Migraine/Tension Headaches

Headaches (HA) are one of the most common reasons a person will seek medical care. There are three general categories of HA: primary, secondary, or related to cranial neuralgia. Primary HA's are those not caused by an identifiable organic problem. Secondary HA's include those caused by trauma, stroke, tumor or cancer, substance use/abuse, illness/infection, and those caused by head or neck disorders (like a badly infected tooth, ear, or sinus infection.) Cranial neuralgias are those related to spinal cord or neck/ head nerve damage/disorders. This handout will focus on primary HA's, including migraine and tension.

Migraine HA's are more common than once thought, and >90% of primary HA's involve a component of migraine. Health care providers use your symptom history and physical exam to diagnose which type(s) of HA is causing your pain. Typically, no blood tests or CT/MRI are warranted for uncomplicated migraine or tension headaches. Though rare, in the event a life-threatening cause of headache is suspected, or if your headaches are not responding to first-line treatments, additional testing and/or a neurology referral may be needed.

Characteristics of Common Headaches

Tension Headaches:

This is the most common primary HA, yet most do not go to their doctor for treatment. Generally such HA's are not disabling, and nausea, if present, is mild. Light or sound sensitivity may be present, though never both sensitivities at the same time. The pain is often described as a squeezing, tightness, or band-like constriction around the head. IHS defines these HA's as "the absence of migraine."

Attack frequency can be important. Episodic tension HA's (<1 day/month) are benign — a physician evaluation is not needed. Frequent tension HA's (1-14 days/month) may require prescription medication. Chronic tension HA's (>14 days/month) can be serious, and consultation with a clinician is recommended.

Migraine Headaches:

The International HA Society (IHS) is "an organization whose purpose is to advance headache science, education, and management, and to promote headache awareness worldwide." IHS has an easy mnemonic to help diagnose migraine:

POUND

- **P** — Pulsatile
- **O** — One day duration (lasting 4-72 hrs if not treated)
- **U** — Unilateral
- **N** — Nausea/vomiting
- **D** — Disabling

Having at least 4 of these criteria without signs of secondary HA diagnoses migraine without further evaluation. Your clinician can help with the diagnosis if your case is not clearly defined by POUND. Migraine attacks vary widely among individuals and among populations. Though severe HA's are characteristic of migraine, most patients also have many more HA days that are mild, which can lead to misdiagnosis. Often there is a family history of migraine.

Migraines may have a continual dull ache or pressure, and some describe stabbing or sharp pains. They can be felt on one or both sides of the head, often behind the eyes, but the location can be anywhere in the face or head. Additional characteristics include:

- Light or sound sensitivity
- Symptoms worsened with activity
- May be preceded by visual changes, also called auras, such as wavy lines, stars, or blind spots

Headache Triggers:

- Acute or chronic emotional and/or physical stress
- Weather changes (barometric pressure, temperature, humidity)
- Changes in altitude or depth, such as with flying or SCUBA diving
- Odors (perfumes, colognes, body sprays)
- Smoke
- Chemicals, including household cleaners
- Allergies
- Poor sleep habits (irregular, too much, too little) or poor sleep quality
- Poor eating habits, including skipping meals or eating fast food
- Caffeine use, abuse, or withdrawal
- Hormones, including cyclic menstrual HA's
- MSG (monosodium glutamate) found in many pre-packaged and frozen foods, restaurant foods, chips, and spice mixes

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- Ingestion of nitrates, found in most processed meats, such as hot dogs and deli meats
- Alcohols like wine (sulfites) and beer (yeasts)
- Sugar substitutes, including NutraSweet (aspartame) — Splenda is ok!
- Chocolate, onions, aged cheeses, smoked or pickled foods, nuts, bananas, pineapples, or citrus fruits
- Exposure to flickering lights, fluorescent lights, bright sunlight, or computer/video screens

Treatments

Many medications are available for migraine or tension HA, but prevention is critical. Avoidable triggers can be recognized and minimized, which commonly include hunger, dehydration, and poor sleep habits. Stress is a major contributor to HA. When medicines are needed in primary care, there are two major categories: abortive and preventive.

ABORTIVE MEDICATIONS stop the headache process and with it the pain and accompanying symptoms. This is especially important with migraine HA's, as taking medication as soon as a migraine is realized can break the severity of this painful HA syndrome. For those who have auras prior to the onset of migraine HA's, taking the medication at the time of the aura, rather than waiting for the HA to develop, can improve one's symptoms/pain more quickly. Occasional use of over-the-counter (OTC) medications such as acetaminophen (Tylenol®), ibuprofen (Motrin®/Advil®), naproxen sodium (Aleve®), or aspirin can relieve both migraine and tension headaches. An injectable pain medication that is similar to ibuprofen is ketorolac or Toradol®.

Triptans are a class of migraine-specific abortive medications, and if tolerated and used sparingly, are very effective. There are several brands available, examples including Imitrex®, Maxalt®, Zomig®, and Relpax®. They can be used up to twice a week, though even at this frequency the safety of multiple doses each week/month is not known? Dihydroergotamine comes as a nasal spray or injectable medication and is effective for acute migraine treatment. However, certain medical conditions, side effects, and drug-drug interactions limit its use. Dihydroergotamine is not safe in pregnancy.

Combination treatments can be helpful, such as naproxen and a triptan taken together. Anti-nausea medications are useful for some, including promethazine and odansetron. Caffeine can help some in acute migraine treatment, but excessive exposure can worsen them. Daily caffeine intake should be limited to <100mg. Your clinician can help you decide which of these medications, if any, are appropriate for you.

PREVENTIVE MEDICATIONS are those taken daily and long-term. They should be considered in those who have 8 or more migraines/month, or at least 4 disabling migraines/month. Other candidates for such treatment are those taking acute HA medication more than 8 days/month, and persistent disability even with treatment during migraines. Though often relief can be seen in days or weeks, it can take up to 3 months to see full benefit. Overall preventive treatment is safer than taking many doses of acute/abortive pain medications every day/week/month, and it can reduce the intensity and frequency of headaches significantly. Once improvement is established, a maintenance phase of 6-12 months should follow.

Examples of preventive medications include valproic acid (Depakote®), metoprolol, propranolol, and topiramate (Topamax®). Additional preventive medications include amitriptyline (Elavil®), atenolol, ibuprofen, naproxen, and venlafaxine (Effexor®). Other anti-anxiety/depression medications may be useful. Oral contraceptives can help or worsen migraines, but Mircette® and Seasonale® contraceptive pills are two that are used successfully in some w/menstrual migraine.

MEDICATIONS MAY CAUSE HEADACHE! It is critical to note that medications may directly provoke HA, and overuse of pain medication can actually result in worsening HA, a phenomenon called *medication overuse (or rebound) HA*. Nitrates (often used to ease heart pain caused by blocked blood vessels to the heart), phosphodiesterase inhibitors (such as Viagra®, Levitra®, Cialis®), and hormones may cause HA, even in those without a history of HA.

Common over-the-counter pain medications can cause rebound HA, especially if used >10 days/month. This means that ibuprofen, for example, often used to treat acute pain/HA may actually cause HA if overused. Other classes of medications associated with high risk of rebound HA include ergotamine products, triptans, butalbital compounds, and opioids. Rebound HA's may be worsening of underlying HA, or it may be new, milder, non-specific HA's in addition to the "usual" HA one experiences.

ALTERNATIVE METHODS

Various interventions can be helpful for acute HA treatment or to prevent HA's. Over-the-counter pain rubs like Ben Gay® are soothing but are not direct treatments for acute pain. Newer topical pain medications that contain anti-inflammatory ingredients can help local pain, but they can be expensive. An example is Voltaren® gel. Moist heat or cool wraps to the head/neck can help muscle pain. You can buy these or make your own:

Ice Pack: Pour 1 bottle of isopropyl alcohol and 2 or 3 bottles of water into a plastic/Ziploc®

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gallon-sized bag and seal, keeping much of the extra air out of the bag. Place bag into 2nd plastic bag and seal. Place in freezer. When ice pack is needed, wrap the bag in a thin towel or T-shirt. Apply for 10-15 minutes. Re-freeze and use again as needed. Ok to apply ice pack several times/day.

Heat Pack: Fill cloth container (a large sock works well) with 4-6 cups of uncooked rice, flax seed, or buckwheat. Tie or sew the container shut. Microwave for 1-3 minutes. ***Caution:*** *microwave settings can vary. Check your heat pack to make sure it is not going to burn your skin.* Apply to affected area, wrapping pack in light fabric, if needed. The moist heat will diminish gradually. This pack can be reused periodically, but do not apply continuous heat to your skin for hours at a time.

Supplements can be used for migraine prevention, including butterbur, magnesium, riboflavin, and feverfew. Chiropractic/Osteopathic manipulation, massage, acupressure, acupuncture, and biofeedback have been used by headache patients with variable degrees of success. Counseling is extremely helpful for many, whether to target stressful situations in one's life or to learn techniques to adapt to having stress or recurrent HA's. For severe sufferers, BOTOX® is an option, though this must be managed by a specialist skilled in using this medication for HA treatment.

Take Control of Your Headaches!

Consider the following to help manage your HA's:

- Get regular daily exercise
- Maintain a regular sleep schedule, even on weekends, getting 7-8 hours nightly
- Maintain a regular eating schedule
- Consider any dietary triggers (foods/drinks that trigger HA's)
- Limit caffeine, NutraSweet, and alcohol
- Consider your work station when studying such that it is ergonomically comfortable, and stand/stretch often when doing desk work
- Walk away from your computer at least once an hour for a few minutes to allow your spinal and eye muscles to reset and relax
- Wear sun-glasses outdoors and when driving
- Keep a headache diary, logging dates, severity, duration, medication taken, triggers, and the outcome

When Should I See A Healthcare Provider?

Some HA's require a visit to your healthcare provider, especially those that are severe or prolonged:

- Sudden onset of severe HA, often described as "the worst headache I have ever felt" or a "thunderclap" HA
- Progression or change in what was once a stable HA pattern
- New HA in persons <5yo or >50yo
- HA with fever >100.5°F, neck stiffness, vomiting, altered mental status, or skin rash
- HA w/neurologic signs such as vertigo, inability to walk/speak/see/hear/think normally, change in consciousness , or focal weakness
- Onset of pain with exertion, cough/sneeze, sexual activity, or w/bowel/bladder use
- New HA in persons w/history of cancer
- HA following head/neck trauma
- Inability to manage HA oneself

References:

- MKSAP17 (Medical Knowledge Self-Assessment Program 2017)
- International Headache Society website http://www.ihs-headache.org/

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