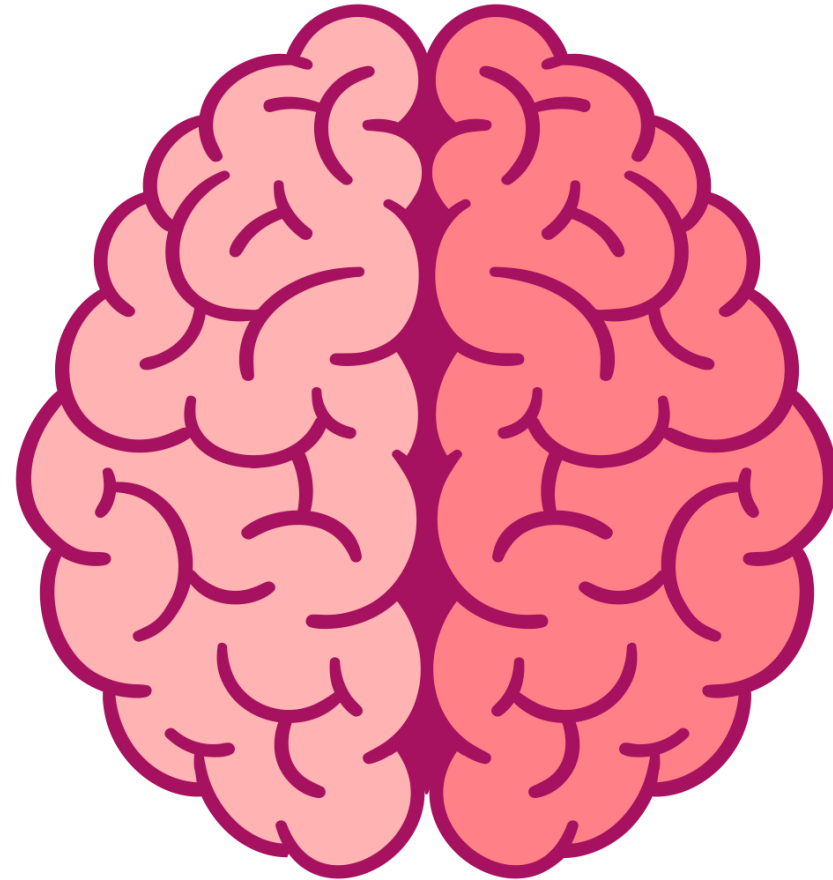


# Key Strategies for Pharmacologic Migraine Management

---

Laurel Short, DNP, FNP-C, CAQ



# Disclosure

- Speaker's Bureau, Abbvie: botulinum toxin, atogepant, ubrogepant
- All relevant financial relationships have been mitigated

# Quiz Your Current Migraine Knowledge

Which type of migraine is most common?

- a) Chronic migraine
- b) Migraine with aura
- c) Episodic migraine
- d) Migraine associated with analgesic overuse

Which of the following are CGRP antagonist medications for acute therapy?

- a) atogepant
- b) ubrogepant
- c) erenumab
- d) lasmiditan

# Objectives

- Identify current diagnostic criteria for episodic and chronic migraine
- Describe pharmacologic options for acute and preventive migraine treatment
- Understand mechanism of action for newer migraine-specific CGRP antagonist medications

# Chronic Migraine Burden of Disease



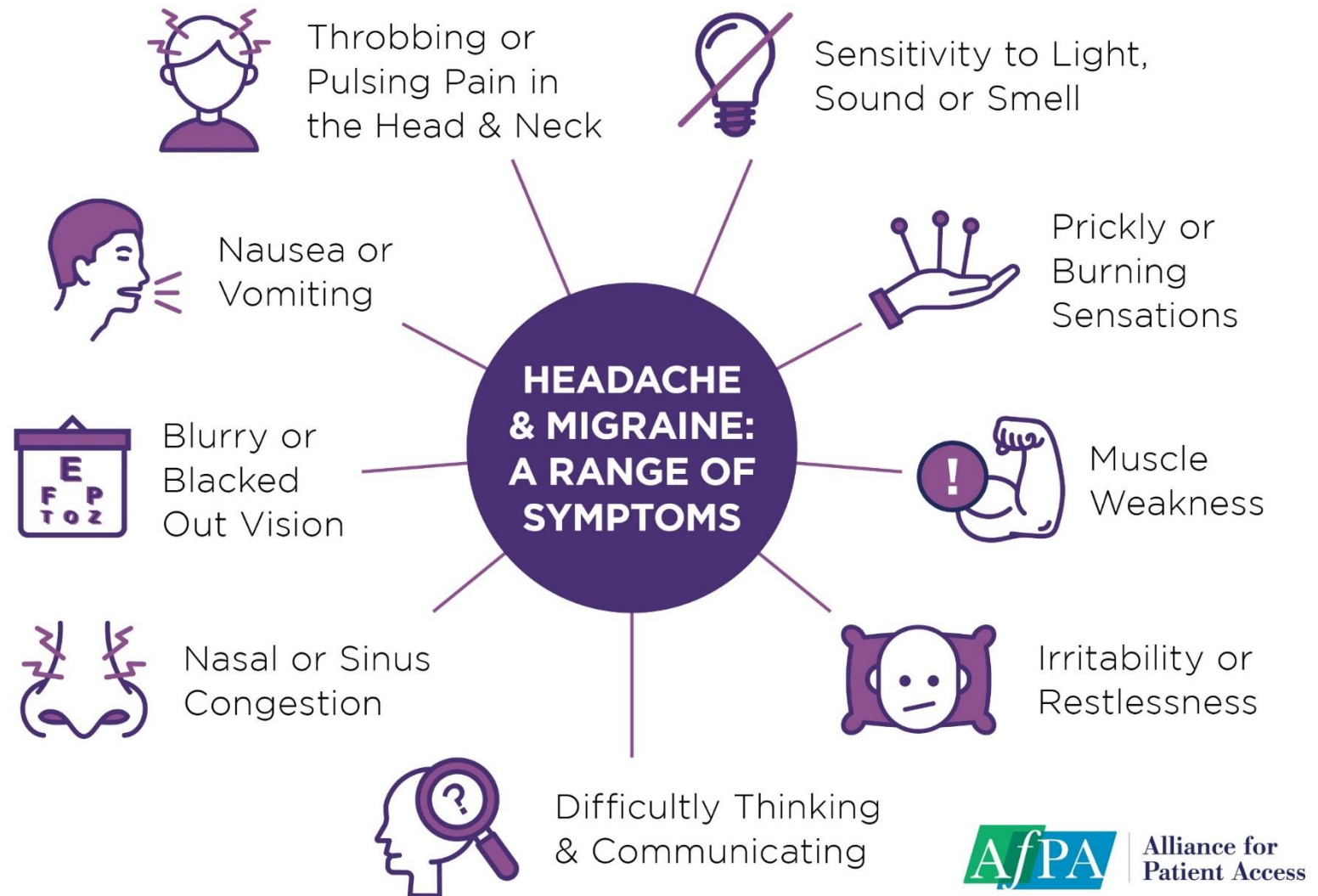
One of the top 10 causes of disability



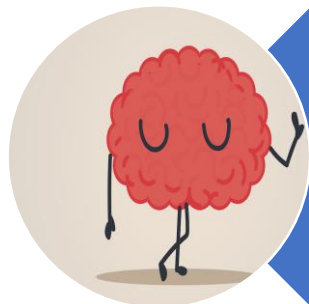
In top 5 reasons for ED visits



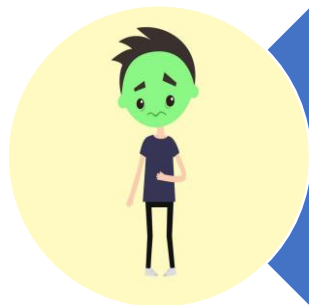
>\$13 billion decreased productivity/year



# Migraine ID-3



Has a headache limited your activities for a day or more in the past 3 months?



Are you nauseated or sick to your stomach when you have a headache?



Does light bother you when you have a headache?

# Risk factors for Episodic Chronic Migraine

## **Nonmodifiable**

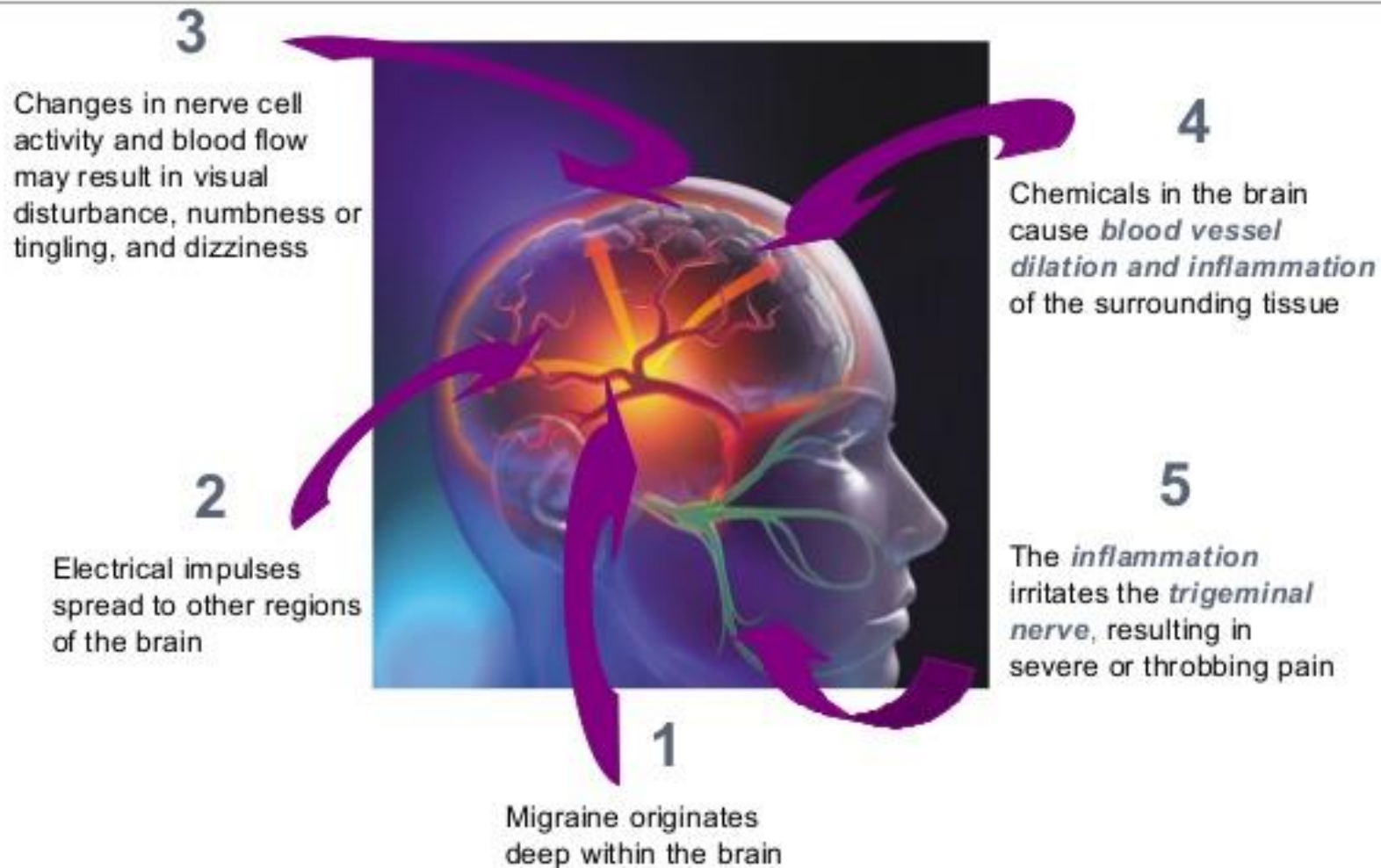
- Female gender
- Middle-age
- Lower-income, full-time work
- White or Hispanic
- Family history

## **Modifiable**

- Medication Overuse
- Comorbid pain
- Psychiatric co-morbidity
- Obesity
- Excessive caffeine intake
- Sleep-related disorders
- Stress



# What Causes Migraine?



# Should I Order Diagnostic Testing?

## The Latest from American Headache Society

1. Do not perform neuroimaging studies in patients with stable headaches that meet criteria for Chronic Migraine
2. Do not perform computed tomography (CT) imaging for headache when magnetic resonance imaging (MRI) is available, except in emergency settings
3. Mnemonic “SNOOP” (American Headache Society)

# SNOOP

## S -- Systemic Symptoms

For instance, if a person has cancer, a new headache could be a sign that the cancer has spread to the brain.

## N -- Neurological Signs or Symptoms

Changes in cognition or mental functioning, or deficits in one or more areas of the body, like weakness or loss of. Could be an indication of a stroke, mass in the brain, or other vascular or autoimmune process in the nervous system.

## O -- Onset

Headaches that hit suddenly and severely, without warning, also called thunderclap headaches, can be a sign of CVA, especially subarachnoid hemorrhage.

## O -- Older Age of Onset

Age 50 or older — one type of headache that can newly develop in middle-age is giant cell arteritis.

## P -- Prior Headache History, Pregnancy, Positional

Pay attention if the severity, frequency, or type of headache changes.

# Treatment: A Multimodal Toolkit

---



# Preventive Medications

## *Level A*

Topiramate

OnabotulinumtoxinA

## *Level B*

Antidepressants

Beta-blockers

(Triptans)

# Level A: Established as Effective

- Topiramate 25-200mg/day
- Propranolol 10-240mg/day (Note wide dose range!)
- Metoprolol 47.5-200mg/day; Timolol 10-15mg/day
- OnabotulinumtoxinA 155 units every 12 weeks
- Divalproex/sodium valproate 400-1000mg/day



# Chronic Migraine: Defined

---

Headache frequency  $\geq 15$  days per month for  $\geq 3$  months

Lifetime history of  $\geq$  migraine attacks (with or without aura)

Episodes  $\geq 4$  hours

$\geq 8$  headache days per month that fulfill criteria for migraine

Migraine pain characteristics and nausea, photophobia, phonophobia, osmophobia, aggravation of pain with activity

Usually relieved by triptans or ergots

With or without medication overuse (MOH)



# Common Side Effects

---

**Beta Blocker:** Drowsiness, fatigue, lethargy, hypotension, bradycardia

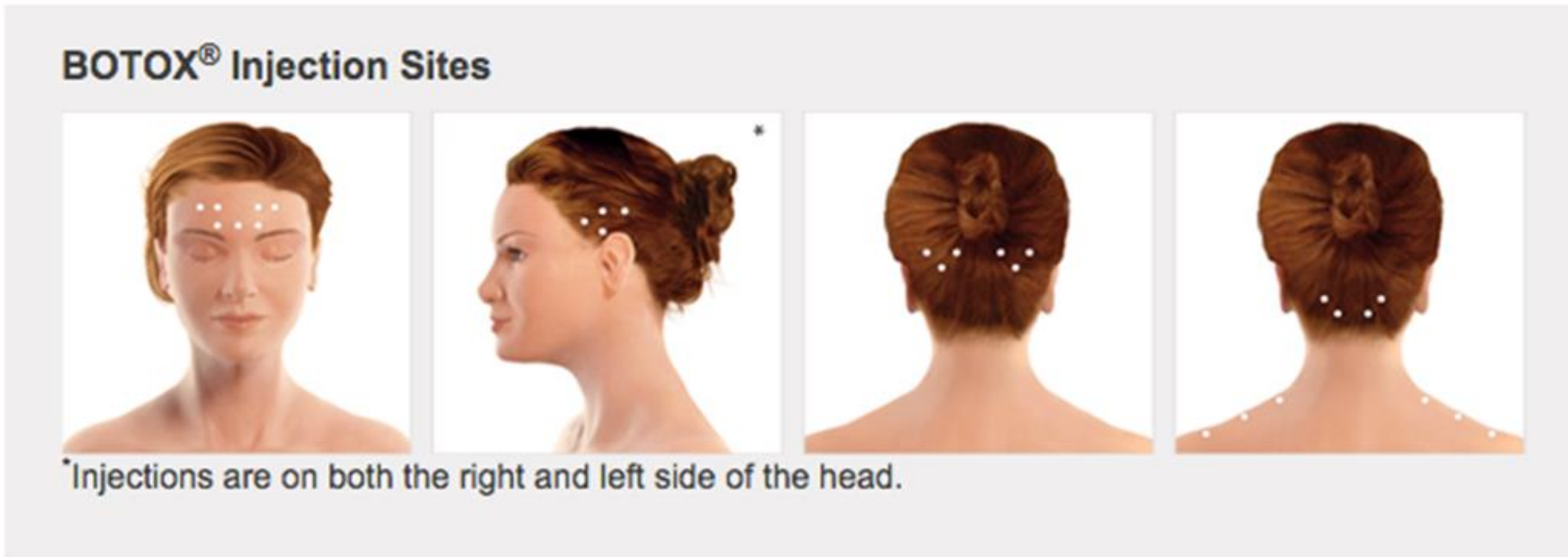
## **Anti-Seizure**

- Topiramate: Paresthesia, concentration and memory difficulty, word finding, decreased appetite, taste perversion
- Divalproex Sodium: Weight Gain, GI distress, tremor, alopecia



# OnabotulinumtoxinA

Possible SE: Headache, exacerbation of migraine, facial paresis, injection site pain, neck pain, myalgia



## Level B: Probably Effective

- Amitriptyline 25-150mg/day (take in evening)
- Naproxen 500-1100mg/day; Ketoprofen 50mg tid; Ibuprofen 200mg bid
- Magnesium 200-600mg/day (take in evening)
- Venlafaxine 150mg extended release/day

# Common Side Effects

- **Tricyclic Antidepressants:** dry mouth, constipation, dizziness, confusion, tachycardia, QT interval prolongation, weight gain, sedation
- **NSAID:** Gastritis, GI ulcer, GERD, HTN, anticoagulation
- **SNRI:** nausea, constipation, sleep difficulty, dizziness, weight change, decreased sex drive, drowsiness, blurred vision

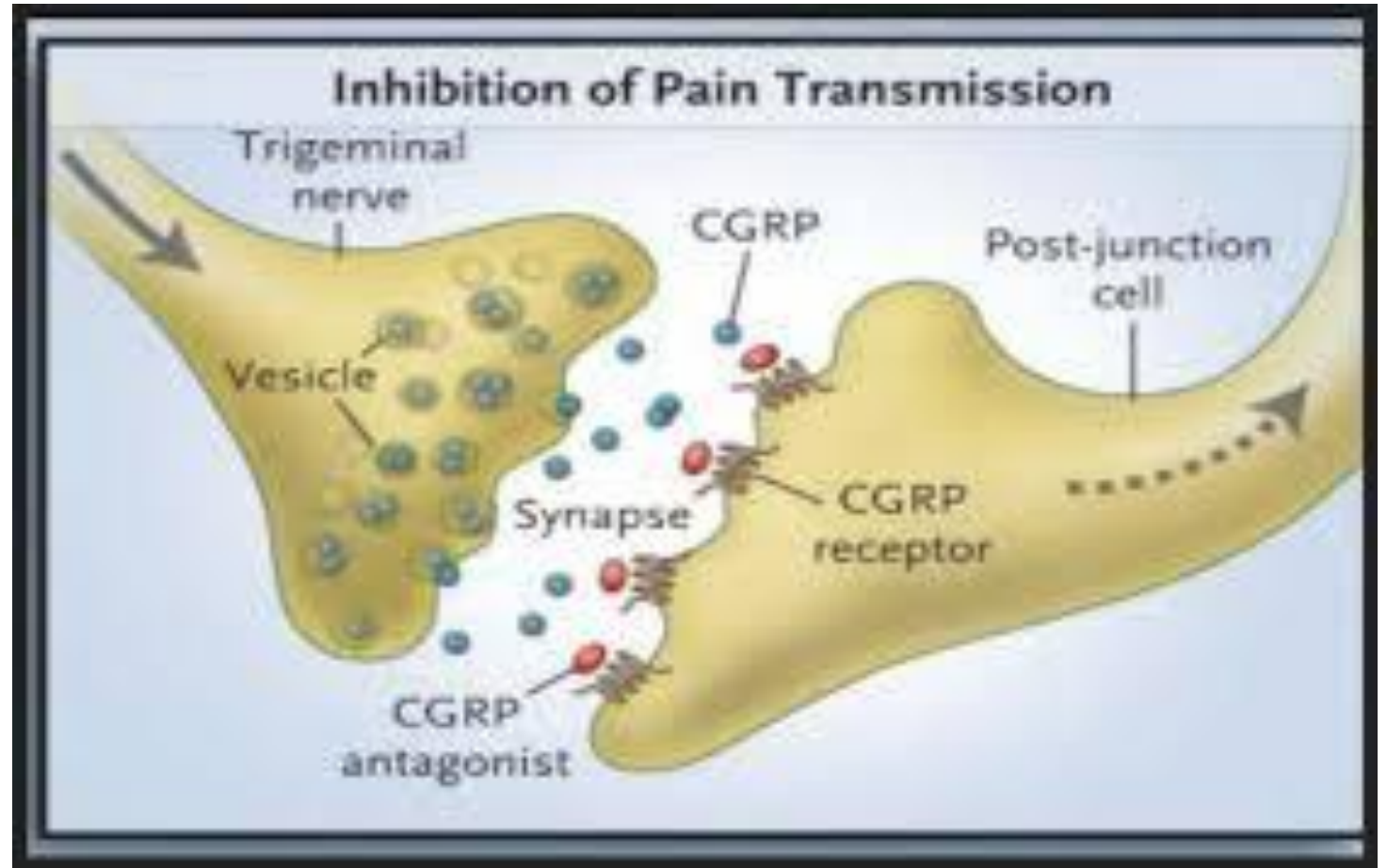
## Calcitonin Gene-Related Peptide Inhibitors

---

Block the effect of CGRP, a small protein highly prevalent in sensory neurons of the head and neck

CGRP is involved in pain transmission and severity during migraine episodes

May have a causative role in the induction of a migraine attack



# CGRP Inhibitors

## **Monoclonal Antibodies SC Injection**

- Erenumab 70 or 140mg/month
- Fremanezumab 225mg/month
- Galcanezumab 150mg/month

## **Gepants (Receptor Antagonists)**

- Atogepant
- Rimegepant

## CGRP Considerations

- ✓ Safety unknown in pregnancy or lactation
- ✓ No guidelines on concomitant therapy with other preventive migraine medications
- ✓ Cost/Insurance coverage

# Pearls for Preventive Medications

---



- Adequate length of trial and dosage titration
- Combo of 2 classes may be synergistic
- Use of migraine diary to track response
- Increase frequency of follow-ups when working on migraine management

# Acute Medications

## *Level A*

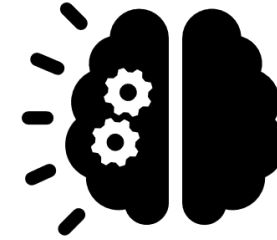
Analgesics  
Ergots (DHE nasal)  
NSAIDs  
Tryptans  
Drug Combos  
GePants

## *Level B*

Antiemetics  
Ergots (IV, IM, SC, oral)  
NSAIDs  
Other (magnesium)  
Combos



# Additional Newer Medications



**Lasmiditan:** activation of 5-HT<sub>1F</sub> receptors

- Peripheral and central effect
- May inhibit pain pathways, inhibit release of neurotransmitters; neuropeptides
- Does not cause vasoconstriction

**Intranasal DHE:** agonist of the 5-HT<sub>1B</sub>, 5-HT<sub>1D</sub>, and 5-HT<sub>1F</sub> receptors

- Rapid onset
- May be beneficial for those with partial response to other acute meds of breakthrough symptoms
- Caution with CYP3A4 inhibitors
- Contraindicated with cardiac disease and uncontrolled HTN

# Acute Med Key Points

Stratified care / Migraine Action Plan- Present the “menu”

Remember to treat nausea prn

Triptans: Caution with HTN, those with cardiac history

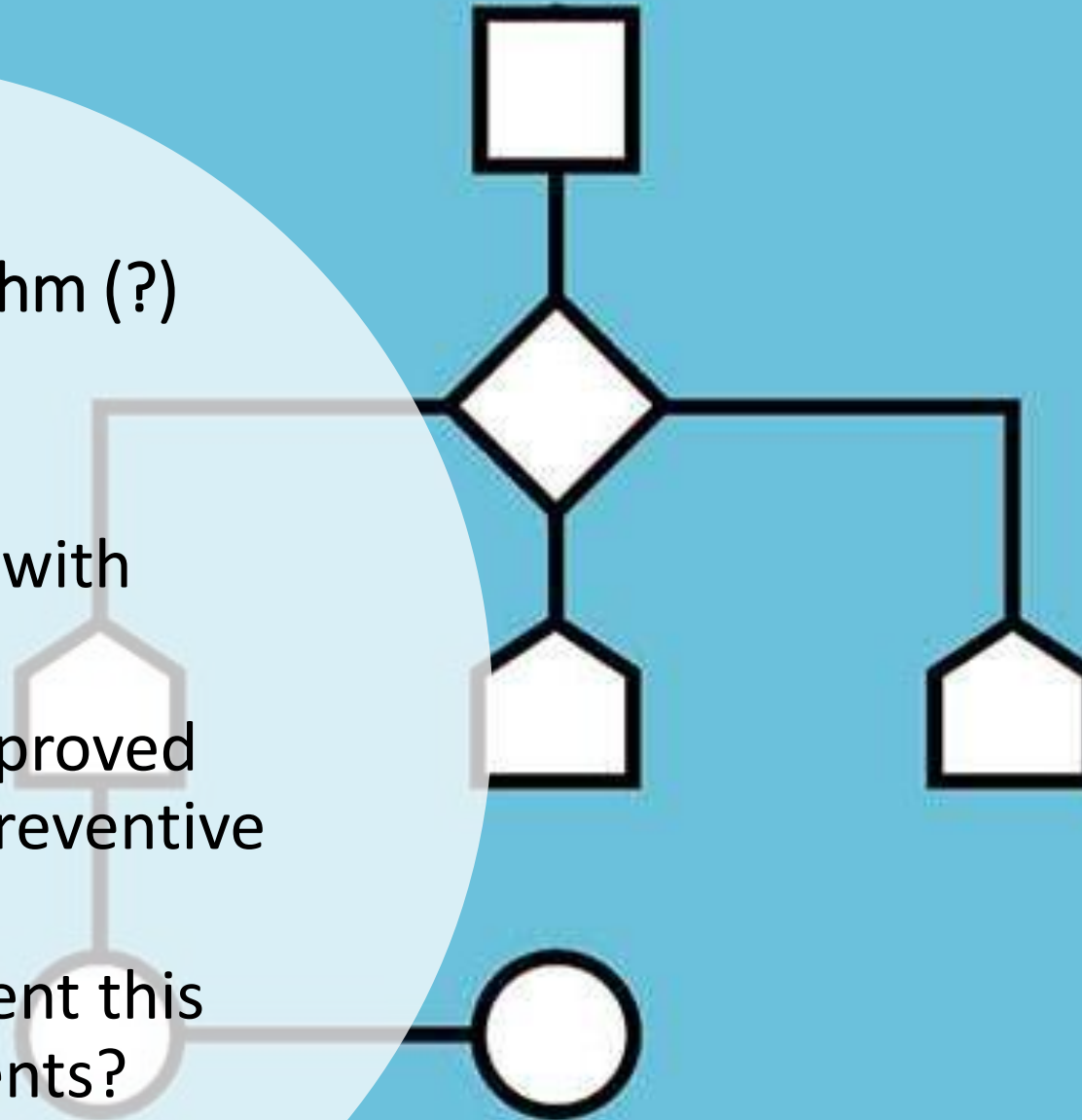
- May need to trial multiple to find most effective
- Try different route of administration!
- Patient ed on “triptan sensations”
- Ok to combine with NSAID and/or nausea med

## Updates to Algorithm (?)

Ubrogepant- gepant with  
acute use indication

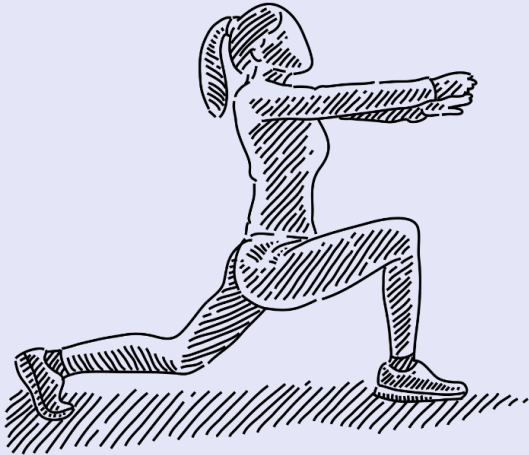
Rimegepant- FDA approved  
for both acute and preventive  
use

- How to best present this  
approach to patients?



# Self-Management

## [Yourmigrainetoolkit.com](http://Yourmigrainetoolkit.com)



Counsel on use of  
preventive and acute  
medications

Migraine Action Plan

Self-management  
strategies similar to other  
chronic diseases such as  
asthma and diabetes

# Lifestyle

---

- Avoid triggers (as able to identify)
- Exercise
- Reduce caffeine
- Treat comorbidities
- Regular mealtimes/snacks (keep blood sugar stable)



# Complementary

---

- Physical Therapy
- Mind/body strategies
- Manual therapies
- Physical Activity
- Nutraceuticals





# Comorbidities



Comorbid  
pain

Psychiatric  
diagnoses

Obesity

Neurologic  
disorders

Respiratory  
Disorders

# Resources

- [www.yourmigrainetoolkit.com](http://www.yourmigrainetoolkit.com)
- *Explain Pain* by David Butler
- Turning Point: [Turningpointkc.org](http://Turningpointkc.org)
- Dawn Buse, PhD: [dawnbuse.com](http://dawnbuse.com) (audio for relaxation)
- Free yoga:  
<https://www.youtube.com/user/yogawithadriene>
- Podcasts: Spotlight on Migraine, Pain Reframed, and Concussion Doc
- Laurel's interview June 2020 at  
<https://www.justsomepodcast.com/>





# Resources Cont.

- To find biofeedback:  
<http://www.resourcenter.net/scripts/4disapi9.dll/4dcgi/resctr/search.html?>
- US Pain Foundation: <https://www.uspainfoundation.org/>
- Nutrition and chronic pain (journal issue from Practical Pain Management):  
<https://www.practicalpainmanagement.com/treatments/complementary/diet-patients-chronic-pain>
- Headache specialty certification- <http://www.headaches.org/caq/>

# Assessment Tools



- Headache Impact Test (HIT)

<http://www.bash.org.uk/wp-content/uploads/2012/07/English.pdf>

- Migraine Disability Assessment Tool (MIDAS)

<http://www.headaches.org/wp-content/uploads/2015/01/MIDAS.pdf?x92687>

- Tracking Apps: Headache Diary, iHeadache, Migraine Buddy, Migraine Checked

**Laurel Short, DNP, FNP-C, CAQ**



**Laurel.short@gmail.com**  
**@Laurelontherun**

*Images/graphics: Unless otherwise noted, all images/graphics are from  
open sources or property of Laurel Short*

# References

- Buchholz, S. W., Budd, G. M., Courtney, M. R., Neiheisel, M. B., Hammersla, M., & Carlson, E. D. (2013). Preparing practice scholars: Teaching knowledge application in the doctor of nursing practice curriculum. *Journal of the American Association of Nurse Practitioners*, 25(9), 473–480. doi:10.1002/2327-6924.12050
- Buse, D. C., Manack, A. N., Fanning, K. M., Serrano, D., Reed, M. L., Turkel, C. C., & Lipton, R. B. (2012). Chronic migraine prevalence, disability, and sociodemographic factors: Results from the American migraine prevalence and prevention study. *Headache: The Journal of Head and Face Pain*, 52(10), 1456–1470. doi:10.1111/j.1526-4610.2012.02223.x
- Cady, R.K., & Durham, P.L. (Year?) Chronic Migraine: Diagnosis and Management. In S. Diamond, R.K. Cady, M.L. Diamond & V.T. Martin (Eds.), *Headache and Migraine Biology and Management* (pp. 99-133).Waltham, MA: Elsevier.
- Dodick, D. W., Loder, E. W., Manack Adams, A., Buse, D. C., Fanning, K. M., Reed, M. L. & Lipton, R. B. (2016). Assessing Barriers to Chronic Migraine Consultation, Diagnosis, and Treatment: results from the chronic migraine epidemiology and outcomes (CaMEO) Study. *Headache: The Journal of Head and Face Pain*, 56: 821–834. doi: 10.1111/head.12774
- Hu, X. H., Markson, L. E., Lipton, R. B., Stewart, W. F., & Berger, M. L. (1999). Burden of migraine in the United States. *Archives of Internal Medicine*, 159(8), 813. doi:10.1001/archinte.159.8.813
- Lipton, R. B. & Silberstein, S. D. (2015). Episodic and chronic migraine headache: Breaking down barriers to optimal treatment and prevention. *Headache: The Journal of Head and Face Pain*, 55: 103–122. doi: 10.1111/head.12505\_2
- Minen, M., Shome, A., Halpern, A., Tishler, L., Brennan, K.C., Loder, E., [ . . ] & Silbersweig, D. (2016). A migraine management training program for primary care providers: An overview of a survey and pilot study findings, lessons learned, and considerations for further research. *Headache: The Journal of Head and Face Pain*, 56: 725–740. doi: 10.1111/head.12803
- Moriarty, M., & Mallick-Searle, T. (2016). Diagnosis and treatment for chronic migraine. *Nurse Practitioner*, 41(6): 18-32. doi: 10.1097/01.NPR.0000483078.55590.b3
- Smith, T. R., Nicholson, R. A. & Banks, J. W. (2010). Migraine education improves quality of life in a primary care setting. *Headache: The Journal of Head and Face Pain*, 50: 600–612. doi: 10.1111/j.1526-4610.2010.01618.x
- Stewart, W. F., Lipton, R. B., Dowson, A. J., & Sawyer, J. (2001). Development and testing of the migraine disability assessment (MIDAS) questionnaire to assess headache-related disability. *Neurology*, 56(Supplement 1), S20–S28. doi:10.1212/wnl.56.suppl\_1.s20
- Walchholtz, A., Malone, C. & Bhowmick, A. (2015). The Chronic Migraineur and Health Services: National survey results. *Journal of Pain Management Medicine*, 1(1). pii: 103. Epub 2015 No