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How To Diagnose Migraine

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Migraine: an episodic disorder, most commonly consisting of severe headache, usually with photophobia (light sensitivity), phonophobia (sound sensitivity) and/or nausea (at times vomiting). It is one of the most frequent chief complaints presented to health care providers including neurologists and emergency medicine.

Migraine typically affects more women than men, often peaking during 2 phases of life: puberty and/or perimenopause. Migraine can lead to significant amounts of mental, physical, financial, medical, societal and personal burden when not properly addressed.

Quick screening tool to identify migraine:
ID MIGRAINE P.I.N. THE DIAGNOSIS
(at least 2 out of 3 positive)

- Disability (limits routine daily activity, work/school, social activity)
- Nausea
- Photophobia

*__Sensitivity__ of 0.81 (95% CI, 0.77 to 0.85), specificity of 0.75 (95% CI, 0.64 to 0.84) in a primary care setting.at times mild elation or euphoria

Migraine, as defined by the International Classification of Headache Disorders, third edition (ICHD-3), should include the following:

1. At least 5 or more attacks in lifetime
2. Headache attack lasting 4-72 hrs
3. At least 2 out of 4 features (unilateral location, pulsating/throbbing quality, moderate-severe intensity, aggravation by/causing avoidance of routine physical activity)
4. At least 1 of the following features (nausea and/or vomiting, photophobia and phonophobia)

Migraine Phases:
Prodrome → Aura → Headache → Postdrome

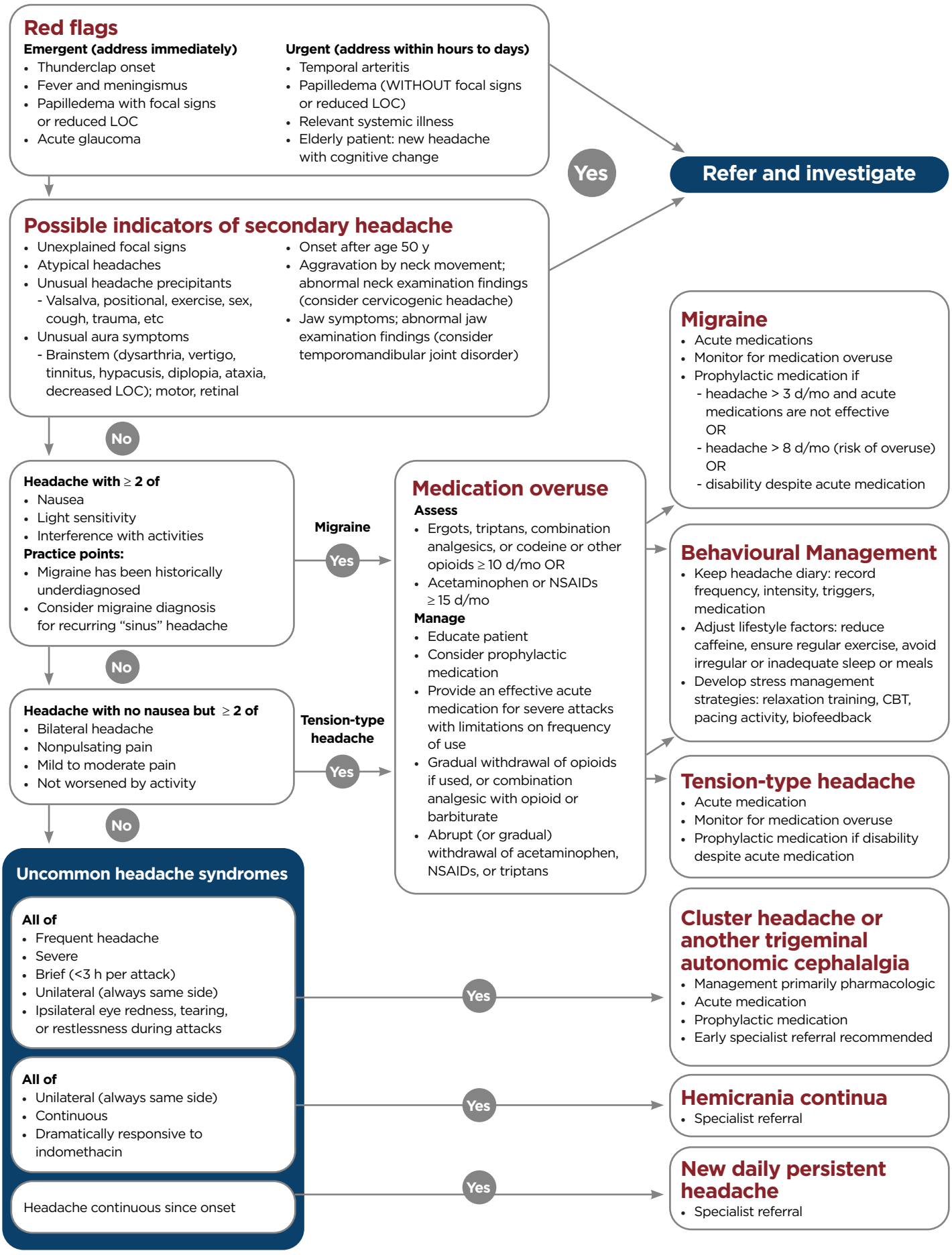
1. **Prodrome:** commonly 24-48 hours prior to headache. Can include yawning, mood changes, food cravings, GI symptoms, increased sensitivities and/or neck stiffness
2. **Aura:** see list of migraine variants below for descriptions
3. **Headache:** see typical clinical features listed above; also keep in mind headache location often shifts around the cranium
4. **Postdrome:** often feeling drained/exhausted, although at times mild elation or euphoria

Important Clinical Pearls to Keep in Mind:

- Rule out secondary headache when diagnosing primary headache disorder (see figure below)
- Neuroimaging not indicated in patients with recurrent headache with clinical features of migraine, normal neurologic examination findings and no red flags
- Neuroimaging, sinus or cervical spine x-ray scans and electroencephalograms (EEG) generally not recommended for routine assessment of patients with headache: clinical history + family history + physical/neurologic examination findings usually sufficient to make a diagnosis of migraine
- Migraine by far the most common headache type in patients seeking help from physicians
- Migraine is frequently underdiagnosed and undertreated
- Patients consulting for bilateral headaches that interfere with daily activities likely to have migraine rather than tension-type headache (might require migraine-specific medication)
- Consider diagnosis of migraine in patients with previous diagnosis of "recurring sinus headache"
- Medication overuse headache (a secondary headache disorder): considered present in patients with migraine (or tension-type headache) using combination analgesics, opioids or triptans ≥ 10 days/month, or acetaminophen/NSAIDs ≥ 15 days/month
- Comprehensive migraine therapy typically includes management of healthy lifestyle modifications, avoiding triggers, prophylactic/acute medications, status migrainosus action plan, non-pharmacologic therapies and/or devices and migraine self-management strategies
- Substantial numbers of patients who might benefit from prophylactic therapy do not receive it
- Keeping a headache diary is helpful to track progress/acute medications

Aura can be disabling; for example, visual aura may obscure most of the visual field (artist's depiction of aura symptoms)

When ruling out other headache types prior to a migraine diagnosis, consider the following helpful algorithm:



Keep in mind that migraine can be accompanied by many various associated symptoms.

Migraine also encompasses several variants (below is a summary, not all encompassing).

All variants below should meet ICHD-3 criteria for migraine listed at beginning of this section, in addition to the below listed individual characteristics:

1. If headache meets most but not ALL ICHD-3 criteria for migraine, then call it **Probable Migraine**
2. **Chronic migraine:** half of the days are of migraine severity/phenotype (≥ 15 days/month), for > 3 months
3. **Status migrainosus:** debilitating migraine attack ≥ 72 hours
4. **Migraine aura without headache** is possible
5. **Migraine with aura**
   a. At least 1 or more fully reversible features (**TYPICAL AURA: visual, sensory, speech and/or language.** OTHER AURA: motor, brainstem or retinal)
   b. At least 3 or more characteristics:
      i. At least 1 aura symptom spreads gradually over ≥5 minutes (if sudden onset, think about alternate etiology such as stroke/TIA, etc.)
      ii. 2 or more aura symptoms occur in succession
      iii. Each individual aura symptom lasts typically 5-60 minutes
      iv. At least 1 aura symptom is unilateral
      v. At least 1 aura symptom is positive (example: sensory tingling is positive, numbness is negative)
      vi. The aura is accompanied or followed within 60 minutes by headache
6. **Migraine with brainstem aura**
   a. At least 2 or more reversible features (dysarthria, vertigo, tinnitus, hypoacusis, diplopia, ataxia not attributable to sensory deficit, decreased level of consciousness)
   b. **NO** motor or retinal symptoms
7. **Hemiplegic migraine**
   a. Fully reversible motor weakness **AND** fully reversible visual, sensory and/or speech/language symptoms
   b. Can be familial or sporadic
8. **Retinal migraine**
   a. Repeated attacks of monocular visual disturbance (including scintillations, scotomata or blindness), associated with migraine headache
      I. fully reversible, monocular, positive and/or negative visual phenomena confirmed during an attack by either or both of the following:
      - clinical visual field examination
      - the patient's drawing of a monocular field defect

      ii. at least 2 or more of the following:
      - spreading gradually over ≥ 5 minutes
      - symptoms last 5-60 minutes
      - accompanied or followed within 60 minutes by headache

Although these are NOT considered to be "traditional migraine variants," the diagnoses below are listed in the APPENDIX of the ICHD3:

Vestibular migraine
- Vestibular symptoms moderate-severe intensity
- Typically 5 minutes to 72 hours
- At least half of episodes associated with at least one of the following migraine features:
- Headache with at least 2 of 4 features (unilateral location, pulsating, moderate-severe intensity, aggravation by/avoiding routine physical activity)
- Photophobia and phonophobia
- Visual aura

Menstrual migraine
- Occurs in at least two-thirds of menstrual cycles during the typical 5-day perimenstrual period from day 2 through three days after period begins (with day one as the first day of flow)

Do not be afraid to ask the patient about the various features that can occur with their migraine.

Often patients will forget to be forthcoming about certain aspects of their migraine because they have "gotten used to dealing with it for so long," thus it is commonly ignored.

Asking patients about alleviating factors can also help in acquiring the clinical history for a migraine patient. Here are some common examples:

1. Migraine patients often need to sleep/rest for relief (compared to cluster headache patients who are often agitated/pacing around)
2. Prefer to rest in a dark room (which could indicate light sensitivity, or photophobia)
3. Prefer to rest in a quiet place (which could indicate sound sensitivity, or phonophobia)
4. Prefer to rest keeping still (which could indicate movement sensitivity, or kinesiophobia)
5. Prefer to avoid perfume/cologne or other strong smells (which could indicate smell sensitivity, or osmophobia)
6. Prefer to avoid touching the scalp/neck (which could indicate cutaneous allodynia)

A helpful hint in determining headache frequency is to ask **how many days of true headache freedom** they have every month.

Lifestyle modifications are the key foundation of non-medication therapies to help migraine

- Regular eating schedule
- Regular sleeping schedule with sleep hygiene
- Avoid excess sugar/carbohydrates
- Avoiding excess caffeine
- Cardio exercise: recommended 40 minutes, 3 days per week (or about 20 minutes per day when discussing compliance with the patient)
- Stress/mental health management

Lifestyle specific references:

Lemmens, Joris, et al. "The Effect of Aerobic Exercise on the Number of Migraine Days, Duration and Pain Intensity in Migraine: a Systematic Literature Review and Meta-Analysis." The Journal of Headache and Pain, vol. 20, no. 1, 2019, doi:10.1186/s10194-019-0961-8.

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