PRIMARY CARE AND HEADACHE

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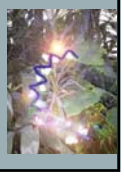
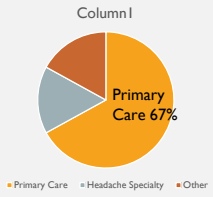


WHERE DO THOSE WITH HEADACHE SEEK MEDICAL CARE?



DISCLOSURES

- Travel reimbursement from the American Academy of Neurology for Guideline Subcommittee Work
- Honorarium from the CDI Quality Group for development of Appropriate Use Criteria for Imaging in Headache
- Talk includes off label use of treatments for migraine treatment (will be noted in red)

HEADACHE IS COMMON

- 70% of adults
- 40% of children
- 4% of office visits
  - More common than asthma diabetes combined.

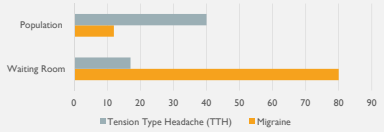
Maizels M. Headache 2002;42:747-753

OUTLINE

- Identify misdiagnosed migraine
- Recognize the key principles of acute treatment
  - List factors promoting chronic migraine & trigger
  - Review principles of Acute Care
  - Utilize preventative therapies

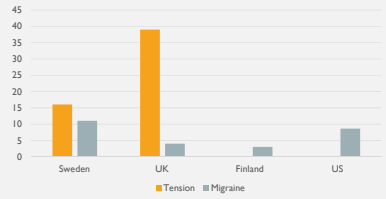
PREVALENCE OF PRIMARY HEADACHES TYPES IN WAITING ROOM

Migraine is 6.3X more common than tension (TTH) in waiting rooms. TTH is 3X more common in the general population



Lipton Neurology 2003

HEADACHE PREVALENCE IN CHILDREN



1ST STEP MAKING THE CORRECT DIAGNOSIS

MIGRAINE WITHOUT AURA

- 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.

In children attacks are 2-72 hours

- photo & phonophobia can be inferred by behavior

IHS CLASSIFICATION ICHD-3 BETA

SULTANS

- S Severe
- U Unilateral
- L
- T Throbbing
- A Activity avoids / aggravates
- N Nausea
- S Sensitive light & sound

- Migraine

2 of these 4

And 1 of these 2 symptoms

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3 QUESTIONS FOR MIGRAINE ID

1. Do you get nauseous when you have a headache?
2. Does light bother you when you have a headache?
3. Have you missed work, school or leisure activities in the last three months due to a headache?

If yes to 2 PPV = 93%

If yes to all PPV = 98%

Lipton, Neurology 2003

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MIGRAINE DIAGNOSIS

- Recurrent headaches – 5 or more
- Disabling
- Normal neurological exam
  - Including a fundoscopic exam
- No headache alarms

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AURA

- fully reversible
- visual, sensory or other central nervous system symptoms
- usually develop gradually
- usually followed by headache & associated migraine symptoms

HEADACHE RED FLAGS –SNOOP4

- **S**ystematic symptoms (fever or weight loss) or secondary risk factors (HIV, cancer)
- **N**eurologic symptoms or signs (stroke, tumor)
- **O**nset abrupt, peak < 1 minute (hemorrhage)
- **O**lder > 50 (giant cell arteritis)
- **P**revious headache history (new or change) progression or fundamental change in pattern
- **P**ostural or Positional (CSF pressure)
- **P**recipitated by cough, valsalva, exertion, sex (posterior fossa, sentinel bleed)
- **P**apilledema

Dodick DW, Adv Stud Med 2003, 5

THUNDERCLAP HEADACHE PEAK PAIN < 1 MINUTE (AWAKE)

- Differential Diagnosis
  - Most common causes
    - Subarachnoid Hemorrhage
    - RCVS
  - Others
    - Venous Thrombosis
    - Arterial Dissection
    - Spontaneous Intracranial Hypotension
    - Pituitary Apoplexy
    - Colloid Cyst
- Reversible cerebral vasoconstriction syndrome (RCVS)
  - Reversible segmental narrowing of cerebral arteries
  - Recurrent or Single (1st time) thunderclap headache.
  - Initial angiography is normal 50% of the time.

MORNING HEADACHE

- Caution: Can be secondary or primary
  - Other questions Nausea? Blurred vision?
- Characteristic of increased intracranial pressure
  - Tumor
  - Infection
- Can be migraine
- Key –
  - New or subacute progression?
  - Typical pattern

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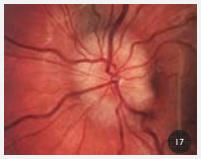
IDIOPATHIC INTRACRANIAL HYPERTENSION (PSEUDOTUMOR CEREBRI)

- Headache (often more in AM, but very migraine like)
- Vision loss – often transient blurring with position change
- Papilledema
- Others: **pulsatile tinnitus**, photopia, diplopia



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GIANT CELL ARTERITIS

SYMPTOMS

- New headache
- Abrupt onset visual disturbance esp monocular vision loss
- jaw claudication
- Unexplained fever, anemia, or other constitutional symptoms and signs
- Elevated ESR, CRP
- Symptoms, history of PMR

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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
- Not better accounted for by other disease

SINUS HEADACHE VS MIGRAINE

- Of > 2500 "sinus" headache
- > 90% have migraine
- "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
- Spheniod is exception

- Schreiber et al. Diamond Headache and Educational Meeting, 2001

CHRONIC DAILY HEADACHE

Albert

- Near daily headache x 18mo
- Frontal/global ache & throb
- Uses hydrocodone most days

Chronic Daily Headache

Defined as 15 days a month, for 3 months or more

POSSIBLE CAUSES OF CHRONIC DAILY HEADACHE (>14 DAYS/MONTH FOR >3 MONTHS)

- Chronic Tension
- Cervical muscular or myofascial
- Chronic Migraine
- Medication Overuse

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CHRONIC MIGRAINE –SIMPLIFIED

ICHD-3B +CHRONIC MIGRAINE

- Headache >14 days a month for 3 months
- At least 5 prior attacks
- On at least 8 days/month headache fulfills criteria for migraine
  - Has 2 or more of following
    a) Unilateral b) throbbing
    c) Moderate of severe
    d) Aggravated by physical activity
  - And 1 or more of following
    a) Nausea and/or vomiting
    b) Photophobia and phonophobia
- Not attributed to another disorder
- Sub classified with or without medication overuse

SIMPLIFIED DIAGNOSIS

→ Diagnose chronic headache

→ Diagnose migraine or other syndrome

→ With or without medication overuse

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RISK FACTORS CHRONIC HEADACHE 3 PER 100

NOT EASILY MODIFIABLE

- Migraine
- Gender female
- Low education/SES
- Head injury

READILY MODIFIABLE

- Attack frequency
- Obesity
- Medication overuse
- Stressful life events
- Snoring (sleep apnea, sleep disturbance

Scher Pain 2003

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MEDICATION OVERUSE HEADACHE

- Until the late 1980s the diagnosis of medication overuse headache was unknown

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MEDICATION OVERUSE HEADACHE

- Headache, typically migraine
- Headache > 14 days/month for 3 months or more
- Use of
  - prescription analgesic > 9 days a month
  - over the counter analgesic > 14 days a month
- Use ongoing for 3 or more months
- Headache worsens as use of medication continues

- **The quantity of the substance does not matter**

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SUBSTANCES CAUSING MEDICATION OVERUSE HEADACHE

- Opioids
- Butalbital containing (Fioricet, Fiorinal)
- Analgesics/anti-pyretic
- Ergotamines
- Triptans
- NSAIDs

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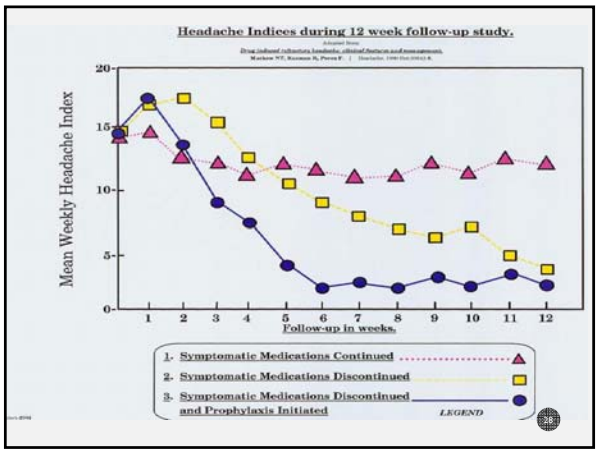
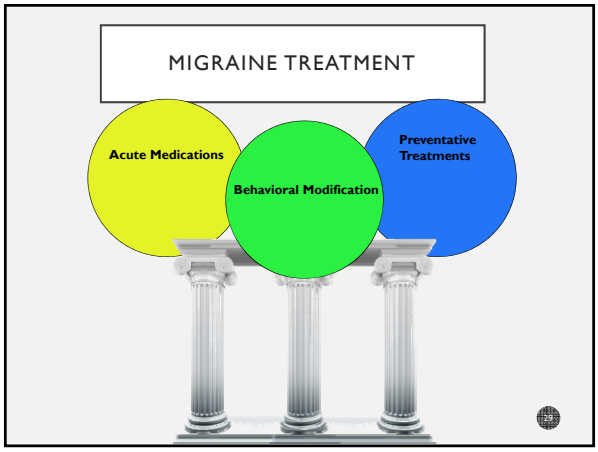
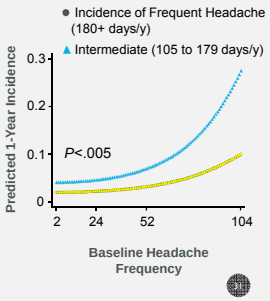

Headache Indices during 12 week follow-up study.
Mean Weekly Headache Index
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12
Follow-up in weeks.
1. Symptomatic Medications Continued
2. Symptomatic Medications Discontinued
3. Symptomatic Medications Discontinued and Prophylaxis Initiated
LEGEND


MIGRAINE TREATMENT
Acute Medications
Behavioral Modification
Preventative Treatments


MIGRAINE TREATMENT
BEHAVIORAL FACTORS
PREVENTION IS THE BEST TREATMENT

INCREASED FREQUENCY OF MIGRAINE

- Migraine frequency may increase over time in some individuals
- The risk of frequent headache increased nonlinearly with baseline headache frequency (P<.005)
- Identify patients at high risk for frequent headache
- Associated risk factors for frequent headache
  - Attack frequency
  - Obesity
  - Medication overuse
  - Stressful life events



Scher AI et al. *Pain*. 2003;106:81-89.

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MIGRAINE TRIGGERS

FOODS

- Caffeine or withdrawal
- Additives
- Alcohol
- Cheese
- Very idiosyncratic

OTHERS

- Stress
- Change in routine
- Hormonal changes
- Environment
- Hunger
- Dehydration
- Mood

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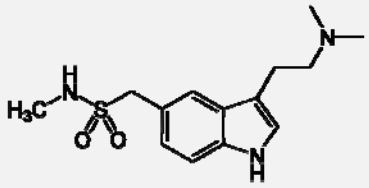
ACUTE MIGRAINE TREATMENT



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Triptans

- Most effective acute migraine treatment available
  - Treat individual attacks
  - Restore function
- Selective for certain idiopathic headaches
- Medications acting at serotonin 1B and 1D receptors

ACUTE MIGRAINE MEDICATIONS

GROUP 1: Well designed clinical trials show substantial effectiveness

Migraine Specific Medications	Nonspecific Medications
Triptans Naratriptan Rizatriptan Sumatriptan SC, IN, PO Zolmitriptan Almotriptan DHE - sc, im, in, iv (plus antiemetic)	Ibuprofen Naproxen sodium Prochlorperazine IV Aspirin Acetaminophen, aspirin, plus caffeine

US Headache Consortium

WHY NOT OPIOIDS ?

- **Several reasons not to administer opioids for headache**
  - Use is associated with an increased risk of medication overuse headache
  - Opioids do not affect inflammatory processes or neurovascular changes that occur in migraine.
  - May lead to early headache recurrence
  - Concerns about overuse and abuse.
  - Efficacy is less than other available medications

OUTPATIENT RX FOR MIGRAINE

- Don't use opioids or butalbital for migraine except as a last resort.
  - Don't use butalbital
  - Small quantities opioids

INITIAL ACUTE TREATMENT

Slow	Escalation	Fast
Low	Disability	High
Mild	Pain	Severe

- Nonspecific Therapy
  - NSAIDs
  - Combo analgesics
- Specific Therapy
  - Triptans
  - DHE

HOW TO CHOOSE AMONG THE TRIPTANS

- Cost & Formulary
  - Sumatriptan
  - Rizatriptan
  - Naratriptan
- Formulation/route of delivery
- Efficacy & side effects
  - Naratriptan tends toward fewer side effects and lesser efficacy
- Recurrence – rizatriptan

I. ROUTE: INJECTION, NASAL SPRAY, MELT, OR TABLET

Consider non-oral route when:

- Latency to peak headache minutes - injection
- Nausea/vomiting - Injection > nasal
- Oral medications fail - Injection > nasal
  - Gastroparesis with migraine

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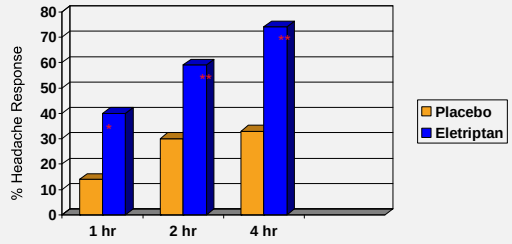
IF ONE TRIPTAN FAILS, WILL ANOTHER WORK?



* P< 0.001, ** p< 0.0001. Farkkila et al. Cephalalgia, 2003.

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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
- Accessory pathway arrhythmia
- Uncontrolled hypertension.

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CONTRAINDICATIONS

- Hemiplegic or basilar migraine.
- Use within 24 hrs another 5-HT_1 agonist, an ergotamine-containing or ergot-type medication
  - dihydroergotamine or methysergide.
- Severe renal or hepatic impairment.

TRIPTAN PRESCRIBING

- Sumatriptan 100 mg at migraine onset, again in 2 hours, if needed
- Up to 2 doses per 24 hours and 2 days per week.
- Use for 3 consecutive episodes before deemed as a failure.
  - But be sure to sue early in an attack

Triptan Prescribing Principles

- Correct dose
- Limit medication use to 9 days a month
  - Prevent medication overuse headache
- Treat early in the migraine

RECOMMENDED URGENT TREATMENT OPTIONS

IV

- 25mg diphenhydramine IV with 10 mg prochlorperazine IV

Or

25 mg diphenhydramine IV followed by 20 mg metoclopramide

- Ketorolac 30 mg IV with antiemetic of choice

IM OR SC

- Sumatriptan 6 mg IM

Or

DHE 1 mg IM + antiemetic of choice

- Diphenhydramine 25mg & prochlorperazine 10 mg IM

Or

- Diphenhydramine 25 mg IM & metochlorpramide 20 mg IM
- Ketoralac IM 30-60 mg + antiemetic of choice

CHOOSING THE RIGHT PREVENTATIVE THERAPY

- Treatments used to prevent migraine, not treat pain
- Taken whether migraine is present or not

When to consider preventative therapy

- 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
- Patient education is key to prevent cessation of therapy after a short period of time
  - Time course

General Principles I

- 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

General Principles II

- Start low and increase dose slowly
  - Use long acting formulations if needed
- Give each medication an adequate trial (2-3 months) at an appropriate dose
- Avoid interfering, overused, and contraindicated medication
- Evaluate therapy
  - Use diary
  - Attempt to taper and d/c Rx when headaches well controlled

Preventative Therapy - Drug Classes

- Anticonvulsants
- Antidepressants
- Beta-blockers
- Calcium Channel Blockers
- NSAIDS, vitamins/mineral/herbs
- Random others

PHARMACOLOGIC RECOMMENDATIONS

- **Level A.** The following medications are established as effective and should be offered for migraine prevention:
  - Antiepileptic drugs (AEDs): divalproex sodium, sodium valproate, topiramate
  - Beta-Blockers: metoprolol, propranolol, timolol
  - Botox for chronic, not episodic
- **Level B.** The following medications are probably effective and should be considered for migraine prevention:
  - Antidepressants: amitriptyline, venlafaxine
  - Beta-Blockers: atenolol, nadolol

WHAT ABOUT NORTRIPTYLINE?

- Limitations of evidence based medicine
- Amitriptyline is metabolized into nortriptyline

CIM RECOMMENDATIONS

- **Level B.** The following therapies are probably effective and should be considered for migraine prevention:
  - Riboflavin 400 mg daily, turns urine yellow
  - Magnesium oxide 400 mg daily - diarrhea
  - Feverfew various dosing
- Acupuncture – not included but recent Cochrane review shows efficacy in migraine

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IMAGING

- For migraine (with or without aura), tension-type headache, with normal neurological exam, neuroimaging is not indicated.
  - Includes patients with longstanding headache history who simply are having more frequent headaches
- CT head – urgent, acute, blood
- MRI more sensitive for other indications
  - Dr Advice is helpful

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