovascular diseases	Unknown	Systematic screen for high blood-pressure, treatment or referral for treatment
Acute treatment	Acute medication overuse	High	Education, avoidance of opiates
	Inadequate acute treatment	Medium	Optimization of acute treatment

risks for MOH (level of evidence high) [27]. Medication overuse often parallels high frequency of headache, and might be either a consequence, or a promotor of migraine chronification, or both [28]. Accordingly, chronic migraine can now be diagnosed whether or not medication overuse is present [2].

The role of medication overuse in patients with chronic migraine should not be overemphasized because it may lead to suffering, stigmatization of patients as responsible for their own disorder, and diversion from other efficient therapeutic interventions [29].

3.5. *Assess headache-related disability*

The disability relies on the frequency and intensity of headache and coping strategies of the patient and should be formally evaluated at each visit by the use of the headache impact test (HIT-6). Evidence showed that patients with 8 or more monthly headache days have a similar reduction of their quality of life as patients with chronic migraine [30]. Therefore, severe migraine should be diagnosed according to the recently proposed French criteria in any patient having 8 or more monthly migraine days and in any patient having a HIT-6 score of 60 or above and/or having markedly debilitating attacks [31] (Box 6) (Supplementary material - Appendix 2).

3.6. *Discuss trigger factors and their avoidance*

Migraine triggers are factors that alone or in combination provoke attacks in people prone to migraine [32]. The role of triggers is often overestimated, and even sometimes misunderstood as causal for the disorder itself. Indeed, stimuli like bright lights, noises, smells or chocolate are commonly incriminated, but photophobia, phonophobia, osmophobia and craving for foods are characteristic symptoms of the prodromal phase of migraine. True migraine triggers do exist and are often self-evident, like menstruations and alcohol. Although lifestyle changes may be encouraged in patients with insufficient sleep, poor physical fitness or unhealthy diet, it should be made clear that lifestyle improvements will not cure migraine. Moreover, unnecessary avoidance behaviors of true and supposed triggers can negatively affect quality of life, and may even contribute to increased headache trigger sensitivity and subsequent migraine activity [33].

Box 5. ICHD-3 diagnostic criteria for medication overuse headache [2].

A. Headache occurring on ≥15 days/month in a patient with a pre-existing headache disorder
B. Regular overuse for >3 months of one or more drugs that can be taken for acute and/or symptomatic treatment of headache
C. Not better accounted for by another ICHD-3 diagnosis.

Box 6. Diagnostic criteria for severe migraine [31].

A. Headache frequency of at least 8 migraine days per month
B. Headache frequency < 8 migraine days per month, but associated with at least one of the following criteria:

1. HIT-6 score ≥ 60
2. Necessitating complete interruption of activity for ≥ 50% of headaches

3.7. *Check for resistant or refractory migraine*

To further characterize patients with severe migraine, the European Headache Federation (EHF) recently proposed criteria for resistant and refractory migraine [34]. A debilitating headache causes serious impairment to conduct activities of daily living despite the use of pain-relief drugs with established efficacy at the recommended dose and taken early during the attack. Failure of at least two different triptans is required to qualify the nonresponse to acute treatment [34]. Resistant migraine is diagnosed after the failure of at least 3 classes of prophylactic migraine medications and refractory migraine, after the failure all of available preventatives (Box 7, Box 8). Drug failure includes lack of efficacy or lack of tolerability. Prophylactic medications are divided by pharmacological classes.

3.8. *Perform a physical examination*

A physical exam should include a systematic assessment of blood pressure. The examination is typically normal in migraine patients in between attacks. During attacks, examination may show pallor, hypo or hypertension, neck stiffness or tenderness, cutaneous allodynia, and sometimes, cranial dysautonomic symptoms. Cutaneous allodynia and neck pain may persist between attacks [35].

Box 7. European Headache Federation diagnostic criteria for resistant migraine [34].

A. Established diagnosis of migraine without aura and/or migraine with aura or chronic migraine according to ICHD3 criteria
B. Debilitating headache for at least 8 days per month for at least 3 months
C. Failure and/or contraindication to 3 drug classes with established evidence for migraine prevention, given at an appropriate dose for an appropriate duration

Box 8. European Headache Federation diagnostic criteria for refractory migraine [34].

A. Established diagnosis of migraine without aura and/or migraine with aura or chronic migraine according to ICHD3 criteria
B. Debilitating headache for at least 8 days per month for at least 6 months
C. Failure and/or contraindication to all drug classes with established evidence for migraine prevention, given at an appropriate dose for an appropriate duration

Box 9. Acute migraine treatment optimization questionnaire M-TOQ [37].

- Are you able to return quickly to your normal activities (i.e. work, family, leisure, social activities) after taking your migraine medication?
- Can you count on your migraine medication to relieve your pain within 2 h for most attacks?
- Does one dose of your migraine medication usually relieve your headache and keep it away for at least 24 h?
- Are you comfortable enough with your migraine medication to be able to plan your daily activities?
- Is your migraine medication well tolerated?

3.9. *Discuss complementary examinations*

In case of red flags in the familial or individual medical history, or in the physical examination, perform neuroimaging and other tests to confirm or exclude a cause of secondary headache and/or aura [36]. Neuroimaging plays no role in the positive diagnosis of migraine and in the distinction between migraine and other primary headache disorders.

3.10. *Assess efficacy and tolerability of the current acute migraine treatment*

At each visit, review the current acute treatment, namely the type of migraine medication, number of days of intake (headache calendar), tolerance, dose, timing and route of administration, and the respect of contraindications. Efficacy and tolerability can be systematically assessed with the self-administered Migraine Treatment Optimization Questionnaire (M-TOQ) (Box 9) [37].

3.11. *Recommendations about the diagnosis and assessment of migraine*

The recommendations are summarized in the Table 3.

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Table 3 – Recommendations about the diagnosis and assessment of migraine.

	Concerning the diagnosis and assessment of migraine, we recommend to	Strength of the recommendation
Rd1	Use ICHD-3 criteria to diagnose migraine and distinguish migraine from tension-type headache, cluster headache and trigeminal neuralgia	Strong
Rd2	Consider cerebral MRI and other appropriate tests only when there is a suspicion of another disorder causing secondary headache and/or aura-like symptoms, notably in case of: Migraine attacks appearing after the age of 50 years; Atypical aura because of acute onset, duration > 60 min, side-locked symptoms, or absence of visual symptoms; Chronic migraine since less than one year; Abnormal physical examination	Strong
Rd3	Perform or refer for emergent neuroimaging and/or other appropriate tests any patient presenting headache with: Sudden-onset (thunderclap); Recent-onset or recently worsening (< 7 days); Associated fever (without other obvious general cause); Associated neurological signs; Associated features suggestive of intoxication (particularly CO); A context of immune deficiency	Strong
Rd4	Encourage the use of a headache calendar in any patient with migraine	Strong
Rd5	Assess comorbidities, and emotional burden with the HAD scale	Strong
Rd6	Assess headache-related disability with the HIT-6 sale	Strong
Rd7	Assess blood pressure at each visit	Strong
Rd8	Assess efficacy and tolerability of acute migraine medications at each visit with the Migraine Treatment Optimization Questionnaire (M-TOQ)	Strong
Rd9	Provide appropriate reassurance, agree on realistic objectives and propose an individualized therapeutic strategy combining: An optimized acute treatment; Lifestyle improvements (regular hydration, sleep, meals and exercise); Management of modifiable risk factors for migraine chronification notably depression and medication overuse; A prophylaxis for eligible patients	Strong
Rd10	Refer patients: With brainstem, hemiplegic or retinal aura to a neurologist; With severe migraine (French criteria) to a neurologist or a physician certified by the national "*Diplôme Inter-Universitaire Migraine et Céphalées*"; With resistant or refractory migraine (EHF) to a neurologist certified by the "*Diplôme Inter-Universitaire Migraine et Céphalées*" or a tertiary headache center	Strong

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at https://doi.org/10.1016/j.neurol.2021.07.001.

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