Primary Care Approach to Chronic Headache

Headache Classification

- **Primary Headaches**
  - Tension
  - Migraine
  - Cluster (Trigeminal Autonomic Cephalalgias)
  - Other Primary

- **Secondary Headaches**
  - Traumatic
  - Vascular
  - Non-vascular intracranial
  - Substance
  - Infection
  - Homeostasis Disorder
  - Facial Disorder
  - Psychiatric

Migraine without Aura
“Common Migraine”
(from ICHD-3 beta)

A. At least five attacks fulfilling criteria B–D
B. Headache attacks lasting 4-72 hours (untreated or unsuccessfully treated)
C. Headache has at least two of the following four characteristics:
  1. unilateral location
  2. pulsating quality
  3. moderate or severe pain intensity
  4. aggravation by or causing avoidance of routine physical activity (e.g. walking or climbing stairs)
D. During headache at least one of the following:
   1. nausea and/or vomiting
   2. photophobia and phonophobia
E. Not better accounted for by another ICHD-3 diagnosis.

Migraine with Aura
“Classic Migraine”
(from ICHD-3 beta)

A. At least two attacks fulfilling criteria B and C
B. One or more of the following fully reversible aura symptoms:
   1. visual
   2. sensory
   3. speech and/or language
   4. motor
   5. brainstem
   6. retinal
C. At least two of the following four characteristics:
   1. at least one aura symptom spreads gradually over 5 minutes, and/or two or more symptoms occur in succession
   2. each individual aura symptom lasts 5-60 minutes
   3. at least one aura symptom is unilateral
   4. the aura is accompanied, or followed within 60 minutes, by headache
D. Not better accounted for by another ICHD-3 diagnosis, and transient ischemic attack has been excluded.

Tension-type Headache
(from ICHD-3 beta)

A. At least 10 episodes of headache occurring on <1 day per month on average (<12 days per year) and fulfilling criteria B–D
B. Lasting from 30 minutes to 7 days
C. At least two of the following four characteristics:
   1. bilateral location
   2. pressing or tightening (non-pulsating) quality
   3. mild or moderate intensity
   4. not aggravated by routine physical activity such as walking or climbing stairs
D. Both of the following:
   1. no nausea or vomiting
   2. no more than one of photophobia or phonophobia
E. Not better accounted for by another ICHD-3 diagnosis.
Trigeminal Autonomic Cephalalgias (from ICHD-3 beta)

- Cluster headache
- Paroxysmal hemicrania
- Short-lasting unilateral neuralgiform headache attacks
- Hemicrania continua
- Probable trigeminal autonomic cephalalgia

*The Hemicranias are by definition completely responsive to Indomethacin treatment

Migraines Vs. ?

Migraine Facts

- Greek: “half the head” (hemicrania)
- Lifetime prevalence: 25% women, 8% men
- Often begin in childhood/adolescence—equal gender prevalence until adolescence
- 30-39 Years of Age is highest prevalence decade
- 50% neurologists have headaches; 75% of headache specialists
- Strongly hereditary

Migraine Vs. Tension

- Migraines Unilateral 60% of time, Bilateral 40%
- Nausea (80% of migraines)
- Photophobia (90%); Phonophobia (80%)
- Pulsatile/throbbing vs. Band-like
- Visual disturbances
- Activity worsens migraines, not Tension

Migraine Vs. Other headaches

- 50% of migraineurs Incorrectly self-diagnose (most commonly report sinus, tension, or stress headaches)
- Autonomic symptoms common (lacrimation, eye redness, ptosis, lid edema, nasal congestion/rhinorrhea)
- Anterior location in migraine (though 75% migraineurs complain of posterior neck symptoms also)
- Many tension headaches don't present to office (at least not primarily for headache intervention)
Migraine Prodromes
Changes in mental state/neuro symptoms precedes attacks by hours-days (80% of attacks)

- Anxiety
- Irritability
- Yawning
- Unhappiness
- Concentration difficulty
- Somnolence
- Light/noise sensitivity
- Flatulence/constipation

Migraine Aura
- Transient sensory/neurologic disturbance immediately preceding or accompanying a migraine headache
- ONLY occur in 25% of migraineurs and not always in those patients
- Order of occurrence AND commonality:
  - Visual (scoloma) > Sensory (paresthesias) > Language (aphasia-expressive OR receptive)

Migraine Visual Aura
- Transient sensory/neurologic disturbance immediately preceding or accompanying a migraine headache
- ONLY occur in 25% of migraineurs and not always in those patients
- Order of occurrence AND commonality:
  - Visual (scoloma) > Sensory (paresthesias) > Language (aphasia-expressive OR receptive)

Practical Assessment of Headache
- Careful History!
  - Duration
  - Location
  - Quality
  - Frequency
  - Modifying factors
  - Prior headache history (*very helpful)
  - Medications/PMHx
  - Family History (80-95% have familial history)
- CLARIFY definitions ("I get a migraine once a month….but I have a headache every day")
- Patients often identify severe headaches as "migraine" but milder ones as only "headaches"
- Headache Diary can be very helpful

Practical Assessment of Headache
- Physical Exam—obviously invaluable but may be difficult in acute headache setting
  - HEENT
  - Neurologic
  - Cardiovascular
  - Assess for Concomitant Medical issues!

Warning Signs of Emergent Headaches (Red Flags)
- Severe ("worst headache ever...") (Subarachnoid hemorrhage)
- Worsening with Position changes or Valsalva (Mass effect, aneurysm)
- New onset in older patient (Mass, stroke)
- Lateral/focal symptoms or physical findings (Mass, stroke, MS)
- New Visual defects (Mass, Stroke)
- Concurrent fever (Meningitis/encephalitis)
- Ill-appearing
Practical Assessment of Headache

Who needs imaging?

- "Red-flag" symptoms
- Abnormal neurologic exam
- Marked change in stable symptoms
- **CT** w/o contrast: fast, reliable for acute headache to rule out intracranial hemorrhage
- **MRI** w/and w/o contrast: preferred for non-acute headache evaluation

Practical Differential Diagnosis

- **Pseudotumor cerebrii**
  Young, obese, female with visual symptoms
- **Temporal Arteritis**
  Older, jaw claudication, associated with PMR (fatigue, vague MSK pains, weight loss), ^ESR

How then shall we treat?

Concurrent Diagnoses Requiring Treatment Coordination

- Hypertension (Beta blockers?)
- Coronary Artery Disease (NSAID, Triptan avoidance)
- Depression (low-dose TCA/SNRI)
- Bipolar (antiepileptics)
- Fibromyalgia
- Sleep Apnea (CPAP)
- Menstrual Disorders (COCP avoidance smokers over 35; History of aura)

First-line Headache Treatment (Remember the Basics)

- Triggers recognition/intervention
- Treat obvious contributors (e.g. BP, sleep apnea, insomnia, depression, etc.)
- Adequate sleep
- Proper nutrition
- Exercise
- Water intake
- Caffeine reduction/avoidance
- Tobacco and Alcohol avoidance
- Stress management

Headache Treatment

- Aggressively approach acute, episodic headaches to reduce frequency (Facilitation or Kindling effect)
- Treating headache early increases success (particularly with Triptans)
- Always review OTC use
- Followup is important
**Migraine Triggers**
- Changes in Diet
- Changes in Schedule
- Lack of Sleep
- Oversleep
- Fatigue
- Stress

*Stress importance of maintaining routines whenever possible*

**Headache Treatment**

**Consideration of Food Triggers**
- Review Headache Diary to help confirm food triggers
- Avoid nitrite-containing foods such as hot dogs, cured meats
- MSG commonly targeted precipitant
- Most common trigger foods contain Tyramine
  - Chocolate
  - Pork, Aged Chicken liver
  - Ripened cheeses/fermented foods
  - Red wine

*Radical alterations in the diet are rarely justified and seldom effective.* Daroff: Bradley’s Neurology

*Use this discussion to review practical, nutritious habits (eg. 6 Mountain Dews/day...)*

**Acute Treatment of Migraine**

*NSAIDs or acetaminophen often effective and well-tolerated*

**Acetaminophen** or Combination (ASA/APAP/caffeine)

**NSAIDs**
- Diclofenac 75mg
- Ketorolac IM 30-60mg
- Ibuprofen 400-800mg
- Flurbiprofen 100-300mg
- Naproxen 750mg
- Indomethacin (particularly if potential paroxysmal hemicrania)

**Antiemetics**
- Metoclopramide — rare extrapyramidal (dystonia) side effects
- Phenothiazines (prochlorperazine, promethazine, etc)—akathisia, dystonia possible

**Corticosteroids**
- Dexamethasone (*C* evidence—few studies)

**Triptans**
- Equally effective
- Early administration important
- SE of flushing/tingling, chest heaviness/pressure NOT associated with EKG changes (serotonergic effects)
- Consider SQ, PR, nasal route if PO ineffective, marked n/v, awakening headaches
- Naratriptan, Almotriptan may have less SE
- Frovatriptan, Naratriptan have lower recurrence rate (longer half-life)
Acute Treatment of Migraine

Triptans, ctd.

- Contraindications:
  - Coronary Artery Disease
  - Prinzmetal's Angina
  - Hemiplegic/Basilar migraine
  - Pregnancy
  - Uncontrolled Hypertension

- DHE—Nasal (“A” evidence)
  - Nasal congestion common
  - DHE—SC, IM , IV (“B” evidence)
  - Low recurrence rate
  - Nausea common; use antiemetics with IV

- Ergotamine—Oral (“B” evidence)
  - N/V most likely side effects
  *Avoid all Ergot products if risk of ischemia (eg. CAD history)

- Opioids
  - Consider in more severe, well-ensconced headaches (“ER setting”)
  - Avoid frequent use OR use in Chronic Daily Headache due to overuse/dependence risk

- Butalbital
  - Limited evidence for efficacy
  - Marked risk for Rebound/Medication Overuse effects

When occasional becomes frequent....

Chronic Headache Preventative Treatment

- Consider with ≥ 2 episodic migraines weekly
- Consider if less frequent acute headaches BUT more disability
- Factor in co-morbidities
- Consider in Chronic Daily Headache
- Address Medication Overuse (Rebound)

CHRONIC DAILY HEADACHE

- Chronification of Episodic Primary headaches leads to CDH
- Headache ≥15 days per month
- Duration of at least 3 months
- 3 common entities to address:
  - Chronic Migraine
  - Chronic Tension-type Headache
  - Medication Overuse Headache
Medication Overuse Headache “Rebound”
- Headache occurring > 15 d/mo in patient with preexisting headache disorder
- Regular overuse for > 3 months with 1 or more drugs used for acute headache treatment
- Occurs in at least 50% of Chronic Daily Headaches
- Discontinuation of offending medication improves headache chronicity/frequency/severity

Common factor in CDH—identification critical for overall treatment success
- Butalbital, Opioids, Apap/ASA/caffeine combo, Ergots highest risk
- Triptans moderate risk
- NSAIDs lowest risk (shorter-acting worse)
- Must review OTC use, use of other’s RX meds carefully

Medication Overuse Headache Treatment Strategy
- Remove offending agents
  - Taper opioids, butalbital over 2-4 weeks
- Offer clear plan for treating acute headaches
  - Avoid use of any single agent > 2x/week
  - Consider longer-acting NSAIDs, Triptans for abortive/rescue treatment
- Consider Prednisone course (5-7 days)
- Start Preventative Medication
- Address the Basics (sleep, stress, diet, exercise, etc)
- Follow-up critical

Chronic Headache Preventative Treatment
- Antiepileptics
- Tricyclic antidepressants/SNRI
- Beta Blockers
- NSAIDs
- Alternative Agents
  - Most single-drug regimens reduce headache frequency, severity by 40-50% (specify this so your patient does not consider REDUCTION rather than ERADICATION a failure)

Amitriptyline (B)
- 10-75mg q5 often effective (antidepressant doses 75-150mg)
- Sedation (dose nightly), dry mouth, dizziness/fall risks are major SE
- A Migraineur with marked sleep disturbance is perfect candidate
- Nortriptyline (active metabolite of amitriptyline)—less sedation, weight gain
- Doxepin (No anticholinergic side effects—favor this in elderly)
- Venlafaxine (B)
  - 75-375mg (usual antidepressant dose)
  - Beware of Withdrawal Syndrome (even missed doses by hours)

*SSRIs absent from this list (NO strong evidence of prophylactic benefit)
Chronic Headache Prevention

Antiepileptics

- **Valproic Acid** (A)—500-1000mg QD of Divalproex Sodium ER
  - AE: Sedation, dizziness, wt gain, LFT ↑
- **Topiramate** (A)—75mg HS-100BID
  - AE: Cognition difficulty, paresthesia, wt loss
- **Carbamazepine** (C)
- **Gabapentin** (U)
- **Lamotrigine** (NOT effective)

NSAIDS

- **Naproxen, Ibuprofen, Ketoprofen, Fenoprofen** "B" evidence
  - Though listed in guidelines, avoid daily use if possible (always clinical exceptions)
  - MO headaches still possible
  - Newer, Longer-acting agents (meloxicam, nabumetone) NOT mentioned—Potentially advantageous?
  - Cardiovascular risk, in addition to GI, Renal, BP concerns

Complementary Agents

- **Petasites** (Butterbur plant extract) (A)
  - Petadiol® 75mg BID specific agent studied
  - Long-term safety NOT known (liver toxicity?)
- **Riboflavin** (B)—Vitamin B2
  - 400mg daily
  - Use at least for 3 months for efficacy determination
- **Magnesium** (B)—
  - 400mg Magnesium Oxide (OTC) daily
  - Serum levels likely not reflective of neurologic benefit
  - May help particularly in Migraine with Aura
  - May help particularly in Menstrually related migraines

Complementary Agents

- **MIG-99** (B)—CO2-extract of Feverfew
  - 6.25mg TID studied dose
  - GI side effects similar to placebo
- **Coenzyme Q-10** (c)
  - 100mg TID studied dose
  - Minimal side effects

Menstrual Migraine

- **Menstrually Related Migraine** (>50% female migraineurs)
  - Headaches often around period but also at other times in month
  - Often worse symptoms if during period
- **Pure Menstrual Migraine** (10-14% female migraineurs)
  - Migraine ONLY during -2 to +3 days of period

- **Luteal phase**: abrupt estrogen drop is critical trigger for menstrual migraines.
- **Prostaglandins** have important role (hence potential NSAID benefit in treatment)
Menstrual Migraine Treatment

- Usual abortive agents work—though consider NSAID trial first
- COCPs Safe if no aura--discontinue COCPs if worsening migraines OR development of Aura
- Try Miniprophylaxis if severe menstrual migraines (start 2 days prior thru day 3-5)
  - Naproxen Na 550mg BID
  - Triptans (Frovatriptan 2.5mg BID, Naratriptan 1mg BID)
  - Other preventative agents for ~7 days will also work

The Post-Menopausal Migraine

- Many migraines improve post-menopaually THOUGH may worsen/erratic during perimenopause
- HRT: >75% - NO change or improve; 23% - headaches worsen
- If worsening, consider reducing estrogen dose or transdermal/IM HRT

References