

Your headache isn't all in your head!



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OVERVIEW



Primary headache disorders

Overview of migraine

Treatment options and emerging therapeutics

Lifestyle changes

EPIDEMIOLOGY

- ▶ One of the most common disorders seen in practice
- ▶ Most common pain disorder affecting quality of life, work/school attendance, and social functioning
- ▶ 50% of the general population have headaches during any given year
- ▶ Lifetime prevalence: 90%
- ▶ Migraine ranked first as the most disabling disease in the 15–49 age group

HEADACHES IN THE WORKPLACE

- ▶ Over 39 million Americans are living with migraine
- ▶ 113 million workdays are lost in the US every year
- ▶ Negative impact on productivity
- ▶ Impacts career choice, family life, and personal finances

PRIMARY HEADACHE DISORDERS

- ▶ Not caused by anatomic, inflammatory, infectious, or physiological abnormalities
- ▶ Migraine
- ▶ Tension-type headache
- ▶ Trigeminal autonomic cephalalgias
 - ▶ Cluster headaches
 - ▶ Others

TENSION-TYPE HEADACHES

- ▶ Most common headache disorder
- ▶ Episodes of headache, typically bilateral, pressing or tightening in quality, mild to moderate in severity lasting minutes to days
- ▶ Does not worsen with physical activity
- ▶ Not associated with nausea
- ▶ Can have either light or sound sensitivity



Clinical characteristics of tension-type headache

Stress/upset



Pain

± anxiety/depression

* Acute: Pain < 15 days/month

* Chronic: Pain for months

Site



Bilateral



Nuchal



Hatband

Characteristics



Pressure



Aching

MANAGEMENT

- ▶ Analgesics: Tylenol or NSAIDs
- ▶ Behavioral strategies: CBT, relaxation techniques, stress reduction
- ▶ Sleep hygiene
- ▶ Physical therapy
- ▶ Preventative medications if headaches become chronic

TRIGEMINAL AUTONOMIC CEPHALALGIAS

- ▶ Characterized by short-lasting attacks of unilateral head pain associated with autonomic symptoms like nasal congestion, tearing, and eye redness
- ▶ Cluster headache
- ▶ Paroxysmal hemicrania
- ▶ SUNCT/SUNA
- ▶ Hemicrania continua

CLUSTER HEADACHES

- ▶ Characterized by recurrent, severe headaches on one side of the head typically around the eye. Described as “red-hot poker in the eye”
- ▶ Can commonly wake patients in the middle of the night with intense pain in or around one eye
- ▶ Single attack: 15 min – 3 hrs, several times a day
- ▶ Male: female, 6:1
- ▶ Cluster period: The starting date and the duration of each cluster period might be consistent from period to period. For example, cluster periods can occur seasonally, such as every spring or every fall
- ▶ Alcohol is a common trigger

SYMPTOMS

- ▶ Excruciating pain in or around the eye
- ▶ One sided pain
- ▶ Restlessness
- ▶ Excessive tearing on the affected side
- ▶ Stuffy or runny nose on the affected side
- ▶ Facial sweating
- ▶ Drooping eyelid
- ▶ Facial flushing on the affected side



Cluster headaches may involve pain around one eye, along with drooping of the lid, tearing and congestion on the same side as the pain

RISK FACTORS

- ▶ Sex
 - ▶ Males > Females
- ▶ Age
 - ▶ 20-50 years
- ▶ Family History
- ▶ Alcohol
 - ▶ Trigger for cluster headaches
- ▶ Smoking

TREATMENT

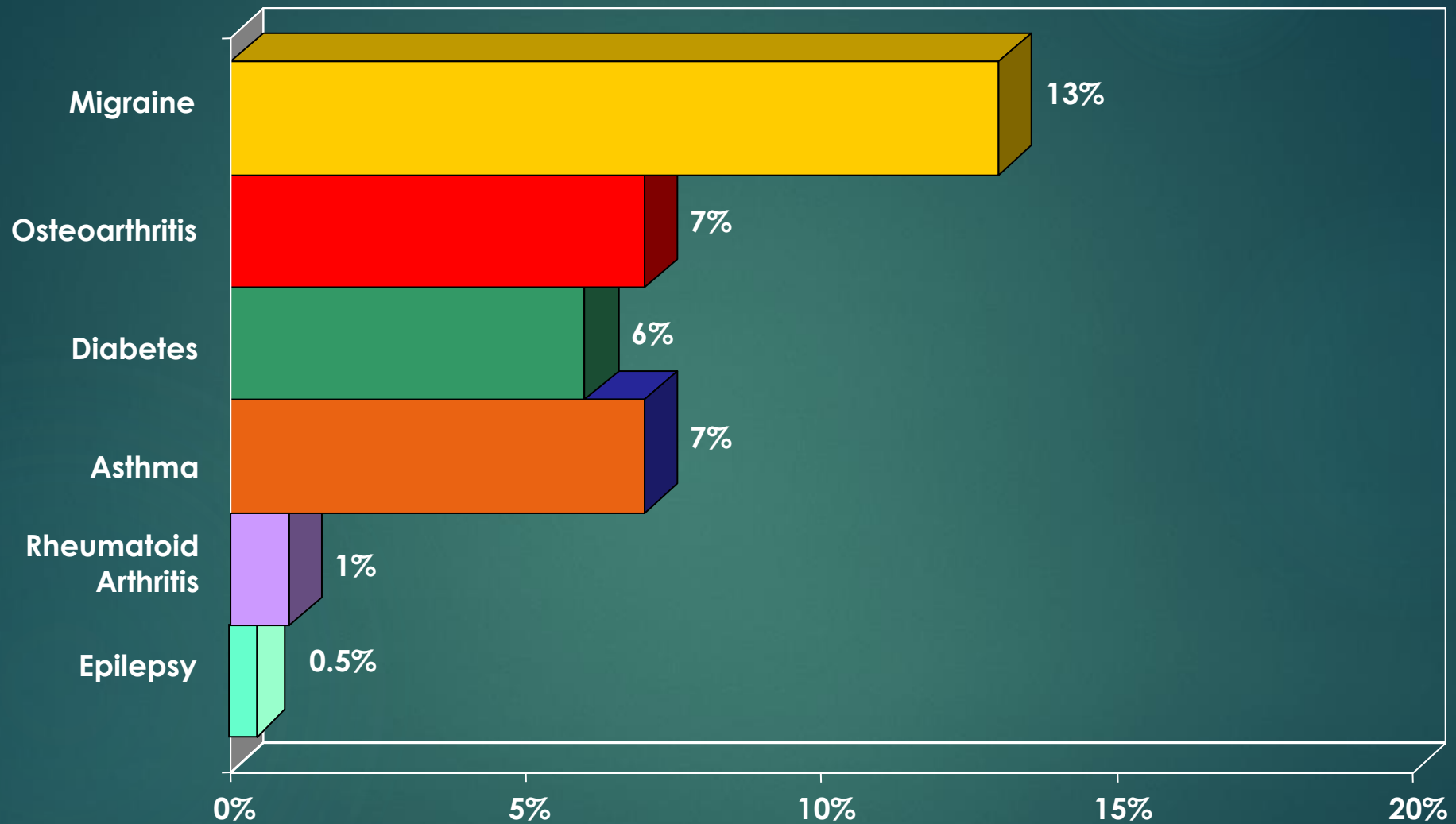
- ▶ Acute treatments:
 - ▶ Oxygen: 100% O₂ 12-15 L for 15-20 minutes
 - ▶ Triptans: nasal sprays, injections
 - ▶ Lidocaine spray
- ▶ Preventative treatments: chronic cluster headaches
 - ▶ Steroids
 - ▶ Melatonin
 - ▶ Daily medications to reduce the number of attacks

A teal-toned line drawing of a woman in pain, clutching her head. She is wearing a headscarf and a necklace. In the foreground, there is a sign that says "SILENCE PLEASE" and a bucket. The background shows a simple room with a window and some furniture. A solid red rectangle is located in the top right corner of the image.

MIGRAINE

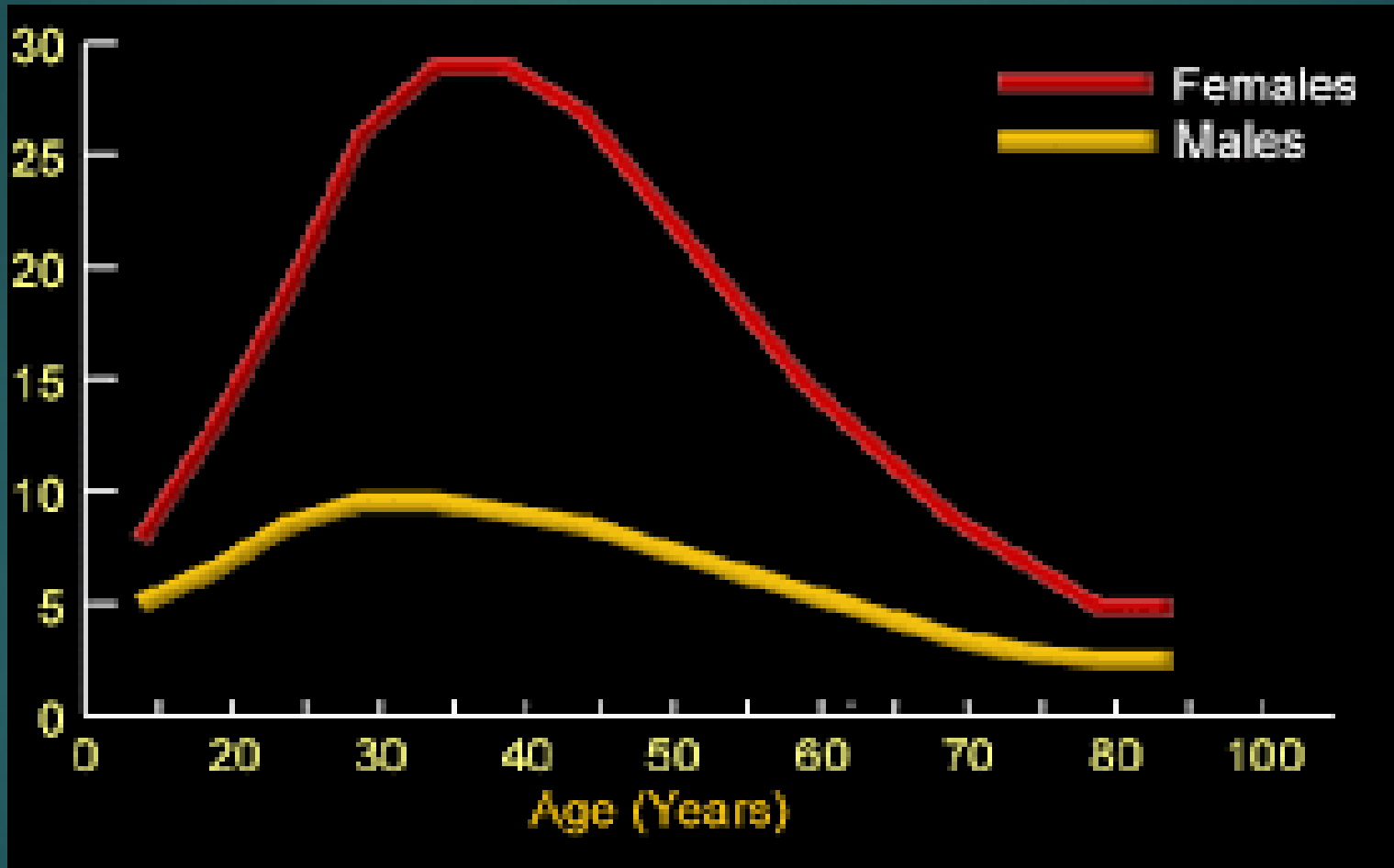
EPIDEMIOLOGY

- ▶ Everyone either knows someone who suffers from migraine, or struggles with migraine themselves
- ▶ Every 10 seconds, someone in the U.S. goes to the emergency room complaining of head pain, and approximately 1.2 million visits are for acute migraine attacks
- ▶ Affects approximately 39 million Americans (15% of the population)
 - ▶ 29 million women
 - ▶ 10 million men
- ▶ Nearly 1 in 4 households has a family member with migraine
- ▶ 30% have had a migraine in the past year
- ▶ Third highest cause nationwide of years lost to disability
- ▶ Fifth leading cause of ER visits
- ▶ Most common between the ages 18-44



Data from the Centers for Disease Control & Prevention, US Census Bureau, and the Arthritis Foundation.
Hauser & Kuland, Hauser et al., *Epilepsia* 1993.

Prevalence of migraine as related to age and gender



American Headache Society

THE BURDEN OF MIGRAINE

- ▶ Individual and family burden
 - ▶ Morbidity between attacks
 - ▶ Avoidance of activities, feeling anxious
 - ▶ Families of patients with migraine report significant impact on their lives
 - ▶ eg: anxiety and depression, reverse caregiving
 - ▶ Depression, anxiety, and sleep disturbances are common for those with chronic migraine
 - ▶ More than 20% migraine sufferers are disabled, and the likelihood increases with increased comorbid disorders
 - ▶ Part of the reason the condition has such a big impact in the workplace is that it affects people during their peak productive years

THE BURDEN OF MIGRAINE

- ▶ Societal burden
 - ▶ Direct costs
 - ▶ \$17 billion per year in the US
 - ▶ Healthcare use
 - ▶ Indirect costs
 - ▶ \$36 billion per year
 - ▶ Absenteeism
 - ▶ Decreased productivity
- ▶ 112 million bedridden days per year

Unmet Treatment Needs = Greater Disability = Greater Burden

- ▶ In 2020, there are about 700 certified headache specialists in the U.S. and 39 million sufferers
 - ▶ 1:55,000
- ▶ More than 50% migraine patients are never diagnosed
- ▶ Only 4% of migraine sufferers consult headache specialists

Do you have the following with your headaches

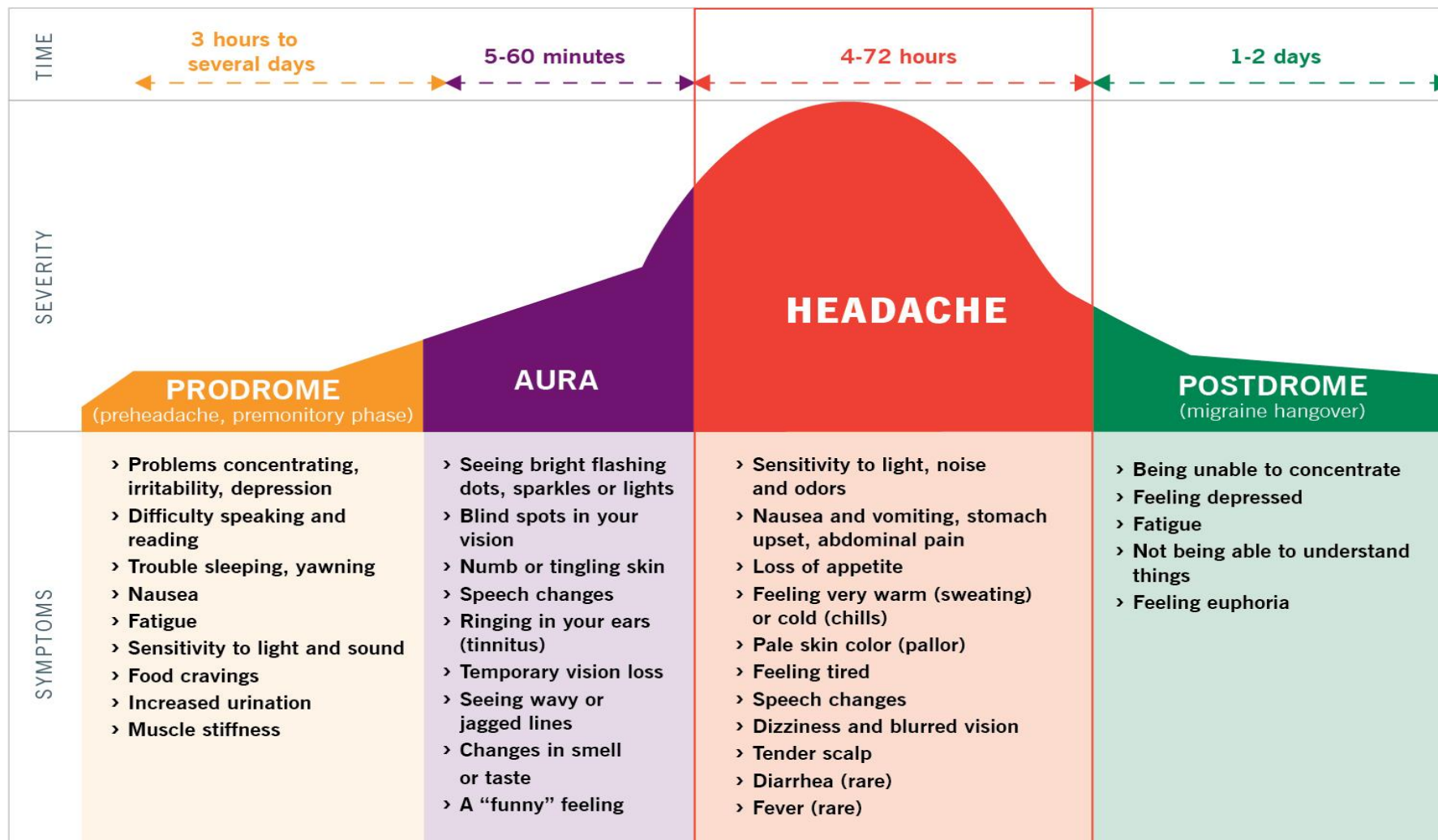
1. Have you felt nauseated or sick to your stomach?
2. Do light or noises bother you? (a lot more than when you don't have headaches)
3. Do your headaches limit your ability to work, study, or recreational activities?

Yes to 2 /3 questions: means migraine 93% of the time
Yes to 3/3 questions: means migraine 98% of the time

DIAGNOSIS

- ▶ More than just a bad headache
- ▶ Headache disorder characterized by episodes of head pain and associated symptoms, such as nausea, sensitivity to light, sound, smells, or intolerance to head movement
- ▶ Worsened by activity: can be incapacitating
- ▶ 25% of migraine sufferers can have an aura: visual disturbance most common

The 4 Phases of a Migraine Headache



EPISODIC VS CHRONIC MIGRAINE

- ▶ Episodic migraine
 - ▶ Less than 15 days per month >3 months
- ▶ Chronic migraine
 - ▶ 15+ headache days per month for >3 months
 - ▶ At least 8 days have features of a migraine headache

TREATMENT PHILOSOPHY

- ▶ Early diagnosis and intervention
- ▶ Interdisciplinary approach
 - ▶ Pharmacological and non-pharmacological treatment strategies
- ▶ Avoidance of triggers: No universal triggers
 - ▶ Environmental, Weather-related, lifestyle, hormonal, food
- ▶ Lifestyle changes
- ▶ Addressing comorbid disorders
- ▶ Patient education

MEDICATION MANAGEMENT



GOALS OF ACUTE TREATMENT

- ▶ Taken onset of migraine
- ▶ Early intervention to relieve headache and other migrainous symptoms
- ▶ Rapid onset
- ▶ Minimal adverse effects
- ▶ Return to activity/restore function
- ▶ Reduce resource use (ED/urgent care)

ACUTE TREATMENTS

- ▶ Nonspecific
 - ▶ NSAIDs: Ibuprofen, Naproxen etc
 - ▶ Antiemetics: Compazine, Phenergan, Zofran
 - ▶ Corticosteroids
- ▶ Specific
 - ▶ DHE (less commonly used)
 - ▶ Triptans: Sumatriptan, Rizatriptan etc
 - ▶ CGRP antagonists
- ▶ Opioids (Norco, Percocet, Oxycodone, Dilaudid etc.) and butalbital (Fioricet, Fiorinal) are NOT considered appropriate abortive treatments due to high risk of rebound headaches (AHS guidelines)

GOALS OF PREVENTATIVE TREATMENT

- ▶ To be taken daily. Need adequate trial period ~ 3 months. Adequate dosing.
- ▶ Reduce the frequency and/or severity of migraine attacks
- ▶ Decrease use of acute treatment therapies
- ▶ Increase responsiveness to acute treatment therapies
- ▶ Improve function and quality of life
- ▶ Empower patients
- ▶ Decrease overall healthcare costs

PREVENTATIVE TREATMENTS

- ▶ Seizure Medications
 - ▶ Topiramate, Gabapentin
- ▶ Blood Pressure Medications
 - ▶ Beta Blockers: Propranolol
 - ▶ Ca⁺ Channel Blockers: Verapamil
- ▶ Antidepressants
 - ▶ Tricyclics: Nortriptyline
 - ▶ Combos: Venlafaxine
- ▶ BOTOX per PREEMPT protocol: Typically approved and used when oral treatments fail
 - ▶ FDA approved for chronic migraine. In-clinic procedure every 12 weeks.

VITAMINS

- ▶ Used as preventative treatments
 - ▶ Over the counter
 - ▶ Minimal/No adverse effects
 - ▶ To be taken daily
-
- ▶ Magnesium 200-600 mg daily
 - ▶ Coenzyme Q10 (CoQ10) 300 mg daily
 - ▶ Vitamin B2 400 mg daily

NEW MIGRAINE TREATMENT OPTIONS

- ▶ CGRP causes pain and inflammation in the nervous system during migraine
- ▶ Acute treatments: gepants aim to stop the process prior to inflammation
 - ▶ Oral CGRP antagonists (ubrogepant, rimegepant)
- ▶ Preventative treatments: monthly injections
- ▶ CGRP monoclonal Ab
 - ▶ Erenumab
 - ▶ Fremanezumab
 - ▶ Galcanezumab

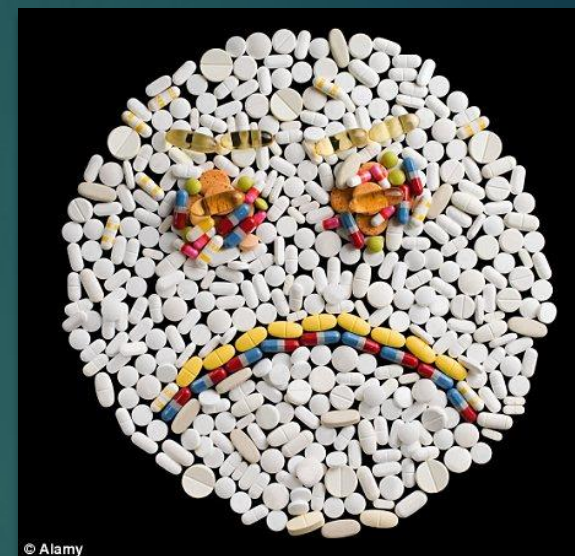
NON-PHARMACEUTICAL TREATMENTS

- ▶ Acupuncture
- ▶ Biofeedback/yoga/meditation
- ▶ Devices
 - ▶ Cefaly, sTMS



MEDICATION OVERUSE HEADACHES

- ▶ Rebound headaches
- ▶ Recurring headache induced by repetitive and chronic overuse of acute headache medication
- ▶ Goal: withdrawal of offending agent
 - ▶ Baseline headache pattern can therefore be established
- ▶ Can be precipitated by many agents: NSAIDs, Acetaminophen, Aspirin, Caffeine, Triptans, Opioids, Butalbital
- ▶ Limit future abortive use to no more than 2-3 times weekly



OPIOIDS AND BUTALBITAL

- ▶ NOT considered appropriate abortive treatments
- ▶ More effective, migraine-specific treatments available
- ▶ Risks:
 - ▶ Transform episodic to chronic migraine
 - ▶ Rebound headaches
 - ▶ Withdrawal symptoms
 - ▶ Risk of abuse
- ▶ Opioids
 - ▶ Norco, Percocet, Oxycodone, Dilaudid etc and
- ▶ Butalbital
 - ▶ Fioricet, Fiorinal

MIGRAINE VS SINUS HEADACHE

- ▶ Migraine is commonly misdiagnosed as a sinus headache
- ▶ Migraine is commonly associated with forehead and facial pressure over the sinuses, nasal congestion and runny nose
- ▶ True sinus headache, or rhinosinusitis is due to viral or bacterial infection.
 - ▶ Thick, discolored nasal discharge, possibly decreased smell or no smell, facial pain or pressure and commonly fever
 - ▶ Headache resolves with treatment of underlying infection

RED FLAGS



- ▶ Worst headache of your life
- ▶ Abnormal neurologic examination, change in mental status
- ▶ New headaches in the setting of cancer, HIV, immunocompromised status
- ▶ Signs of illness: fever, rash etc
- ▶ New headache in age > age 50

LIFESTYLE CHANGES

- ▶ Regular sleep schedule
 - ▶ Address sleep apnea, insomnia
- ▶ Regular meal schedule
 - ▶ Do not skip meals
 - ▶ Less sugar intake
 - ▶ Avoid MSG
 - ▶ Less/consistent caffeine intake, avoid energy drinks
- ▶ Regular exercise schedule
 - ▶ Low impact exercises

LIFESTYLE CHANGES

- ▶ Work life
 - ▶ Taking breaks from screen time
 - ▶ Blue light blocking glasses
 - ▶ Ergonomic changes
- ▶ Stress reduction
- ▶ Avoidance of triggers
- ▶ Address other comorbid disorders

Migraine apps

- ▶ Migraine buddy
- ▶ CURABLE
- ▶ Migraine monitor
- ▶ N1-Headache

QUESTIONS?

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