Evaluation of Headache Syndromes and Migraine

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Objectives

• 1) Identify the diagnostic features of migraine
  • Differentiate from sinusitis

• 2) List the 3 pillars of headache treatment

• 3) Select appropriate imaging options

• 4) Incorporate Kaiser resources for headache into patient management
Diagnosis - Migraine Headache

- ≥ 5 attacks, lasting 4-72 hrs
- ≥ 2 of the following 4
  - Unilateral location (but 40% bilateral)
  - Pulsating quality (but 25% not throbbing)
  - Moderate or severe pain intensity
  - Aggravation by routine physical activity or avoidance of such
- ≥ 1 of the following
  - Nausea and/or vomiting
  - Photophobia and phonophobia
- No evidence on history or examination of disease that might cause headaches
Probable Migraine

- Fulfilling all but one of the following
  - \( \geq 5 \) attacks & lasting 4-72 hrs
  - \( \geq 2 \) of the following 4
    - Unilateral location
    - Pulsating quality
    - Moderate or severe pain intensity
    - Aggravation by routine physical activity or avoidance of such
  - \( \geq 1 \) of the following
    - Nausea and/or vomiting
    - Photophobia and phonophobia
- No evidence on history or examination of disease that might cause headaches

SULTANS

- S Severe
- U Unilateral
- L
- T Throbbing
- A Activity avoids / aggravates

- Migraine
  - 2 of these 4
  - N Nausea
  - S Sensitive light & sound
  - And 1 of these 2 symptoms
Chronic Migraine Headache

- Headache on \( \geq 15 \text{ days/month} \) for \( \geq 3 \text{ months} \)
- \( \geq 2 \) of the following 4
  - Unilateral location
  - Pulsating quality
  - Moderate or severe pain intensity
  - Aggravation by routine physical activity or avoidance of such
- \( \geq 1 \) of the following
  - Nausea and/or vomiting
  - Photophobia and phonophobia
- No medication overuse

Medication Overuse Headache

- Headache present on > 15 days/month
- Regular over use for > 3 months of a medication
  - Prescription medications \( \geq 10 \text{ days/month} \)
  - Analgesics \( \geq 15 \text{ days/month} \)
- Headache has developed or markedly worsened during medication overuse
- Headache resolves or reverts to its previous pattern within 2 months of discontinuation of overused medication
What drugs cause drug rebound?

**Worst offenders:**
- Narcotics
- Ergotamine
- Caffeine-containing compounds:
  - Aspirin/acetaminophen
  - Butalbital

**Lesser offenders:**
- aspirin
- acetaminophen
- NSAIDs
- triptans

*Innocent until proven guilty*
  - DHE

Importance of Diagnosing Overuse

- If not recognized, unlikely that any treatment (acute or preventative) will be successful
- 1-2% of population has medication overuse headache
Tension Headache

- ≥ 10 attacks lasting 30 min – 7 days
- ≥ 2 of the following 4
  - Bilateral location
  - Pressing tightening (non pulsating quality)
  - Mild or Moderate intensity
  - No aggravation by routine physical activity such as walking or climbing stairs
- Both of the following
  - No Nausea and/or vomiting
  - Only one of photophobia or phonophobia
- No evidence on history or examination of disease that might cause headaches

Sinus Headache

- Frontal Headache, with pain in one or more regions of the face, ears, or teeth fulfilling criteria C and D
- Clinical, nasal endoscopic, CT and/or MRI and or laboratory evidence of acute or acute on chronic rhinosinusitis
- Headache and facial pain develop simultaneously with onset of
  - acute exacerbation OR
  - acute on chronic rhinosinusitis
- Headache and facial pain resolve within 7 days after remission or successful treatment of acute or acute on chronic rhinosinusitis
# Factors Associated with Rhinosinusitis – AAO-HNS

## Major Factors
- Purulence
- Facial Pain, pressure, congestion and fullness
- Nasal obstruction, blockage, discharge & purulence
- Fever (acute only)
- Hyposmnia & anosmia

## Minor Factors
- Headache
- Fever
- Halitosis
- Fatigue
- Dental Pain
- Cough
- Ear Pain and Fullness

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## Sinus Symptoms in Migraine
- Of > 2500 “sinus” headache
- > 90% have migraine by IHS criteria
- “Sinus” symptoms in migraine
  - Sinus pressure/pain > 80%
  - Congestion 65%
  - Runny nose 42%, Watery eyes 38%
- Distinct from active sinus infection (only 4 subjects)
  - Fever & Purulent discharge

*Schreiber et al. Diamond Headache and Educational Meeting, 2001*
Migraine Treatment

Acute Medications

Behavioral Modification

Preventative Medications

U.S. Headache Consortium

- American Academy of Family Physicians (AAFP),
- American Academy of Neurology (AAN)
- American College of Emergency Physicians (ACEP),
- American College of Physicians-American Society of Internal Medicine (ACP-ASIM),
- American Headache Society (AHS),
- American Osteopathic Association (AOA)
- National Headache Foundation (NHF)
Principles of Migraine Management

- Physician - Patient Relationship
- Education - make diagnosis and explain it
  - International Headache Society Criteria
  - Nature & Mechanism - “Migraine is Genetic”
  - Identify/avoid triggers
- Pharmacological Therapies
- Behavioral Management - HA Diary
  - Sleep, exercise, eating habits
  - Stress management, biofeedback, psychotherapy (CBT)

US Headache Consortium Guidelines

I. Behavioral Modification

- Trigger Identification and avoidance
- Address Stress, mood disorders
  - Anxiety and depression more frequent in migraineurs
- Lifestyle factors
  - Obesity
  - Exercise
  - Caffeine
### Common Migraine Triggers

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>80%</td>
</tr>
<tr>
<td>Hormones (female)</td>
<td>65%</td>
</tr>
<tr>
<td>Not Eating</td>
<td>57%</td>
</tr>
<tr>
<td>Weather</td>
<td>53%</td>
</tr>
<tr>
<td>Sleep disturbance</td>
<td>50%</td>
</tr>
<tr>
<td>Odor/Perfume</td>
<td>47%</td>
</tr>
<tr>
<td>Alcohol</td>
<td>38%</td>
</tr>
<tr>
<td>Food</td>
<td>27%</td>
</tr>
<tr>
<td>Exercise</td>
<td>22%</td>
</tr>
</tbody>
</table>

_Keilman, 2007_

### Non-pharmacological Therapy

- Evidenced based recommendation (Group B) for usefulness
- The benefits are additive to preventive drug therapy
- Effective
  - Relaxation training
  - Thermal biofeedback with relaxation training
  - EMG biofeedback
  - Cognitive behavioral treatments

II. Acute treatments

- Medications used to relieve headache
- 2 types
  - Migraine/Cluster specific
    - Triptans and DHE
  - General Analgesics
    - NSAIDs, opioids, butalbital
- Avoid Overuse (limits to twice a week)

Triptans

- Sumatriptan, rizatriptan are examples
- Most effective acute migraine treatment available
  - Treat individual attacks
  - Restore function
- Selective for certain idiopathic headaches
- Medications acting at serotonin 1B,1D, and IF receptors
Indications for triptans

- indicated for acute migraine (with or without aura) treatment in adults.
- not intended for preventative therapy or for hemiplegic or basilar migraine.
- Used in cluster headache (off label)

Contraindications for triptans

- Ischemic heart disease
  - Symptoms, or findings, coronary artery vasospasm Prinzmetal’s variant angina, or other significant underlying cardiovascular disease.
- Cerebrovascular syndromes including (but not limited to) strokes of any type as well as transient ischemic attacks
- Peripheral vascular disease including (but not limited to) ischemic bowel disease
- Uncontrolled hypertension.
Contraindications

• Hemiplegic or basilar migraine (lots of brainstem symptoms).

• Use within 24 hrs another 5-HT\textsubscript{1} agonist, an ergotamine-containing or ergot-type medication
  • dihydroergotamine or methysergide.

• Severe renal or hepatic impairment.

III. Preventative Therapy

• Daily medication used to prevent migraine
• Taken whether migraine is present or not
Preventative Therapy is considered

- Significant disability, despite acute treatments
- Acute therapy ineffective, contraindicated, intolerable
- Acute medications are overused
- Frequent headache (≥ 2 attacks/week)
- Uncommon migraine conditions
- Patient preference

Goals of Preventative Migraine Therapy

- Decrease attack frequency, intensity, duration
  - Reduce overall burden of headache by 50%
- Improve response to acute treatments
- Improve function and decrease disability
Preventative Therapy - Drug Classes

- Anticonvulsants
- Antidepressants
- Beta-blockers
- Calcium Channel Blockers
- Serotonin Antagonists
- NSAIDS
- Others (vitamins/mineral/herbs)

General Principles

- Assess co-existing conditions
  - Select drug to treat both disorders
  - Don’t use migraine drug contraindicated for other condition
  - Do not use drug for other condition that exacerbates migraine
  - Be aware of drug interactions
  - Special concerns for women of childbearing potential
- Side Effect Profile Important
Imaging

Recommendations: Imaging headache in the non acute setting

- Consider imaging non acute headache with
  - An abnormal neurological exam
- Imaging not usually warranted for
  - Typical migraine AND a normal neurological exam
  - Lower threshold for atypical headaches
- No specific recommendations regarding CT versus MRI
Kaiser Recommendations for imaging

- For young patients, < 40 years old
- MRI is preferred to avoid cumulative radiation exposure

Treating the Patient with Headache
Sinus Headache: A Neurology, Otolaryngology, Allergy and Primary Care Consensus on Diagnosis and Treatment

Mayo Clinic Proceedings
2005;(80): 908-916

Guidelines

- It’s likely migraine if
  - Stable pattern of recurrent headaches
  - Recurrent self limited headache associated with rhinogenic symptoms

- Evaluate for otolaryngologic condition
  - Prominent rhinogenic symptoms, with headache one of several symptoms
  - Headache with associated fever, purulent discharge
Guidelines (continued)

- Patients with evidence of infection should have complete evaluation
  - Nasal endoscopy versus MRI/CT
- Referral to headache specialist
  - New onset headache
  - Frequent > 1 per week
  - Headache with neurological symptoms or signs
  - Headache has not responded to conventional therapy
  - ((Headache brought on by valsalva, cough))

Guidelines (continued)

- Patients with migraine and no evidence of infection
  - should be given a trial or migraine specific medication
  - and scheduled for follow-up
- Patients with noninfectious rhinogenic symptoms with headache as a minor symptom
  - Should be prescribed nasal corticosteroids and/or selective antihistamines
Headache Management in Kaiser

- **Group Model**
  - First session is educational group
- **Most medical centers have headache clinics set up**
  - Mid level provider
  - Physician champion
- **Starts with headache seminar**
  - Required educational session
  - Reduces utilization
  - Provider appointments after

Kaiser Headache Clinics

- Can consider sending patient back to primary provider for migraine treatment
- **Who to refer:**
  - Headache is problematic (causes disability)
  - Failed 1 or 2 acute meds/triptans, preventatives
  - Medication over use headaches
  - Unusual migraine conditions