Pain Management for Primary Care

Series: Fourteen
Headache Pain

Module 14-1
Headache Pain

Module 14-1

Headache Pain

By the end of the module, you will be able to:

- Recognize the prevalence of headache pain.
- Identify red flags when evaluating patients with headaches.
- Differentiate between primary and secondary headache syndromes.
- Describe common headache features.
- Determine how to choose headache treatment approaches such as abortive and prophylactic medications.

We will review:

Topic One: Headache Types

Topic Two: Headache Clinical Evaluation

Topic Three: Headache Treatment Options

Lead Authoring Subject Matter Experts

Veterans Health Administration
Dr. Kathy Gardner
Dr. Friedhelm Sandbrink

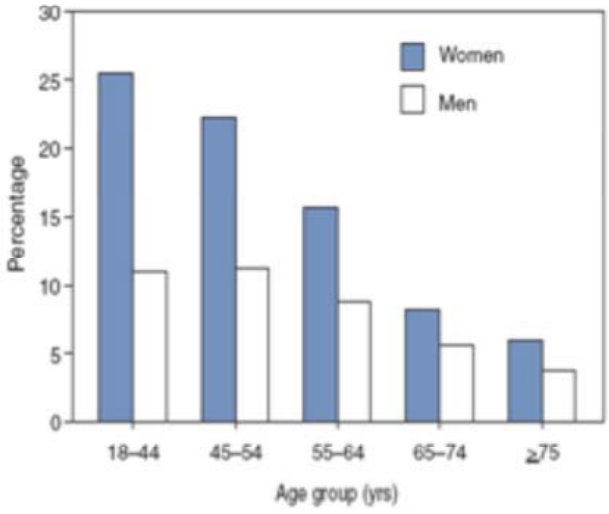
Department of Defense
CDR Tara Sheridan, USN

Topic One

Headache Types

"Most of the time he seemed to see something before him like a light, usually in part of the right eye; at the end of a moment, a violent pain supervened in the right temple, then all of the head and neck, where the head is attached to the spine...vomiting, when it became possible, was able to divert the pain and render it more moderate."
- Hippocrates 460-377 B.C.

Headaches are very common and a frequent complaint when visiting the clinic, especially among young women.



Percentage of persons over 18-years-old reporting severe headache or migraine in the prior 3 months grouped by age and sex. 2004-US

Notes

As seen in this slide, it is notable that headaches are a common life experience, the majority of migraines occurs in young women.

The World Health Organization's ranks headache as among the Top 10 most disabling conditions for men, and among the Top 5 most disabling conditions for women.

Notes - Continued

You may detail that:

Globally, the percentage of the adult population with an active headache disorder are:
47% overall
10% migraine
38% tension type
3% chronic daily headache
Globally, 14% of the population is affected by migraines at some point in life.

In the US 23 million suffer from with migraine:
18% of women and 6% of men have a migraine attack annually
1-2% of ER visits and up
to 4% of visits to physicians
Approximately 1 in 30 have a headache more days than not, for more than 6 months

Most headaches are primary, but some secondary headaches are a red flag conditions and must be first ruled out.

Primary – 90%

- Migraine headache
- Tension-type headache
- Cluster Headache
- Medication overuse headache (MOH)

Secondary – must be ruled out

- Brain trauma, hemorrhage (sub arachnoid, sub dural), stroke
- Brain infection (encephalitis, meningitis, sinusitis)
- Brain malignancy (glioblastoma, metastases)
- Headaches due to substances abuse or withdrawal
- Extracranial lesions (facial, trigeminal, occipital neuralgias, cervicogenic headache)

Notes

Again, as adapted from the International Headache Society (IHS), there are primary and secondary headaches, (as well as the left over, third category of cranial neuralgias and facial pain).

When you think of HA causes, think of anything which takes up space in the head can cause HA

Tumor

Subdural hematoma or ruptured aneurysm

Severe HTN (increased bloodflow)

Hypercapnia (increased bloodflow)

Hydrocephalus

You may mention in detail:

The HIS categorizes headaches into three:

Part I: The Primary Headaches

1. Migraine
2. Tension-type headache
3. Cluster headache and other trigeminal autonomic cephalalgias
4. Other primary headaches

continued on next page

Notes - Continued

Part II: The Secondary Headaches

5. Headache attributed to head and/or neck trauma
6. Headache attributed to cranial or cervical vascular disorder
7. Headache attributed to non-vascular intracranial disorder
8. Headache attributed to a substance or its withdrawal
9. Headache attributed to infection
10. Headache attributed to disorder of homoeostasis
11. Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures
12. Headache attributed to psychiatric disorder

Part III: Cranial Neuralgias Central and Primary Facial Pain and Other Headaches

13. Cranial neuralgias and central causes of facial pain
14. Other headache, cranial neuralgia, central or primary facial pain

To rule out a Red Flag condition ask:

- Is this the first or worst headache (HA) ever?
- Is the HA abrupt?
- Is it different than previous HAs?
- Is the patient <5 or > 50 years (most HA start between 20-40)
- Is there cancer, HIV, pregnancy (preeclampsia), immuno-compromise?
- Is there an abnormal physical exam (seizure, syncope, focal findings, altered mental status)?

Notes

Explain that REASSURING FEATURES are:

1. Stable pattern over months or years
2. Long standing history
3. FMH of similar HA
4. HA triggered by hormonal cycle, specific foods, specific sensory input (lights, odors, weather changes)

You can explain in greater detail the red flag indicators:

Fundamental change in headache pattern or character

- First/Worst
- Abrupt onset
- Subacute headaches with increasing frequency or severity
- Progressive or new daily persistent headache
- Awakens patient from sleep
- Headache always on same side
- Not responding to therapy
- Systemic symptoms
- Fever
- Nausea and vomiting
- Stiff neck
- Weight loss
- First onset > 50 years of age
- New-onset in patients with
  - Cancer
  - Immunosuppression
  - Pregnancy
- Neurologic symptoms > 1hr
- Progressive visual disturbance
- H/o seizures
- H/0 loss of consciousness
- Cognitive impairment
- Personality change
- Weakness, clumsiness, gait unsteadiness

Use headache diaries to help identify possible triggers:

Possible Triggers to HA include:

- Stress (79.7%)
- Hormones in women (65.1%)
- Not eating (57.3%)
- Weather (53.2%)
- Sleep disturbance (49.8%)
- Perfume or odor (43.7%)
- Neck Pain (38.4%)
- Light(s) (38.1%)
- Alcohol (37.8%) (red wine)
- Smoke (35.7%)
- Sleeping late (32.0%)
- Heat (30.3%)
- Food (26.9%) (Nitrates/aspartame/Caffeine)

Notes

Emphasize that the first step to treat a primary HA is to use a HA diary.

You may add also:

2 organic compounds often implicated in migraines are tyramine and phenylethylamine, which are found in many foods: wine, chocolate, aged cheese, soy products, citrus/tomato, vinegar.

Leftovers are high in tyramine

Other food triggers include

- Hot dogs/deli meat/sausages = nitrates
- Dried fruit = sulfites
- Preserved food = monosodium glutamate (MSG)
- Tea, red wine, cider = tannins
- Diet foods/beverages = aspartame
- Alcohol has tyramine, tannins and causes dehydation – all bad.

The four top primary headaches are:

- Migraine (with and without aura)
- Tension-type headache
- Cluster headache
- Medication overuse headache (MOH)

- The headaches differ in their:
  - Severity
  - Duration
  - Symptoms
  - Treatment

Notes

Emphasize (we will go over in these next slides) that the key to identifying headache type is to recognize the distinguishing features of each headache type, such as prominent symptoms, associated complaints and physical findings.

Migraines typically present with pulsing head pain, nausea, photophobia (sensitivity to light) and phonophobia (sensitivity to sound).

Tension type headaches usually present with non-pulsing "bandlike" pressure on both sides of the head, not accompanied by other symptoms.

Cluster headaches normally present as short episodes (15-180 minutes) of severe pain around one eye, with autonomic features, such as tearing, red eye and nasal congestion.

Migraines: most are without aura.

- They last 4-72 hours, are moderate to severe in intensity and are usually, but not always, unilateral.
- Pain is throbbing, pulsating (especially initially), aggravated by activity.
- Accompanied by nausea, vomiting, photophobia, phonophobia, and osmophobia.
- Many patients avoid stimulation, go to a dark room and lie down in bed ("Hibernate").

Notes

You may want to add:

Migraine without aura (common migraine) – 75%

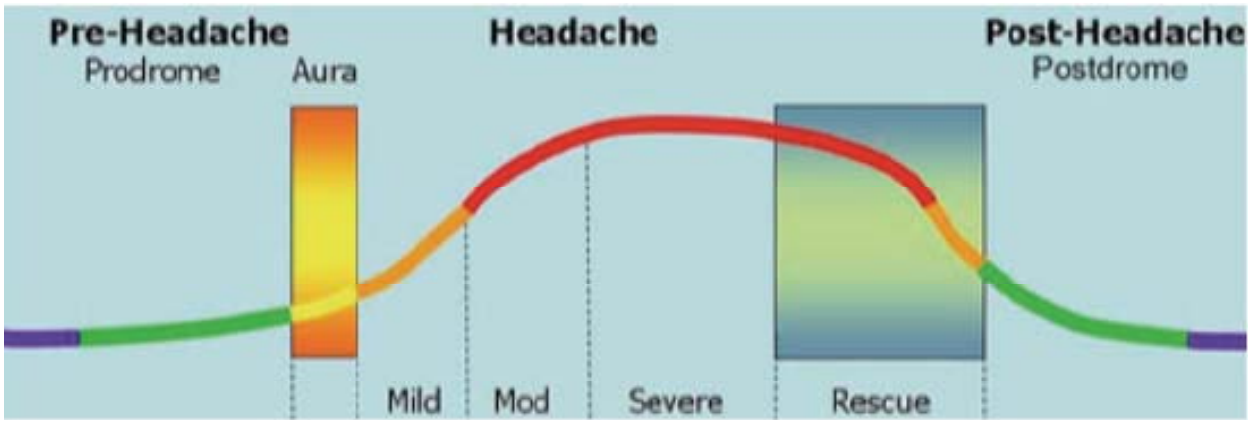
Migraine with aura – 25% is a transient visual, sensory language or rarely motor disturbance that signals that the HA will soon occur.

It may be subdivided to:

- Classic migraine
- Familial hemiplegic migraine (FHM). Familial hemiplegic migraine is an autosomal dominant migraine, with an aura of weakness along one half of the body. It is one of the few migraine conditions identifiably mapped to (3) genes.
- Ophthalmic migraine is a type of migraine associated with transient monocular visual loss. This variant is sometimes called retinal migraine or ocular migraine.
- Abdominal migraine is an abdominal pain in children, not accompanied by headache.
- Vertebrobasilar migraine manifests without headache, but with such features as dizziness, confusion, speech disturbances, tingling of extremities, and clumsiness.
- Status migrainosus is the term used to describe migraine attacks that persist for days.

Migraines: About a third of migraines with aura have a prodrome and a postdrome.

- Prodrome: Tiredness, mood change, and gastrointestinal symptoms preceding headache by 24-48 hours.
- Aura: Mostly visual (reversible spreading scotomas), or less common tingling, numbness, weakness.
- Postdrome: Feeling of exhaustion and that a sudden head movement may cause pain in area of headache.



Notes

About auras:

It is important to identify the premonitory symptoms (prodrome) (Kelman L) because patients with prodrome also have migraine triggers, longer aura, longer HA duration and longer time to respond to triptan therapy.

Prodrome symptoms in 25% of patients include:

- Visual aura most common
- Gradual onset, usually > 5 mins
- Duration ≤ 1 hour
- Mix of positive & negative
- features
- Fully reversible

Auras, are due to cortical spreading of an electrical disturbance along the surface of the cerebral cortex, causing blood vessel vasoconstriction and hypoperfusion, then followed by reactive vasodilation, and subsequent headache pain.

continued on next page

Notes - Continued

The postdrome, or "migraine hangover", is a 1-2 day period of lethargy, irritability, depression or euphoria, poor concentration, scalp tenderness and/or anorexia.

More on Migraine with aura:

Some symptoms of auras are bright flashing lights, zigzag line in your field of vision and areas in your field of vision that are blocked out, some experience what are known as "Alice in Wonderland Syndrome" migraines. (AIWS)

This is thought to be caused by abnormal electrical activity in the brain which leads to irregular blood flow in parts of the brain that control vision, these "hallucinations" result in severe distortion and perception of what the sufferer is viewing.

Sufferers when viewing their own body parts may think that they look gigantic or extremely tiny. Their feet may seem to be a mile away from their knees. Rooms and walls may sway and look like they are bending and flexing. Hallways can look much longer than they actually are and perception of both time and space can be totally disrupted. Every day noises like the sound of a TV can sound incredibly loud. Children can complain that the blackboard in school looks very far away. (DYSMETROPSIA)

Episodes of AIWS usually occur without the pain associated with migraines.

These unusual perceptions are very similar to what Alice experienced in Wonderland when she fell into the hole and in fact may be in the story because Lewis Carroll was known to suffer with severe migraines and may have had these kinds of perception issues himself.

Tension type (stress) headaches (TTH): they are different from migraines.

- Are episodic and chronic (daily).
- They last 30 minutes to 7 days.
- Are mild to moderate intensity.
- Usually bilateral, pressing or tightening quality, not pulsating or throbbing or aggravated by activity.
- Mild activity (stretching) actually reduces headache.

Notes

Some ways in which TTH can be separated from migraines:

- TTH are usually bilateral/bitemporal, pressing and tight, rather than unilateral and pounding (migraines).
- TTH are not associated with the N/V, nor the photo/phonosensitivity of migraines.
- Mild exercise, such as a walk or yoga stretching, may improve TTH, but worsens migraines.
- For women, there is not the cyclical association with hormones which is often identified with migraines ("menstrual migraines")

Cluster headaches: they are more typical in men.

- Pain is severe, excruciating, and can awaken patients from sleep.
- Pain is in the orbital/supraorbital or temporal area associated with sweating, tearing, miosis, ptosis, and rhinorrhea.
- Strictly unilateral, but may shift to other side on subsequent attacks (side shift).
- Attacks last 15-180 minutes from one to 8 per day, and lasts for 6 to 12 weeks.

Notes

0.1% prevalence.

3:1 male to female ratio.

Extremely painful primary HA condition.

One of the trigeminal autonomic cephalgias.

Clinically, presents as daily HA, often nocturnal.

- Strictly unilateral HA
- Rapid onset, lasting 15 minutes to 3 hours.
- Periorbital or temporal pain.
- "Clusters" – Periods lasting 4-8 weeks, usually 1-3 times per year.
- Associated with motor agitation, and autonomic features, such as sweating, tearing, rhinorrhea

Circadian periodicity

Similar time of day, often awakening from sleep

Autonomic signs ipsilateral

Conjunctival injection
Eyelid edema
Tearing
Nasal congestion/rhinorrhea
Forehead/facial sweating
Miosisor ptosis

Medication overuse headache (MOH): Beware that over treating migraines or tension type headaches can cause MOH.

- Headache more than 15 days a month secondary to overuse of headache medication for more than 3 months.
- Develops in women more than men.
- Headache upon awakening, aggravated by activity.
- Risk of MOH:
  - High: when using opioids, butalbital combinations, aspirin + acetaminophen + caffeine combination drugs
  - Intermediate to high: triptans
  - Low: nonsteroidal anti-inflammatory drugs

Notes

You may add that sometimes MOH are referred to as chronic daily headaches (CDH) or 'rebound' headaches.

How much is too much?

- Simple analgesics > 15 days/month (ASA, APAP, CAFFEINE)
- Ergots, triptans > 10 days/month
- Total use of any headache Rx combination > 10 days

Note that Medication overuse headaches are MORE painful than the original headache type, BUT they revert to prior episodic pattern and pain character within 2 months of stopping Rx.

Highlight the importance of how caffeine impacts headaches (coffee, red bull?)

Rare primary HA's not discussed include:

- Paroxysmal Hemicrania: in Females > males, with Unilateral orbital/frontal or temporal pain (V1 distribution). Pain is severe, sharp, stabbing with autonomic symptoms and lasts 2- to 30-minute attacks multiple times daily.
- Hemicrania continua: when paroxysmal hemicrania continues for weeks. Hemicrania continua can be relieved by the medication indomethacin.
- Primary stabbing headache: recurrent episodes of stabbing "ice pick pain" or "jabs and jolts" for 1 second to several minutes without autonomic symptoms (tearing, red eye, nasal congestion). These headaches can be treated with indomethacin.
- Primary exertion headache: throbbing, pulsatile pain which starts during or after exercising, lasting for 5 minutes to 24 hours. The mechanism behind these headaches is unclear, possibly due to straining causing veins in the head to dilate, causing pain. These headaches can be prevented by not exercising too strenuously and can be treated with medications such as indomethacin.
- Primary cough headache: starts suddenly and lasts for several minutes after coughing, sneezing or straining (anything that may increase pressure in the head). --- Serious etiologies(see secondary headaches red flag section) must be ruled out before a diagnosis of "benign" primary cough headache can be made.
- Coital headache ("primary orgasmic cephalgia"): dull, bilateral headache that starts during sexual activity and becomes much worse during orgasm. These headaches are thought to be due to lower pressure in the head during sex. --- Headaches that begin during

continued on next page

Notes - Continued

- orgasm may be due to a subarachnoid hemorrhage, so serious causes must be ruled out first.
- These headaches are treated by advising the person to stop sex if they develop a headache. Medications such as propranolol and diltiazem can also be helpful.
- Hypnic headache: moderate-severe headache that starts a few hours after falling asleep and lasts 15–30 minutes. The headache may recur several times during night. Hypnic headaches are usually in older women. They may be treated with lithium.
- Short-lasting Unilateral Neuralgiform headache with Conjunctival injection and Tearing, or SUNCT, is a rare type of primary headache that belongs to the group of headaches called trigeminal autonomic cephalalgia (TACs). TACs are caused by activation of the autonomic nervous system of the trigeminal nerve in the face.
    - Onset is typically later in life, often > 50 yrs of age, but may occur even in children
    - Patients experience excruciating burning, stabbing, or electrical, headache mainly in the orbital area only on one side of the body along with cranial autonomic signs that are unique to SUNCT.
    - Each attack can last from five seconds to six minutes and may occur up to 200 times daily.
    - There is no clearly successful treatment – anticonvulsants are typically tried: Pregabalin, Gabapentin, and Lamotrigine NSAIDs, acetaminophen and TCAs typically to do work in SUNCT.

Knowledge Check

Migraine headache symptoms include_____, _____, and nausea.

a. severe orbital; temporal pain
b. strictly unilateral; supraorbital
c. photophobia; phonophobia
d. facial sweating; phonophobia

Knowledge Check – Answer

Migraine headache symptoms include_____, _____, and nausea.

a. severe orbital; temporal pain
b. strictly unilateral; supraorbital
c. photophobia; phonophobia
d. facial sweating; phonophobia

Knowledge Check

Tension-type and cluster headaches have the same estimated duration of 30 minutes to 7 days.

a. True

b. False

Knowledge Check – Answer

Tension-type and cluster headaches have the same estimated duration of 30 minutes to 7 days.

a. True

b. False

Notes

Cluster: 15 minutes to 3 hours

Migraine: 4 – 72 hours

Tension: 30 minutes – 7 days

Topic Two

Headache Clinical Evaluation

After excluding secondary HA and Red flags remember the OPQRSTU mnemonic

Onset of pain Provocation/Palliation Quality/Character Region/ Radiation

Severity/Intensity Timing (continuous, intermittent) U/you (impact on activities)

Notes

Repeat this mnemonic often

Characteristics of headache

Age of onset

Location, nature

Relieving/exacerbating factors

Triggers

Duration and time to peak

Frequency

Caffeine/stimulant use

A physical exam includes:

- General appearance, vital signs
- Head and neck exam: palpation and range of motion
- Neurologic examination, in particular abnormal reflexes (Kernig/Brudzinski)
- Skin: rash, bruising, hemorrhages
- Lymph Nodes

Notes

Kernig/Brudzinski = tests of meningeal stretch and irritation

Kernig – Patient supine, with one hip slightly flexed and ipsilateral knee bent at 90o. Positive test, if patient is unable to hyperextend knee past 135 o without head pain.

Brudzinski – Severe neck stiffness causes patient's hips and knees to flex when the neck is flexed.

Diagnostic Studies to consider

- Blood
  - CBC
  - Chemistry panel
  - ESR
  - PT/PTT
  - Hypercoagulable studies in suspected sinus venous thrombosis
  - TSH
- Urinalysis/Urine Drug Screen
- CT head
  - Acute headache, h/o trauma
- MRI, MRA
  - Increased or low intracranial pressure or posterior fossa lesion
- MRV
  - Sinus venous thrombosis

Notes

CBC –rule out infection

ESR – especially for temporal arteritis

Lumbar Puncture – Rule out increased ICP with opening pressures, and assess CSF content for evidence of infection.

CT – Easily done in the emergent setting, to rule out intracranial hemorrhage or bony pathology.

MRI – Best to assess structural abnormalities, especially in the posterior fossa.

When to Obtain Neuroimaging:

Sudden onset of headache

Age > 50 years

Accelerating pattern of headache

Decreased LOC

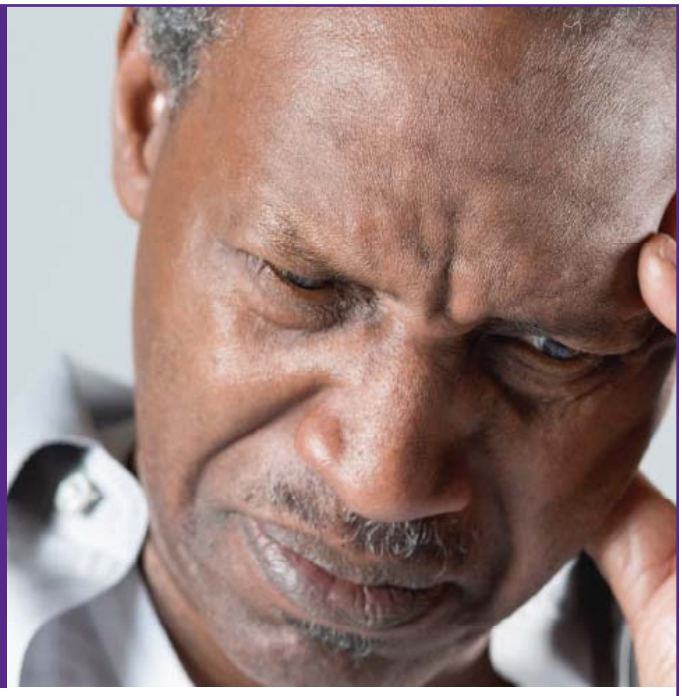
Systemic illness

Focal neurologic abnormality on exam

HA in immunocompromised patient (cancer, HIV)

Topic Three

Headache Treatment Options



Abortive treatment for headaches are for acute attacks and should be used briefly. They include:

- For mild to moderate pain, use over the counter preparations (Excedrin) NSAIDs (Aleve) and antiemetics (Phenergan).
- For moderate to severe attacks, use Triptans (Imitrex), Ergotamine , Corticosteroids, or a combination.
- Opioids or Caffeine/Butalbital/Acetaminophen or ASA (Fioricet/Fiorinal) are not recommended.
- Avoid treating more than 9 days a month, two episodes a day, for risk of developing MOH.

Notes

Abortive therapy is appropriate for most patients, and if used correctly, may prevent chronification.

Again, overuse may result in medication overuse (rebound) headache.

You may mention in detail:

TRIPTANS

1. Sumatriptan (Imitrex)
2. Eletriptan (Relpax)
3. Naratriptan (Amerge)
4. Frovatriptan (Frova)
5. Rizatriptan (Maxalt)
6. Sumatriptan + Naprosyn (Treximet)

continued on next page

Notes - Continued

MIDRIN

Isometheptene is a vasoconstrictor
Dichloralphenazone is a sedative
APAP is a centrak actung analgesic

OTC preparations

Acetaminophen
Naproxen and Ibuprofen
Combination products, typically containing acetaminophen, aspirin and caffeine (Excedrin, BC Powder, Goody's, etc)

NSAIDs

Naproxen is commonly used: 500-750 mg
A single high dose of NSAID is generally more effective than multiple smaller doses

Anti-emetics

Prochloperazine (5 to 10 mg tab TID prn), others are Metoclopramide, Promethazine
Use in particular when nausea is significant
Does not cause analgesic rebound
May cause extrapyramidal side effects

Mention how otc drugs with caffeine often get patients in trouble with treating migraines. Remind providers to encourage patients to limit use of otc drugs with caffeine.

Naproxen = Alleve

Ibuprofen = Advil

Prochlorperazine = Compazine

Metoclopramide = Reglan

Promethzeine = Phenergan

Triptans are an excellent abortive treatment for migraines, especially when taken early in the headache cycle, and when combined with an NSAID for increased efficacy.

There is a significant risk of rebound/MOH when more than 10 tablets of triptans are taken each week, especially after 3 months of such use.

Frovatriptan is especially useful in the treatment of menstrual migaines 2/2 longer duration of action.

Treximet is the only FDA approved combination tablet which contains both an NSAID and a triptan, for increased efficacy. The same effect can be achieved by prescribing each tablet separately, with instructions to patient to take 500 mg of naproxen with the first dose of their abortive triptan.

- Triptans – for moderate to severe attacks
  - 5HT1 agonists
  - Key is early dosing
  - No dependence risk but risk of analgesic rebound headache exists
  - Contraindicated in patients with coronary artery disease and stroke (vasospasms)
  - Side effect chest pain/tightness

Sumatriptan (Imitrex)
Oldest, multiple formulations
Tablets 50 and 100 mg
Nasal spray 20 mg
Injection (incl. autoinjector) 6 mg

Zolmitriptan, Rizatriptan
Oral dissolving preparations

Frovatriptan
Longer acting

Fixed combination of sumatriptan 85 mg and naproxen 500 mg (FDA approval)

continued on next page

Notes - Continued

Ergotamines
Ergotamine – oral, sublingual and suppository
DHE = Dihydroergotamine - intranasal
Side effects: nausea, vomiting, tachycardia, chest tightness, diarrhea

Ergotamine is an alkaloid with vasoconstrictive properties, which has been used clinically for the acute tx of migraines for > 50 years. It is "the drug of choice in a limited population of migraine sufferers who have infrequent or long duration headaches and are likely to comply with dosing restrictions. For most migraine sufferers, a triptan is generally a better option from both efficacy and side effect perspectives." This was the conclusion of a broad based European review in 2000.

Ergotamines have a high risk of causing medication overuse/rebound headaches.

Options for acute severe migraine/Status Migrainosus
- Sumatriptian subcut/injection
- DHE 1 mg subcut/injection (with metoclopramide)
- IV Droperidol 2.5 mg IV initially (pretreat with cogentin)
- IV Valproate – 300-500 mg infused rapidly

Prophylactic treatment for headaches are regularly given to decrease frequency and severity of attacks.

- Best for compliant patients with at least one headache every day of every week.
- Attacks interfere with normal activities.
- Abortive therapy is ineffective or contraindicated.
- Migraines are accompanied with a focal neurological deficit (not just a visual aura).
- Expect onset to take at least 4 weeks.

Notes

Assess cormorbidities.

For example, may be able to combine therapies, such as to assist with blood pressure control (beta blocker, ca++ channel blocker), appetite suppression for obesity (topiramate), neuopathy (pregabalin, gabapentin) or mood disorder (TCA, SRNI).

Prophylactic treatments include adjuvant pain medications:

- Low dose Tricyclic Antidepressants
- Divalproex Sodium (FDA approved)
- Topiramate (FDA approved)
- Calcium Channel Blockers – Verapamil
- Gabapentin/Pregabalin
- Beta-blockers

Notes

Effexor and Cymbalta are SNRI medications. The SSRI medications do not have as much evidence as migraine prophylaxis in the literature.

Note that the following medications are CATEGORY D (proven harmful to fetus, but may be beneficial to mother) with respect to pregnancy

1. Valproate
2. Topiramate

Life style changes and integrative treatments are the most long-term beneficial treatments for all headaches.

- Cognitive Behavioral Therapy (CBT), Stress Management, Relaxation, Biofeedback
- Lifestyle Interventions (Sleep hygiene, Regular meals, Exercise, Smoking cessation)
- Acupuncture, Acupressure
- Physical techniques (TENS), Cervical manipulation
- Herbals / Supplements (Butterbur, Feverfew, Magnesium, Riboflavin, Vitamin B12)

Notes

Do not underestimate the importance of lifestyle interventions.

Agents that can be used for migraine prevention (Bajwa z, Sabahat A) :

Butterbur — An extract of butterbur (Petasites hybridus) root, a perennial shrub, is an herbal medicine that is marketed as a food supplement in the United States and as a licensed pharmaceutical medicine in Germany (Petadolex). At least two small placebo-controlled clinical trials have found some efficacy for Petasites extract in migraine prevention. In the larger of these studies, Petasites at a dose of 150 mg daily (given in two divided doses) but not 100 mg daily (given in two divided doses) was effective and well tolerated as preventive therapy for migraine. Gastrointestinal upset, predominately burping, was the most common side effect.

Butterbur contains pyrrolizidine alkaloids; these alkaloids are potential carcinogens that are removed from the commercially prepared Petasites root extract. No part of the Petasites plant should be ingested other than the commercial products.

Coenzyme Q10 — Interest in coenzyme Q10 (CoQ10) and riboflavin for migraine treatment has been sparked by the potential role of mitochondrial dysfunction in migraine pathogenesis.

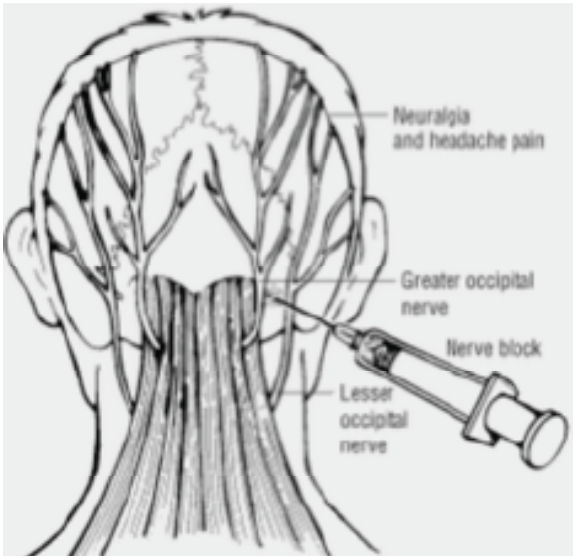
In a small, randomized controlled trial of 42 patients with migraine, coenzyme Q10 (CoQ10) was effective for migraine prophylaxis; significantly more patients treated with CoQ10 (100 mg three times daily) experienced a ≥50 percent reduction in attack frequency (the primary outcome measure) at three months than patients treated with placebo (47.6 versus 14.4 percent). CoQ10 treatment was well tolerated. Larger clinical trials are needed to confirm the benefit of CoQ10 for migraine prevention.

Feverfew — Feverfew has been the herbal remedy most studied for the prevention of migraine, but evidence regarding benefit is conflicting. A systematic review of feverfew for migraine prophylaxis found five randomized controlled trials with 343 patients that met the inclusion criteria. While three of the trials found that feverfew was effective, the two trials with the highest methodologic quality found no significant difference between feverfew and placebo. The review concluded that trial results were mixed and did not establish that feverfew is more effective than placebo for the prevention of migraine. The safety of this and other herbal products is unknown.

Magnesium — Reports of low magnesium levels in migraineurs prompted the study of magnesium supplements as a treatment for migraine. Four small randomized controlled trials using variable formulations of magnesium for migraine prevention have produced mixed results, with two trials finding a statistically significant benefit for magnesium, one trial finding a nonsignificant trend to benefit, and one trial finding no benefit. Diarrhea and gastrointestinal discomfort were the most common side effects of magnesium supplementation in these trials

Injections should be considered only for a select group of patients

- Botulinumtoxin (Botox A/B) is approved for chronic not episodic migraine in adults with more than 15 days a month of attacks lasting ≥ 4 hours/day.
- Trigger point injections may be considered primarily for cervicogenic headaches or referred myofascial pain.
- Greater occipital nerve blocks may help with Occipital neuralgia however, risk and benefits must be discussed.



Notes

Botox is FDA approved for chronic migraine (>15 HA days per month).

Approximately 60% of selected patients respond to this therapy, resulting in (A) fewer migraine days per month, and (B) less severe migraines.

Botox – Blocks release of Acetylcholine from primary afferent nerve terminals. Studies suggest that it also blocks release of Substance P, CGRP (calcitonin gene related peptide), glutamate, and other pro-inflammatory, vasoactive peptides from activated trigeminal fibers, which likely decreases the transmission of pain impulses to the brain.

There are two formulations: Botox A and Botox B.

1. Conversion: 1 U of BTX-A to 50 U of BTX-B.
2. Onset of action of type B appears to be rapid (2 days vs 3 days), with shorter duration of benefit (11 weeks vs 17 weeks).

Knowledge Check – True or False

Triptans, Sumatriptan, and Frovatriptan are types of _____.

a. Herbal supplements
b. Lifestyle interventions
c. Nonpharmacologic interventions
d. Abortive therapies

Knowledge Check – Answer

Triptans, Sumatriptan, and Frovatriptan are types of _____.

a. Herbal supplements
b. Lifestyle interventions
c. Nonpharmacologic interventions
d. Abortive therapies

Summary

Recall that most chronic headaches are primary and include migraines, tension type, cluster and medication overuse headaches.

Use headache diaries and feel confident to exclude Red Flags and other comorbidities.

Chronic headaches are best treated with stress management, sleep Hygiene, and proper nutrition. Other integrative approaches may help. Reserve injections to select cases.

Long-term adjuvant medications should be used judiciously and the use of sedatives, barbiturates, caffeine, and opioids should be avoided.

Resources

- Headache Phases: http://www.headachecare.com/phases.html
- Migraine Apps
  - http://www.healthline.com/health-slideshow/top-migraine-iphone-android-apps#1
- Headache classification
  - http://ihs-classification.org/en/02_klassifikation)

References

Bajwa Z, Sabahat A. (2010). Preventive treatment of migraine in adults. Retrieved from http://cursoenarm.net/UPTODATE/contents/mobipreview.htm?7/30/7649?source=see_link

Blitzer, A. (2005). Botulinum toxin A and B: a comparative dosing study for spasmodic dysphonia. Otolaryngology--Head and Neck Surgery, 133(6), 836-838

Durham, P. L. (2006). Calcitonin Gene-Related Peptide (CGRP) and Migraine. Headache: The Journal of Head and Face Pain, 46(s1), S3-S8.

Kelman, L. (2004). The premonitory symptoms (prodrome): a tertiary care study of 893 migraineurs. Headache: The Journal of Head and Face Pain, 44(9), 865-872.

Kelman, L. (2007). The triggers or precipitants of the acute migraine attack. Cephalalgia, 27(5), 394-402.

Lipton, R. B., Bigal, M. E., Diamond, M., Freitag, F., Reed, M. L., & Stewart, W. F. (2007). Migraine prevalence, disease burden, and the need for preventive therapy. Neurology, 68(5), 343-349.

Stovner, L. J., Hagen, K., Jensen, R., Katsarava, Z., Lipton, R. B., Scher, A. I., ... & Zwart, J. A. (2007). The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 27(3), 193-210.

Tfelt-Hansen, P., Saxena, P. R., Dahlöf, C., Pascual, J., Lainez, M., Henry, P., ... & Goadsby, P. J. (2000). Ergotamine in the acute treatment of migraine. Brain, 123(1), 9-18.

Notes

Notes

Notes

JPEP

Joint Pain Education Program