1 – 2:15 pm

**Migraine Headaches: Tools for Successful Management**

**SPEAKER**
**M. Susan Burke, MD, FACP**

## Presenter Disclosure Information

**The following relationships exist related to this presentation:**

- M. Susan Burke, FACP, MD: Speakers Bureau for Merck & Co., Inc.

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# Migraine Headaches: Tools for Successful Management

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**Sydney Kimmel Medical College of Thomas Jefferson University**

## Learning Objectives

- Improve the identification of migraines in the patient with recurring HA and disability.
- Apply the latest evidence-based recommendations for preventive and abortive migraine treatment.
- Recommend complementary and alternative therapies when indicated.

## An Old Problem

- Trepanation to relieve headache carried out since 7,000 years BC
- 20-cm long stone chisel used to penetrate skull to relieve pain; some have had multiple procedures done
- Hippocrates wrote specific instructions regarding methods to performing trepanation for headache

http://www.trepan.com/history.html. Accessed 5/13/07.

## Burden of Disease
### A Seven Class Disability Rating System

| Disability Class | Severity Weight | Indicator Conditions |
|---|---|---|
| 1 | 0.00-0.02 | Vitiligo of face, weight for height less than 2 SDs |
| 2 | 0.02-0.12 | Watery diarrhea, severe sore throat, severe anemia |
| 3 | 0.12-0.24 | Radius fracture in a stiff cast, infertility, erectile dysfunction, rheumatoid arthritis, angina |
| 4 | 0.24-0.36 | Below-the-knee amputation, deafness |
| 5 | 0.36-0.50 | Rectovaginal fistula, mild mental retardation, Down syndrome |
| 6 | 0.50-0.70 | Unipolar major depression, blindness, paraplegia |
| 7 | 0.70-1.00 | Active psychosis, dementia, severe migraine, quadriplegia |

Menken M, Munsat TL, Toole JF. *Arch Neurol.* Mar 2000;57:418-420.

## Why We Should Care About Migraines?

- They produce severe disability[1,2]
- Are underdiagnosed and undertreated, often resulting in chronic migraine[1,2]
- Suboptimal "acute quick-fixes" & overuse of any drug may lead to chronic migraines[3,4]
- Frequent migraines can produce brain changes, CV morbidity and mortality[5,6]

1. Lipton RB, et al. *Headache*. 2001;41:646-57. 2. Bigal ME, et al. *Cephalalgia*. 2006;26:43-49. 3. Scher AL, et al. *Pain*. 2003;16:81-89. 4. Bigal ME, Lipton RB. *Headache*. 2006;46:1334-43. 5. Kruitt, et al. *JAMA* 2004; 291: 427-34. 6. Kurth T, et al. *JAMA*. 2006;296:283-291.

## Rita, a 31-year-old mother

- Asks for help with her sinus headaches. She has been getting them for several years but they are occurring almost daily now
- Predominantly frontal and maxillary in location; not throbbing
- Takes acetaminophen almost daily, along with pseudoephedrine preparations and occasional loratadine when she has watery eyes and nasal congestion

What else do you need to know?

## Headache Screening: Traditional History Method

**Timing/Frequency**
– First onset/duration/time of day/ relationship to menses

**Exacerbating factors/triggers**
– Activity, cough, neck position, foods, alcohol, sleep, etc.

**Location**
– Variable, fixed site, hemicranial

**Intensity**
– Severity, disability

**Nature**
– Pulsatile, "ice pick," steadily increasing

**Associated symptoms**
- Visual
- Motor
- Sensory
- GI
- Nasal

Diagnosis and Treatment of Headache. Bloomington, MN: Institute for Clinical Systems Improvement (ICSI); 2009

## Headache Screening: Standard Examination

- Observe the patient walking
- Assess symmetry of CN, motor, sensory, coordination, DTRs
- Observe patient's body language (eye contact, mood)
- Palpate head, arteries, trigger points
- Examine neck for stiffness and ROM
- Perform fundoscopic exam
- Examine oral cavity/TMJ

Diagnosis and Treatment of Headache. Bloomington, MN: Institute for Clinical Systems Improvement (ICSI); 2009.

## Red Flags and SSNOOP

- Systemic symptoms: fever, weight loss
- Secondary risk factors: HIV, cancer
- Neurologic symptoms or signs
- Onset: new, sudden, abrupt, or split-second
- Older: especially > 40 years
- Pattern change:
  - Progressive HA with loss of HA-free periods
  - HA changes type or is unclassifiable

**Diagnostic testing indicated if any red flags are present**

Dodick D. *Adv Stud Med*. 2003;3:87-92.

## Green Flags and Comfort Signs

- Stable pattern > 6 mo
- Long-standing HA history
- Family history of similar HA
- Normal exams
- Consistently triggered by
  - Hormonal cycle
  - Specific sensory input
  - Weather changes

**Diagnostic testing not indicated if only green flags present**

## Diagnostic Tests

CT or MRI? With or without contrast?

- **Yield minimal without neurologic signs: < 1% identify cause for HA**
- MRI: greater detail, more false positives
- MRI for posterior fossa disease
- MRI + MRA for suspected aneurysm/other vascular lesions
- CT without contrast to R/O subarachnoid hemorrhage

Weigh radiation exposure with CT, renal contrast concerns with CT and MRI vs. potential yield of study

Ropper A, Brown R, eds. *Adams and Victor's Principles of Neurology*. Eighth ed. New York, NY: McGraw-Hill; 2005:16-21. Avitzur O. *Neurology Today*. 2013;13(4):22–24.

## Sinus Headache = Migraine With Sinus Symptoms

Summit[1]
Self-Diagnosis Sinus Study
2971 with self-diagnosed recurrent sinus headache

SAMS[2]
Sinus Allergy & Migraine Study
100 with self-diagnosed recurrent sinus headache

86%-88% with self-diagnosis of sinus headache actually have ICHD* migraine or probable migraine headache

***International Conference Headache Disorders/International Headache Classification from International Headache Society (ICS)[3]**

1. Schreiber CP, et al. *Arch Intern Med*. 2004;164(16):1769-1772.
2. Eross E, et al. *Headache*. 2007;47(2):213-224.
3. International Headache Society. IHS Classification ICHD-II. http://ihs-classification.org/en/02_klassifikation/01_inhalt

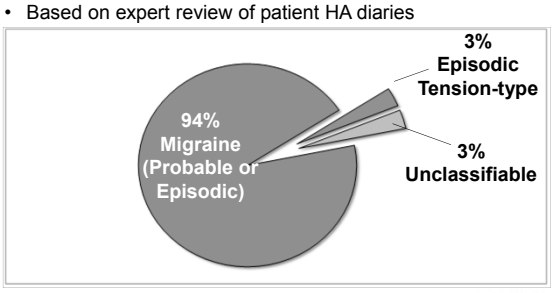
## Criteria for True "Sinus" Headache

- Major factors
  - Purulence in nasal cavity on exam
  - Facial pain/pressure/congestion
  - Nasal obstruction/blockage/discharge
  - Fever (in acute only)
  - Hyposmia/anosmia
- Minor factors
  - Headache
  - Dental pain
  - Fever
  - Cough
  - Halitosis
  - Ear pain/pressure/fullness
  - Fatigue

American Academy of Otolaryngology– Head and Neck Surgery. Lanza, et al. *Otolaryngol Head Neck Surg*.1997;117 (pt 2) S1-S7.

## HA Prevalence in Primary Care

- Prevalence of all HAs that prompt patients to see their PCP
- Based on expert review of patient HA diaries




Adapted from Tepper SJ, et al. *Headache*. 2004;44(9):856-864.

Recurring moderate to severe headache is migraine until proven otherwise

## Migraine Recognition by ICHD Criteria

**Migraine without Aura (1.1)**

- **At least 5 attacks with:**
- **At least 2 of the following:**
  - **Unilateral**
  - **Pulsating**
  - **Moderate to severe pain**
  - **Aggravated by or avoidance of routine physical activity**
- **At least 1 of the following**
  - **Nausea and/or vomiting**
  - **Photo and phonophobia**
- **No organic disease**

**Migraine with Aura (1.2.1-6)**

- **At least 2 attacks with:**
- **At least 1 fully reversible symptom without motor :**
  - **Visual + and/or -**
  - **Sensory + and/or -**
  - **Dysphasic speech**
- **At least 2 of the following:**
  - **At least one aura symptom develops gradually over ≥5 min or different symptoms occur in succession over ≥5 min**
  - **Each symptom lasts ≥5 and ≤60 min**
- **1.1 begins with aura or in ≤60 min**
- **No organic disease**

ICHD = International Classification of Headache Disorders. *Cephalalgia*. 2004;8(suppl 1):S24-26.

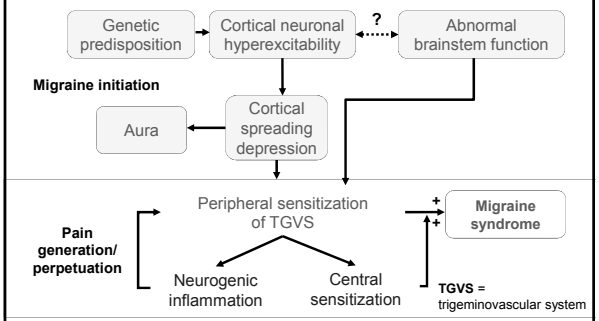
## International Headache Society Criteria for Chronic Migraine

A. HA ≥15 days/mo for ≥ 3 months
B. Occurring in those with ≥ five attacks c/w migraine w/o aura
C. On ≥8 days per month for ≥ 3 months HA fulfilled C1 and/or C2:
   1) Has at least two:
      a) unilateral location
      b) pulsating quality
      c) moderate or severe pain intensity
      d) aggravated by/causing to avoid routine physical activities

      And at least one:
      a) nausea and/or vomiting
      b) photophobia and phonophobia
   2) Treated and relieved by triptan(s) or ergot before expected development of C1 above
D. No medication overuse and not attributed to another disorder

http://ihs-classification.org/en/02_klassifikation/05_anhang/01.05.01_anhang.html. Accessed April 22. 2013.

## Migraine Pathophysiology: Proposed Mechanisms




Adapted courtesy of Pietrobon D. *Neuroscientist*. 2005;11:373-386.

## Understanding the Patient With Migraine

Commonly reported symptoms at various phases of migraine

| Prodrome |
|---|
| Fatigue |
| Cognitive difficulty |
| Heightened sensory awareness |
| Muscle pain |
| Food craving |
| Fluid retention |
| Mood changes |
| Anorexia |
| Nasal congestion |

| Aura* |
|---|
| Scotoma |
| Fortification spectrum |
| Paresthesias |
| Weakness |
| Vertigo |
| Tinnitus |
| Dysarthria |

*Symptoms utilized by the International Headache Society's diagnostic criteria for migraine

## Understanding the Patient With Migraine

Commonly reported symptoms at various phases of migraine (continued)

| Mild |
|---|
| Dull headache |
| Pressure |
| Mild sensory sensitivity |
| Sinus congestion/pressure |
| Muscle pain |
| Anorexia |
| Fatigue |
| Aura |

| Moderate/Severe |
|---|
| Throbbing headache* |
| Headache aggravated by activity* |
| Nausea* |
| Vomiting* |
| Photophobia* |
| Phonophobia* |
| Osmophobia |
| Fatigue |
| Aura |
| Lacrimation |
| Rhinorrhea |
| Cognitive impairment |

| Postdrome |
|---|
| Fatigue |
| Anorexia |
| Poor concentration |
| Muscle pain |

*Symptoms utilized by the International Headache Society's diagnostic criteria for migraine

## Migraine-Associated Nausea

- Nausea is the single most important symptom identifier for migraine
- Validated in community-based, college student, neurology clinic and headache clinic
  - Overall sensitivity: 81%
  - Overall specificity: 83%

Martin VT, et al. *Headache*. 2005;45:1102-1112.

## Closing the HA Diagnosis Gap
## *ID Migraine™ – A Validated Screener*

**Choose Yes or No**

- When you have a HA, do you feel nauseated or sick to your stomach?
- When you have a HA, does light bother you (a lot more than when you don't have a HA)?
- During the last 3 months, have your HAs limited your ability to work, study, or do what you needed to do?

2/3 Yes for migraine:
Sensitivity: 0.81
**Specificity: 0.75**

=

**Positive predictive value of 93% in primary care setting**

Lipton RB, et al. *Neurology*. 2003;61(3):375-382.

## Closing the HA Diagnosis Gap: POUND Mnemonic

POUND mnemonic useful for the diagnosis of migraine:

- Pulsatile
- One-day duration (episodes lasting 4-72 hours if untreated)
- Unilateral
- Nausea/vomiting
- Disabling

The likelihood ratio (LR) for migraine by the number of POUND criteria:

4 of 5 criteria: LR(+) = 24
3 of 5 criteria: LR(+) = 3.5
2 or fewer criteria: LR(–) = 0.41

Detsky ME, et al. *JAMA*. 2006;296:1274-1283.

## The MIDAS Questionnaire

| | | |
|---|---|---|
| **1** On how many days in the last 3 months did you miss work or school because of your **headache**? | | Days |
| **2** How many days in the last 3 months was your productivity at work or school reduced by half or more because of your **headaches**? *(Do not include days you counted in question 1 where you missed work or school)* | | Days |
| **3** On how many days in the last 3 months did you not do household work because of your **headaches**? | | Days |
| **4** How many days in the last 3 months was your productivity in household work reduced by half or more because of your **headaches**? *(Do not include days you counted in question 1 where you did not do household work)* | | Days |
| **5** On how many days in the last 3 months did you miss family, social, or leisure activities because of your **headaches**? | | Days |
| **Score: Little or no disability (0-6 ) → severe disability (21+)** | | |
| **A** On how many days in the last 3 months did you have a **headache**? *(If a headache lasted more than 1 day, count each day)* | | Days |
| **B** On a scale of 0-10, on average, how painful were these **headaches**? *(Where 0=no pain at all and 10=pain as bad as it can be)* | | |

Lipton RB, et al. *JAMA*. 2000;284:2599-2605.

## Rethink Your Approach to Headache Complaints

- Ask open ended questions:
  - "Describe your worst headache"
    - If it's a migraine, then *that's* their diagnosis
      - Don't think they have different HAs like sinus, tension *and* migraine
  - "How do you feel between headaches?"
    - If not normal, they likely have a migraine and may also have transformed or have chronic migraine
- Use a migraine screener, then move forward with treatment plan

## Clinical Pearls

- Migraine patients can experience many different types of HAs from the same underlying mechanism
- Prompt treatment may restore normal neurologic function and prevent the evolution of episodic to chronic HA

## Principles of Migraine Management

- Establish realistic expectations
  - ≈50% reduction with prevention
  - ≥70% relief with acute treatment
- **THERE IS NO "CURE"!**

## Principles of Management for the Patient

- Encourage patients to participate in their care
  - Accept that some Rx side effects are inevitable
  - Optimize behavioral management
  - Acute: Treat early, ≤2 days/week or 9 days/mo.
  - Prevention: follow guidelines for drug/complementary/alternative treatments
  - Regular patient follow-up with dose/drug/combination changes as needed

## Roger, a 31-year-old CPA

- Has history of very occasional migraines since his early twenties which he manages with a triptan
- Started new job 6 months ago, requiring him to work long hours
- Headaches have increased and now occur on most weekend days for the last few months

What might be contributing to the increase in his headaches?

## Behavioral Strategies

1. **Sleep** – 6 to 8 hours, consistent within 1 hour to bed/rise (even weekends!)
2. **Exercise** – Any better than none; aerobic >> nonaerobic
3. **Stress management**– Biofeedback/relaxation, cognitive-behavioral, time management
4. **↓Substance use** – Taper caffeine to maximum 1-6 oz cup – Eliminate artificial sweeteners, decongestants, smoking
5. **Eat** – Fresh, non-processed, small, frequent healthy meals/snacks

## Headache Diary and Calendar

- Have patient note HA characteristics, including intensity, timing, duration, triggers and medications used
- Consider withdrawal of all processed foods for 1-2 weeks; if HAs are better, reintroduce individual additives slowly

## Management of Migraine with Behavioral Strategies

**Evidence-based Medicine**
**Specific Treatment Recommendations**

- ✓ All types: eg, relaxation, EMG biofeedback, cognitive behavioral therapy - may be considered as treatment options for prevention (Grade A)
- ✓ Behavioral therapy combined with preventive drug therapy achieves additional improvement (Grade B)

Courtesy of Donald Penzien, PhD, US Headache Consortium Guidelines, 2000. www.aan.com/professionals/practice/pdfs/gl0089.pdf. Accessed March 21, 2009.

## Abortive Treatments

- Administer early, rapidly, and consistently– ideally within 15 minutes
  - Minimizes use of backup and rescue medication
- Consider formulation (route, onset, duration of action) based on symptoms
- Note: can't "cure" *every* HA with "quick fixes"
  - Takes time, patience, and follow-up
- Avoid both under treatment and overtreatment with acute medications

Cady R, et al. *Headache.* 2004;44:426-435.

## Abortive Agents: General Principles

- Treat 2-3 attacks with agent to assess efficacy
  - If little success, consider:
    - Different agent or route in same class
    - Adding co-therapy
    - Switching to different class
- *Use abortive agent no more than*
  - 2-3 days/week
  - 9 days/month
  - 12-15 doses/month *of anything*

Evidence-Based Guidelines for Migraine Headache in the Primary Care Setting: Pharmacological Management of Acute Attacks. http://www.aan.com/professionals/practice/pdfs/gl0087.pdf. Accessed December 17, 2007.

## Abortive Agents

Evidence-based guidelines adopted by AAFP, ACP-ASIM, and AAN

- **First line: NSAIDs**
- Triptans (or dihydroergotamine) for NSAID intolerance/unresponsiveness
- No evidence for butalbital compounds in migraine
- Little evidence for isometheptene compounds
- Opioids "reserved for use when others cannot be used"
  - May worsen central sensitization; should be avoided
- Metoclopramide recommended for oral therapies as prokinetic if gastric stasis present*

AAFP = American Academy of Family Physicians. ACP-ASIM = American College of Physicians-American Society of Internal Medicine. ANN = American Academy of Neurology.
* European Headache Federation recommendation

Snow V, et al. *Ann Int Med*. 2002;137 840–849; Jakubowski M, et al. *Headache*. 2005;45:850–861.

## Triptan Selection

- Start with formulary agent; generics available for some
- Chose formulation: oral, wafer, nasal, SC, based on symptoms or HA presentation
  - Oral formulations more alike than different
  - Use early when HA still mild, if possible
  - Optimize dose (typically maximum)
- Avoid if ≥ 3 cardiac risk factors, uncontrolled hypertension, severe liver disease

SC = subcutaneous

Dodick D, et al. *Headache*. 2004;44:414-425.

## Combination Abortive Therapies

- Consider drugs which may complement each other
  - Triptan + NSAID
  - Acetaminophen/ASA/caffeine
  - NSAID + caffeine
  - Metoclopramide + triptan *or* NSAID *or* ASA
- Tailor to coincident symptoms

Silberstein SD, et al. *Postgrad Med*. 2006, Apr., Spec No: 20-6.

## Migraine Prevention

Many patients qualify,
few are chosen….

**…Offer preventive treatment early**

## Guidelines for Initiating Migraine Prevention Therapy

- ≥2 attacks/mo with disability totaling >3 d/mo
- Recurring HA significantly interfering with patient's daily routine despite acute Rx
- Acute medications overused >2 d/wk, ineffective, intolerable side effects, or contraindicated
- Presence of uncommon migraine conditions: hemiplegic migraine, prolonged aura
- Patient preference, cost considerations or intolerance to acute agents

Ramadan NM. Evidence-based guidelines. http://www.aan.com. Accessed December 18, 2007; Silberstein SD, et al. Wolff's Headache and Other Head Pain. 2001.

## Goals of Prevention

1. Fewer HAs
   – Best expectation: 50% reduction in ~50% of HAs
2. More/better response to acute "quick fix" drugs
   – Reduced HA impact (duration, intensity, symptoms)
3. Restoration of function
   – Less disability related to work/family/home activities

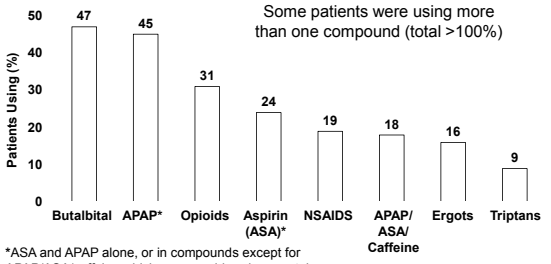
Silberstein SD. *Curr Opin Neurol.* 2005;18:289–292.

## Medication-Overuse Headache (Formerly Rebound Headache)

- A pharmacologically maintained HA
- >15 d/mo with HA
- Regular acute drug use >10 d/mo (>15 d for simple analgesics) for >3 mo
- HA worsens over time of overuse
- HA resolves or reverts to previous pattern within 2 mo of overuse elimination

http://www.americanheadachesociety.org/assets/1/7/Stephen_Silberstein_-_Medication_Overuse_Headache.pdf Accessed April 7, 2013.

## Medication Overuse Headache Hierarchy of Common Culprits




*ASA and APAP alone, or in compounds except for APAP/ASA/caffeine,which was considered separately.

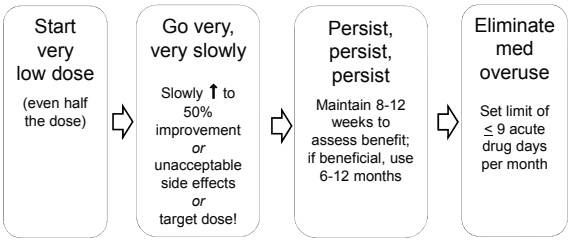
Bigal ME, et al. *Cephalalgia.* 2004;24:483-490.

## Prevention Opportunities

- Preventive treatment can be:
  – Preemptive or prodromal
    (eg, migraine induced by exercise—use indomethacin 1-2 h prior to exercise but don't overuse!)
  – Short-term or cyclic
    (eg, air travel or menstrual related—NSAID, triptan, or hormonal intervention)
  – Long-term
    (eg, >8-9 d/mo with HA; control for 12 mo)

Lane, JC. *Semin Neurol.* 2000;20:195-200.

## Prevention: General Concepts




Silberstein, SD et al. *Headache in Clinical Practice.* 2nd ed. 2002.

## Migraine Preventive Therapies
US Classification and Level of Evidence

Level A: Medications with *established* efficacy*

- **Antiepileptic drugs**
  - Divalproex sodium
  - Sodium valproate
  - Topiramate
- **Beta blockers**
  - Metoprolol
  - Propranolol
  - Timolol
- **Triptans**
  - Frovatriptan (for menstrual-related migraine)

* in ≥ 2 Class I Trials

Not all agents are approved for migraine prevention

Silberstein SD, et al. *Neurology* 2012;78;1337-1345.

## Migraine Preventive Therapies
US Classification and Level of Evidence

Level B: Medications which are *probably* effective*

- **Antidepressants/SSRI/ SSNRI/TCA**
  - Amitriptyline
  - Venlafaxine
- **Beta blockers**
  - Atenolol
  - Nadolol
- **Triptans**
  - Naratriptan
  - Zolmitriptan

  (for menstrual-related migraine)

* in 1 Class I or 2 Class II studies

Not all agents are approved for migraine prevention

Silberstein SD, et al. *Neurology* 2012;78;1337-1345.

## Migraine Preventive Therapies
US Classification and Level of Evidence

Level C: Medications which are *possibly* effective*

- **ACE inhibitors**
  - Lisinopril
- **Angiotensin receptor blockers**
  - Candesartan
- **Alpha agonists**
  - Clonidine
  - Guanfacine
- **Antiepileptic drugs**
  - Carbamazepine
- **Beta blockers**
  - Nebivolol
  - Pindolol
- **Antihistamines**
  - Cyproheptadine

* in 1 Class II Study

Not approved for migraine prevention

Silberstein SD, et al. *Neurology* 2012;78;1337-1345.

## Migraine Preventive Therapies
US Classification and Level of Evidence

Agents with *inadequate* data or *probably* ineffective

**Inadequate Data**
- Verapamil
- Nicardipine
- Nifedepine
- Fluoxetine
- Acetazolamide
- Gabapentin

**Probably Ineffective**
- Lamotrigine
- Oxcarbazepine
- Clonazepam
- Nabumatone
- Telemisartan

Not approved for migraine prevention

Silberstein SD, et al. *Neurology* 2012;78;1337-1345.

## Selection of Prevention Medication

**Consider patient comorbidities**

- Beta blockers
  - Hypertension, angina
- Anticonvulsants
  - Seizures, mood disorders (valproate), obesity (topiramate)
- Antidepressants
  - Underweight, trouble sleeping, depression

## Migraines and Pregnancy

- 50%–80% of migraineurs note decreased HA frequency after 1st trimester
- New-onset migraines in pregnancy warrant workup to r/o secondary causes
- Optimize trigger management and nonpharmacologic treatments
  - Massage, relaxation
- Acetaminophen, metoclopramide, (NSAIDS before third trimester), triptans
- If prevention is needed, use category C drugs if benefits outweigh risks*
  - propranolol - verapamil - ?magnesium?

Tozer BS, et al. *Mayo Clin Proc.* August 2006;81:1086-1092
http://www.aafp.org/afp/2011/0201/p271.pdf. Accessed April 22, 2013.

## NSAIDs/Complementary Treatments for Migraine Prevention: Level of Evidence

Level A: Established efficacy
- Butterbur (*Petasites hybridus)*

Level B: Probable efficacy
- NSAIDs - ibuprofen, naproxen, fenoprofen, ketoprofen
- Herbal, vitamins, minerals, other
  - Magnesium, riboflavin, MIG-99 (feverfew), histamine SC

Level C: Possible efficacy
- NSAIDs – flurbiprofen, mefenamic acid
- Herbal, vitamins, minerals, other
  - Co-enzyme Q10, estrogen

Not approved for migraine prevention

Holland S, et al. *Neurology.* April 24, 2012 ;78 (17):1346-1353.

## Commonly Used Alternative Therapies

- Butterbur (petasite): 50-75 mg BID
- Oral magnesium: 400-600 mg/d
- Vitamin $B_2$ (riboflavin): 400 mg/d
- Feverfew: No standardized preparations
- NSAIDs: naproxen 500 mg BID and others
- Co-enzyme Q-10: 100 mg TID effective in small trial

http://www.neurology.org/content/78/17/1346.full.pdf+html. Accessed March 10, 2013.

## Acupuncture

- Appears effective for migraine prophylaxis
  - May be slightly better than pharmacotherapy
  - Sham just as effective as real
  - Strength of Recommendation = A

http://summaries.cochrane.org/CD001218/acupuncture-for-migraine-prophylaxis. Accessed March 10, 2013.

## Osteopathic or Spinal Manual Therapy (OMT or SMT)

- Studies suggest spinal, or osteopathic manipulation may be beneficial for migraines[1]
  - Studies difficult to standardize and randomize due to varying nature and presentations of migraine headaches
- Head to head trial in 218 patients for prophylaxis of migraines[2]:
  - 8 wks of amitriptyline vs SMT had equivalent efficacy
  - Efficacy not better with combination
  - Efficacy better in SMT group 4 wks after both therapies stopped
  - SMT better tolerated than amitriptyline

1. Bronfort G, et al. J Manipulative Physiol Ther. 2001;24(7):457-66
2. Nelson CF et al. J Manipulative Physiol Ther. 1998;21(8):511-9

## Additional Alternative Considerations

- Exercise
- Yoga
- Tai Chi
- Homeopathy
- Hypnotherapy
- Cold therapy
- Massage
- Physical therapy

## Chronic Migraine Treatment

- OnabotulinumtoxinA (botox)
  - Approved for prophylaxis of chronic migraine (≥ 15 headache days/month)
  - 8-9 fewer HA compared to 6-7 with placebo
  - 31 injection sites into head/neck Q 3 mo.
  - Boxed warning re: possibility for spread causing weakness in distant area(s)

http://www.accessdata.fda.gov/drugsatfda_docs/label/2013/103000s5251lbl.pdf

## Summary

- **Recurring HA with disability is migraine until proven otherwise**
- Both clinician and patient must have realistic expectations
- Use of acute meds > 9 days/month can lead to medication overuse
  - Avoid opiate and barbiturate use
- Chronic migraines can be reduced with prevention strategies, *so*
- Offer preventive treatment early