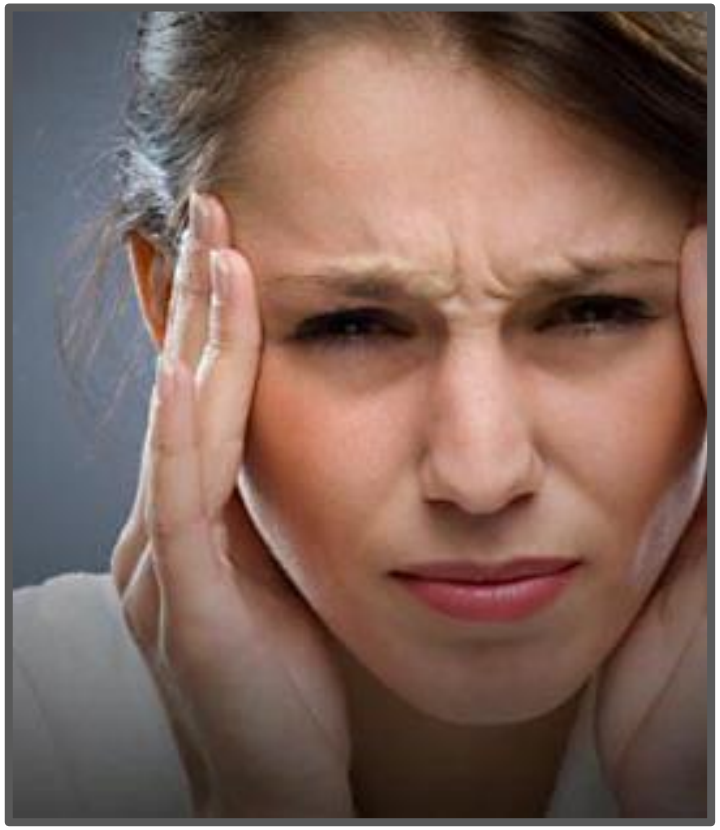
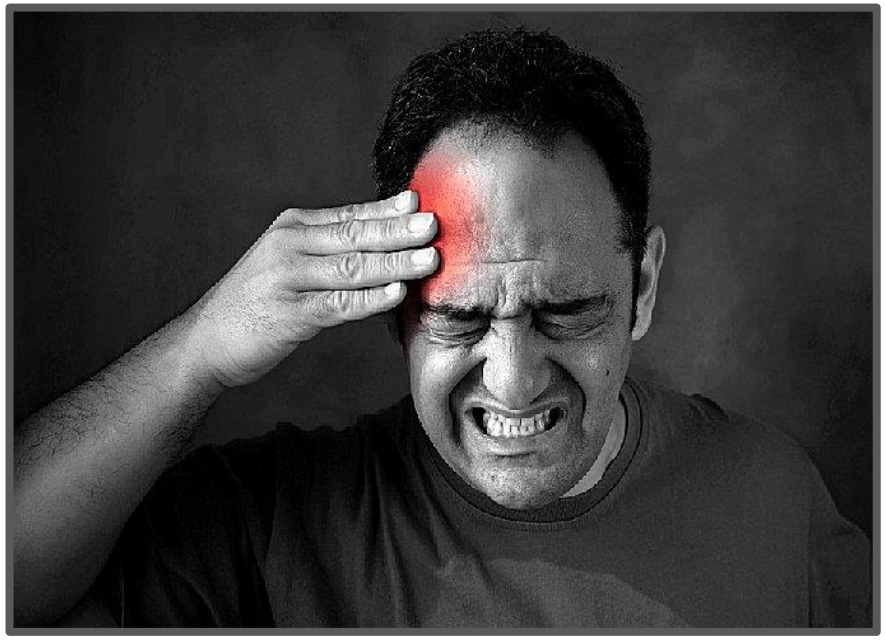




MIGRAINE MANAGEMENT IN PRIMARY CARE

RACHEL O'BEIRNE, DO – PGY2
VIA CHRISTI FAMILY MEDICINE RESIDENCY

LEARNING OBJECTIVES

- Discuss statistics regarding migraine prevalence and cost in the US population
- Review diagnostic criteria of migraine with vs. without aura and episodic vs. chronic
- Review headache red flag symptoms to consider
- Identify common migraine triggers
- Review guidelines for medications and supplements used in migraine prophylaxis and discuss selection criteria for specific medication classes
- Review medication management in acute migraine treatment
- Discuss new migraine medications, including calcitonin gene-related peptide therapy
- Discuss OMT therapy and other nonpharmacological therapy for migraine treatment and prevention

STATISTICS

- Prevalence of migraines is an estimated 16%
- Migraines are more common in women with prevalence ratio of 3:1
- Approximately 44.5 million U.S. adults have experienced a migraine (according to 2009 data)
- Estimated annual U.S. direct costs for migraines are more than $17 billion, not including productivity loss
- Headaches rank among top 5 reasons for ED visits and one of the top 20 reasons for outpatient visits

DIAGNOSTIC CRITERIA

MIGRAINE WITHOUT AURA

- Must have at least 5 attacks with the following……
- Headache attack lasting 4-72 hours (treated or not)
- With 2 characteristics:
  - aggravation by or causing avoidance of routine physical activity
  - moderate or severe pain intensity
  - pulsating quality
  - unilateral location
- With 1 other symptom: nausea/vomiting, photophobia, phonophobia

MIGRAINE WITH AURA

- Must have at least 2 attacks with the following…..
- One or more reversible aura sx: brainstem, motor, retinal, sensory, speech, visual
- With 2 characteristics:
  - at least one aura sx spreads gradually over 5 min
  - two or more aura sx occur in succession
  - each aura sx lasts 5-60 minutes
  - at least one aura sx is unilateral
  - the aura is accompanied or followed within 60 minutes by a headache

CLASSIFICATION

EPISODIC MIGRAINE

- Characterized by those with migraine who have 0-14 headache days per month

CHRONIC MIGRAINE

- Headaches at least 15 days per month for > 3 months and fulfilling the following criteria:
- At least five headache attacks fulfilling the migraine criteria
- Must have previous sx discussed for at least 8 days per month for >3 months

RED FLAG SYMPTOMS

- “Worst headache ever”
- Change in current headache pattern
- Neurologic signs or seizures
- New-onset after 50 years of age
- Persistent headache following Valsalva or exertion
- Progressively increasing severity
- Systemic sx: fever, hypertension, myalgia, weight loss
- “Thunderclap” headache (maximum severity at onset)

*These symptoms indicate the need for neuroimaging and/or urgent subspecialist Referral

COMMON TRIGGERS

- Additives
- Alcohol
- Artificial sweeteners (aspartame)
- Caffeine
- Delayed/missed meals
- Exercise
- Foods (chocolate, soft cheese)
- Light
- Menses
- Odors
- Oral contraceptive pills
- Red wine
- Sleep disturbances (OSA, insomnia)
- Smoke
- Stress
- Weather changes

❖ Consider having the patient keep a “headache diary” to identify triggers.

CASE

Mrs. James is a 33 year old female with PMH of hypertension and depression presents to the clinic with complaint of headaches. Patient says she thinks she has migraines, but isn't sure. She knows her mother had many headaches throughout her life. The headaches are often worse around her menstrual cycle, but thinks she has been averaging about 1 headache every week for the last 2 months. Her headaches last for 7-8 hours, are on the right side, and are associated nausea and photophobia. She occasionally stays home from work.

BP 147/90, HR 85, vitals otherwise normal

Medications: Fluoxetine, Tylenol, Ibuprofen

Normal neuro exam

- Would this patient be a candidate for prophylactic migraine treatment?

WHEN TO INITIATE PROPHYLACTIC THERAPY?

If the patient has….

- **FOUR** or more headaches a month

OR

- **At least 8 headache days** a month
- **Debilitating attacks** despite appropriate acute management
- There is concern for medication-overuse headaches
- Preference to take prophylactic medicine
- Certain migraine subtypes (hemiplegic, frequent aura, etc.)

Overall Level C recommendation

CASE CONTINUED

Mrs. James is a 33 year old female with PMH of hypertension and depression presents to the clinic with complaint of headaches. Patient says she thinks she has migraines, but isn't sure. She knows her mother had many headaches throughout her life. The headaches are often worse around her menstrual cycle, but thinks she has been averaging about 1 headache every week for the last 2 months. Her headaches last for 7-8 hours, are on the right side, and are associated nausea and photophobia. She occasionally stays home from work due to the pain.

BP 147/90, HR 85, vitals otherwise normal

Medications: Fluoxetine, Tylenol, Ibuprofen

Normal neuro exam

❖Yes! Consider starting this patient on prophylactic medications if patient is agreeable to treatment. (8 attacks total, 4 attacks per month)

- What medication would you consider starting?

RECOMMENDED MEDICATIONS FOR EPISODIC MIGRAINE PREVENTION

1ST LINE AGENTS

(established efficacy based on evidence)

- Divalproex (Depakote)
- Frovatriptan (Frova)*
- Metoprolol
- Propranolol
- Timolol
- Topiramate (Topamax)

2ND LINE AGENTS

(probably effective based on evidence)

- Amitriptyline
- Atenolol
- Nadolol (Corgard)
- Naratriptan (Amerge)*
- Venlafaxine
- Zolmitriptan (Zomig)*

❖ Pregnancy: Beta-blockers are considered safe in pregnancy.

*Recommended for menstrual migraines

HOW TO START THERAPY

1. Start therapy with meds that have the highest level of evidence
2. Consider comorbid conditions
3. Start with lowest effective dose and titrate every 2-4 weeks until therapeutic or patient has adverse side effects
4. Set realistic goals: 50% reduction in # of attacks or days, decrease in attack duration, improved response to acute therapy - DISCUSS EXPECTATIONS!
5. Change therapy if no response after 2 months, but realize it can take 6-8 weeks to see improvement
6. Can consider discontinuing therapy if headaches are controlled for 6-12 months, slow taper recommended

MEDICATION CONSIDERATIONS

- **Beta-Blockers**
  - Generally affordable, most commonly used class for prevention, good option for comorbid hypertension, angina, or ischemic heart disease
  - Contraindications: asthma, bradycardia, COPD
- **Anticonvulsants**
  - Good options for patients with seizure disorders or bipolar disorder, many possible side effects, generally $15-$200 monthly
  - Contraindications: pregnancy, liver disease, kidney stones
- **Antidepressants**
  - Good option for patients with depression, anxiety, insomnia
  - Avoid use in: cardiac disease, uncontrolled hypertension, seizure disorder
- **Menstrual Migraines**
  - Triptans recommended (frovatriptan, naratriptan, zolmitriptan)
  - Start therapy before time of expected onset to reduce severity
  - All are expensive, insurance coverage varies; Frova costs $664 for 9 tablets
  - CHC pills – newer cyclic contraceptives with 26 days of 10 mcg ethinyl estradiol and only two placebo pills; decrease the effect of estrogen withdrawal

OTHER THERAPIES

- **CCBs, ACE-Is, and ARBs** all have conflicting or inadequate data supporting migraine prevention.
- **Botox** is ineffective and should not be offered for preventing episodic migraine, though there is some evidence it may be beneficial for chronic migraines
- **Calcitonin Gene-Related Peptide Therapy**
  - Binds to the calcitonin gene-related peptide receptor which mediates migraine pain transmission
  - Erenumab (Aimovig) was the first monoclonal antibody approved in May 2018
  - cost approximately $570 monthly
  - Unknown long-term effectiveness and adverse effects
  - Others approved include Ajovy and Emgality
- **Complementary Therapy**
  - Petasites from butterbur plant (50-75mg daily), riboflavin (400mg daily), feverfew = probably effective
  - Coenzyme Q10 (100mg TID) and magnesium dicitrate (600mg daily) = possibly effective

CASE CONTINUED

Mrs. James is a 33 year old female with PMH of hypertension and depression presents to the clinic with complaint of headaches. Patient says she thinks she has migraines, but isn't sure. She knows her mother had many headaches throughout her life. The headaches are often worse around her menstrual cycle, but thinks she has been averaging about 1 headache every week for the last 2 months. Her headaches last for 7-8 hours, are on the right side, and are associated nausea and photophobia.

BP 147/90, HR 85, vitals otherwise normal

Medications: Fluoxetine, Tylenol, Ibuprofen

Normal neuro exam

❖ Consider starting metoprolol or propranolol, switching to venlafaxine instead of fluoxetine, or eventually considering triptan (Frova) for menstrual migraines

- Would you give her any medications for acute therapy?

ACUTE MIGRAINE TREATMENT

1ST LINE THERAPY

- NSAIDS and acetaminophen
- Triptans (Level A)
  - Sumatriptan
  - Almotriptan
  - Eletriptan
  - Frovatriptan
  - Zolmitirptan
- Combined Triptan + Naproxen 500mg

2ND LINE THERAPY

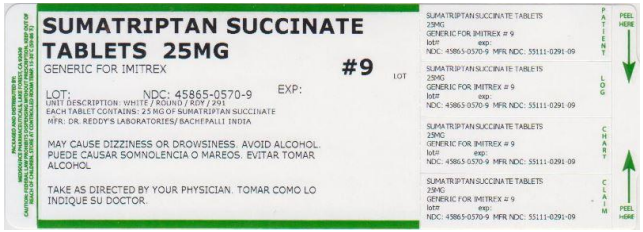
- Antiemetics
  - Chlorpromazine
  - Droperidol
  - Metoclopramide (Reglan)
  - Prochlorperazine
  - Promethazine
- Intranasal Dihydroergotamine
- Ketorolac

❖ Pregnancy: Acetaminophen and metoclopramide (Reglan) are the only treatments considered safe. Triptans have increased risk of uterine atony and blood loss during labor.

TRIPTANS

- 5-hydroxytryptamine receptor agonists that cause intracranial vasoconstriction
- Patient may respond to different triptans depending on genetic factors
- Best if taken early in an attack
- Should take at the onset of pain versus onset of aura
- All have strong evidence of effectiveness
- Sumatriptan – most studied; subcutaneous has the lowest NNT of 2, and oral dosages have a NNT of 4-6
- Sumatriptan and Rizatriptan are the cheapest
- **Sumatriptan dosing**:
  - oral 50mg, max of 200mg in 24 hours; can give q 2hrs
  - subcutaneous 6mg, max of 12mg in 24 hours; can give q 1hr
  - Intranasal is also an option

❖ **Contraindications:**
Ischemic heart disease, Coronary artery vasospasm, Peripheral vascular disease, Uncontrolled hypertension, WPW, cardiac arrhythmias, Hypersensitivity



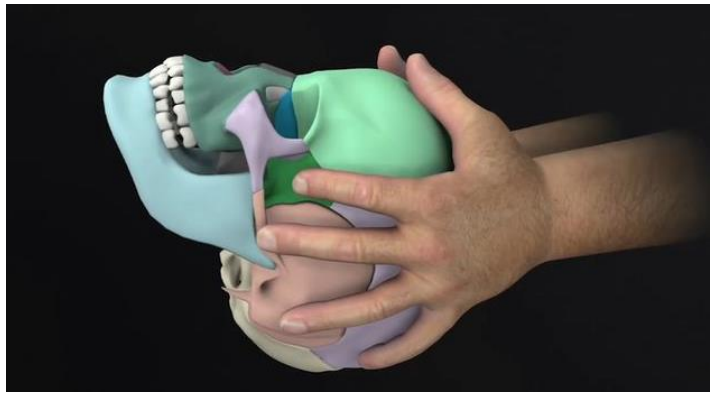
OSTEOPATHIC MANIPULATIVE THERAPY

- Avoid active and direct treatments during an acute attack
- Limited studies in the U.S.
- OMT can be a great adjunctive therapy that improves HRQoL
- Techniques to consider:
  - Suboccipital Release
  - Soft tissue of C-spine and T-spine
  - Strain-Counterstrain
  - BLT
  - Passive stretching
  - Craniosacral Techniques

CRANIAL OMT

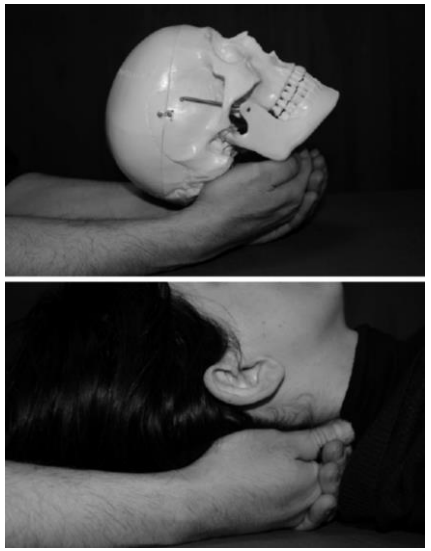
Vault Hold

- Thumbs on the forehead
- Index fingers on the temple
- Middle fingers in front of ears
- Ring fingers behind the ears
- Pinky fingers on the occiput



CV4 Compression Technique

- Restores primary respiratory movement of the cranium
- Medial and cephalad traction with cranial extension
- Goal is to find the “still point” where tissues soften



Venous Sinus Drainage

- Start at transverse sinus, apply lateral traction and tension, wait for the softening
- Then go to confluence of sinuses, occipital sinus, superior sagittal sinus, and frontal sinus

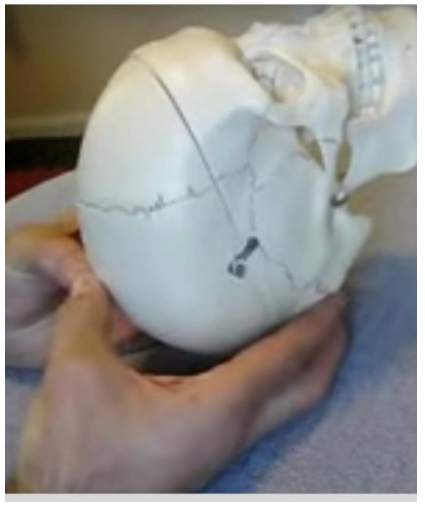


Photo from Scienze e Ricerche

REFRACTORY MIGRAINE THERAPY

- IV dexamethasone 10-25mg
- IV Dihydroergotamine 1mg (DHE 45) – can cause severe nausea
- IV Magnesium Sulfate – only for migraine with aura, pregnancy
- Opioids
- IV Valproate

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QUESTIONS OR COMMENTS??

THANK YOU!