Primary Care for Primary Headaches

D. Michael Ready, MD, FAHS

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Duren "Michael" Ready, MD

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The content of my material/presentation in this CME activity will include discussion of unapproved or investigational uses of products or devices as indicated: As many headache therapies are off label I will be discussing unlabeled uses of products.

D. Michael Ready, MD

Program Director, Central Texas Headache Fellowship at Scott & White/Senior Staff Physician, Headache Clinic, Baylor Scott & White Health, Temple, Texas

Dr. Ready earned his medical degree from Texas Tech University Health Science Center in Lubbock and completed his family medicine residency at the Brazos Valley Family Medicine Residency Program in Bryan, Texas. He is one of the first family physicians to be certified in headache medicine by the United Council of Neurologic Subspecialties (UCNS). In 2014, he was awarded the National Headache Foundation Lectureship Award. He has authored many articles and book chapters on headache topics, and his first book, Discussing Migraine With Your Patients: A Common Sense Guide for Clinicians, was published in 2017 by Springer. Dr. Ready is a fellow of the American Headache Society. In 2019, Dr. Ready, his wife, and son completed the Dopey Challenge at Walt Disney World.
Learning Objectives

1. Utilize evidence-based strategies to diagnose patients presenting with headache.
2. Evaluate novel therapies for the prevention of migraines.
3. Utilize comprehensive practice guidelines to reduce inappropriate neuroimaging.
4. Identify associated conditions (e.g. depression), and red flags for potentially life-threatening causes of headache.
5. Develop collaborative management plans, emphasizing patient education on avoiding triggers that cause headache, and adherence to prescribed treatment therapies.

Audience Engagement System

Step 1

Step 2

Step 3
AES Question 1

Migraine may be most clearly differentiated from Cluster Headache by which of the following?
A. Non-Specific White Matter Lesions on MRI
B. Migraine by definition is Unilateral. Cluster is often bilateral
C. Cluster Headaches are shorter duration than Migraine
D. Cluster Headaches and not Migraine have Autonomic signs.

AES Question 2

What should guide decision making for Imaging choices in Headache?
A. Headache intensity
B. Headache duration
C. Family history of Cerebral Aneurysm
D. What Secondary Headache disorder is suspected
AES Question 3

The Acute Treatment of Migraine includes all of the following except?

A. Treating at mild pain.
B. Including Triptans to treat every Migraine
C. Basing route of administration on Migraine Severity
D. Poor Acute Migraine Treatment is a risk factor for Migraine progression.

AES Question 4

How comfortable am I offering in – clinic acute migraine treatment (rescue) for my established Migraine patients with their typical migraine?

A. Very Comfortable
B. Comfortable
C. Uncomfortable
D. Very Uncomfortable
E. I’m not sure
Brain Basics

- Wired for Action not thought
  - If you have to think about running away from the tiger you are already lunch
  - Can’t think when it’s acting
- The Brain doesn’t like distress
  - When distressed, the Brain wants to distract
- Will focus on Pain above all else
  - Only understands pain as a threat to survival
  - Doesn’t distinguish among pain types
  - This focus reinforces pain as “What you pay attention to grows”

Limbic Influences in Pain
All Pain has meaning

The Sorrow that hath no vent in tears may make organs weep
Henry Maudsley

(When) the mind is hurt the body cries out
Italian Proverb

The body remembers what the mind forgets
J.L. Moreno
Not All Pain is Nociceptive

San Francisco Spine study 1992

Five childhood traumas: loss of parent, emotional neglect, substance abuse, physical abuse, sexual abuse

No risk factors = 95% chance surgical cure
1-2 risk factors = 73% chance surgical cure
3 or more risk factors = 15% chance of a surgical cure

Increased incidence of Chronic Migraine in victims of Sexual Abuse.

First things First
Primary or Secondary Headache

**Primary** – nervous system you are born with or acquire (trauma) & the environment you are in
Migraine, Cluster, Tension Type

**Secondary** – headaches that are caused by something else
Infection, Mass, Vascular, Trauma
**SNOOP4**
Ruling Out Secondary Headaches

**Systemic symptoms and signs**
**Neurologic symptoms or signs**
**Onset: peak at onset or <1 minute**
**Older: after age 50 years**
**Previous headache: pattern change**
**Postural, positional aggravation**
**Precipitated by Valsalva, exertion, etc.**
**Papilledema**

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### When & How to Image: ACR Guidelines

**Clinical Features /Red Flags that may indicate need for imaging**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Possible Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache associate with trauma</td>
<td>Bleed</td>
</tr>
<tr>
<td>New, worse, or abrupt onset or headache</td>
<td>Vascular / Bleed</td>
</tr>
<tr>
<td>Thunderclap (sudden onset of severe headache)</td>
<td>Bleed – RCVS</td>
</tr>
<tr>
<td>Pain radiating to the neck</td>
<td>Vascular</td>
</tr>
<tr>
<td>Pain due to trigeminal autonomic cephalgia</td>
<td>Neoplasm</td>
</tr>
<tr>
<td>Persistent and positional pain</td>
<td>CSF Leak / IIH</td>
</tr>
<tr>
<td>Temporal pain in older individuals</td>
<td>Giant Cell Arteritis</td>
</tr>
</tbody>
</table>

**IIH**: Idiopathic Intracranial Hypertension

**RCVS**: Reversible Cerebral Vasoconstriction Syndrome
### When & How to Image ACR Guidelines

<table>
<thead>
<tr>
<th>Suspected Condition</th>
<th>Imaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunocompromised</td>
<td>MRI /c &amp; /s Contrast</td>
</tr>
<tr>
<td>HA onset / Change in pts ≥ 60yoa</td>
<td>MRI /c &amp; /s Contrast</td>
</tr>
<tr>
<td>Meningitis</td>
<td>CT / MRI /s Contrast</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>CT / MRI /s contrast</td>
</tr>
<tr>
<td>Unilateral HA 2’ Arterial Dissection</td>
<td>MRI /c &amp; /s Contrast or MRA or CTA Head &amp; Neck</td>
</tr>
<tr>
<td>Sudden Onset / Thunderclap HA</td>
<td>CT /s Contrast or CTA /C Contrast or MRI /s Contrast or MRA /c &amp; /s Contrast</td>
</tr>
</tbody>
</table>

Remember a Radiologist is talking

Non specific White Matter Lesions – Freckles on a Red Head

### Consider imaging patients who are…

- Pregnant
- Immunocompromised
- Cancer
- Papilledema
- Systemic illnesses (including hypercoagulable disorders)
- Headache associated with Cough, Exertions or Sex
- Structural etiology: Inferior occiput HA, rhinogenic, odontogenic or maxillofacial origin
Primary Headaches in Primary Care

Tension Type Headache
Cluster Headache
Migraine

Cluster Headache – The Challenge

Principal problem is mean time to dx & use of alternative and complementary medicine
Mean time to correct diagnosis in the 1960’s been > 20yr
In Europe mean time 1st presentation to dx 4.9 - 5.3 years
US Cluster HA Survey 42% required 5 years to receive correct dx
55% suicidal thoughts, 2% reported suicide attempt
Cluster Headache

One of the most painful conditions Humans can experience
Most pain behind the eye. May radiate to the ipsilateral
temple, jaw, upper teeth, neck
Described as boring/stabbing (hot poker in the eye)
Attack lasts between 15 - 180 minutes
During cycles attacks range from QOD – 8X/day
Typically recur same time each day
Often awaken from sleep (≈ 2hours after falling asleep)

Cluster Headache - Treatment

Most treatment “off-label”

Acute sq Sumatriptan & sq DHE are FDA approved
Recently external Vagal Nerve stimulator FDA cleared -- $$$$

Galcanezumab-gnlm 300mg sq monthly for prevention

Acute therapies must work quickly and consistently (bypass gut)
Cluster Headache – Acute Treatment

O₂ 10-15 LPM via non rebreather mask – 1st line therapy (not Medicare approved)
  Breathe normally while seated & leaning forward (in some pts may delay & not abort attack)
Sumatriptan 3-6 mg SQ (12mg/day limit), 20mg IN
Zolmitriptan NS
DHE ½ - 1mg SQ/ IM/ IN
External Vagal Nerve Stimulator approved for Acute CH

Cluster Headache – Bridge Therapies

Short-term treatment to suppress attacks UNTIL preventive meds start working
Start with preventive (Steroids AND Verapamil)
Steroids Burst therapy (5 – 7 days) or taper over 2 weeks
  • Prednisone 60-80mg X 5-7 days
  • If taper reduce by 10mg Q 2 days following 5- 7-day course
  • “Dose Pack” likely to be ineffective as dose is too low
May use Ipsilateral Occipital Nerve Block with triamcinolone (40mg) or methylprednisolone (40mg) + local anesthetic of choice
Cluster Headache: Verapamil

Verapamil 360mg/d only PCDB prophylactic treatment
Start 40-80mg TID ↑ 80mg Q wk til 120mg TID. May require 480mg/d. Some up to 720mg/d. My max dose was 1080mg/d
Treating Cluster not BP – balance cardiac safety & fast attack relief
• In 29 CH pts 877mg (+/- 227mg)
• 38% (11/29) had EKG changes
• 7 pts had clinically “not relevant” bradycardia
• 14% (4/29) had serious arrhythmia (R BBB, complete heart block with junctional rhythms)
• ECG changes associated /c higher verapamil dose (1003mg +/- 295mg) vs. normal ECG 800mg +/- 143mg/d.

Cluster Headache – Verapamil Pearls

Use IR formulation Start BID then TID

For a recurrent ECH episode
  May initiate the maximum efficacious Verapamil dose at the beginning as long as the baseline ECG is WNL

Patients on verapamil should be cautious with grapefruit.
Migraine: more than a Headache

Tension Type HA & Migraine 2\textsuperscript{nd} & 3\textsuperscript{rd} most prevalent medical disorder worldwide

Migraine accounts 30\% of global burden of disability & 50\% of all Neuro disability

4\textsuperscript{th} leading cause of disability in women & 7\textsuperscript{th} overall

Lancet 2012

Why Migraine?

Why Should I Care?

6\% ♂, 18\% ♀, 33-37\% reproductive ♀, 4\% CDH

Returning armed forces 38\% ♂, 58\% ♀, 20\% CDH

Most common 25 – 55yr (most productive years)
Why Should I Care?

ID Migraine

Has a HA limited your activities for a day or more in the last three months?
Are you nauseated or sick to your stomach when you have a HA?
Does light bother you when you have a HA?

Disability + nausea = IHS migraine = 80%
Disability + 2 of 3 associated symptoms (Nausea, photo, or phonophobia) = IHS migraine = 95%

Movement* -- LOE -- SIMU

Battle of the Migraine Screens

P.O.U.N.D.
Pulsatile quality
One day duration (4 – 72hrs)
Unilateral location
Nausea or vomiting
Disabling intensity

1-2 features = 17%
3 features = 64%
4-5 features = 92%

Headache. 2004;44:323-327
CC: Headache -- Its Migraine

Patients seen in primary care
IHS diagnosis based on diary review

- Migraine-type: 94%
- Episodic Tension-type: 3%
- Unclassifiable: 3%

N = 377


Staging Migraine

Developed by Lipton, Cady, Farmer, & Bigal

1st doctor/patient book

Based on Migraine frequency not severity

www.managingmigraine.org
# Migraine Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 – Infrequent Episodic</td>
<td>≤ 1 Migraine/month</td>
<td>Education plus effective acute treatment</td>
</tr>
<tr>
<td>Stage 2 – Frequent Episodic</td>
<td>2 - 6  headache days/month</td>
<td>Education plus effective acute treatment with back up; medications limits; preventive measures</td>
</tr>
<tr>
<td>Stage 3 – Transforming Migraine</td>
<td>7 - 14 headache days/month</td>
<td>Education; preventive pharmacology; acute pharmacology with back up &amp; rescue; behavioral interventions</td>
</tr>
<tr>
<td>Stage 4 – Chronic Migraine</td>
<td>≥ 15 headache days/month</td>
<td>Education; preventive pharmacology; judicious acute pharmacology with back up and rescue; behavioral interventions</td>
</tr>
</tbody>
</table>

## Migraine Frequency

![Migraine Frequency Chart]

Headache Treatments

**Preventive** – reduce frequency, intensity and improve response to acute meds

**Abortive** – pain freedom in 2 hours

**Rescue** – when the stop medicine didn’t

Risk Factors for Progression

<table>
<thead>
<tr>
<th>Modifiable</th>
<th>Not Modifiable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attack frequency</td>
<td>Age</td>
</tr>
<tr>
<td>Poorly treated acute HA</td>
<td>Female sex</td>
</tr>
<tr>
<td>Obesity</td>
<td>Low education or SES</td>
</tr>
<tr>
<td>Snoring/OSA</td>
<td>Genetic factors</td>
</tr>
<tr>
<td>Stressful life events</td>
<td>Head injury</td>
</tr>
<tr>
<td>Medication overuse</td>
<td></td>
</tr>
<tr>
<td>Caffeine overuse</td>
<td></td>
</tr>
</tbody>
</table>

OSA=obstructive sleep apnea
## American Migraine Prevalence & Prevention on Prevention

<table>
<thead>
<tr>
<th>Should Offer</th>
<th>Should Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ≥6 HA days/month;</td>
<td>• 4-5 migraine days/month /c nl fxn</td>
</tr>
<tr>
<td>• ≥4 HA days /c some impairment;</td>
<td>• 2-3 migraine days/month with some impairment;</td>
</tr>
<tr>
<td>• ≥3 HA days /c severe impairment / bed rest</td>
<td>• 2 migraine days /c severe impairment.</td>
</tr>
</tbody>
</table>

• **Not indicated** ≤4 HA days & no impairment or 1 HA day/month regardless of impairment

## Migraine Preventive Therapy

**Education**

- [https://www.bontriage.com/](https://www.bontriage.com/)
  - Does a HA Hx for you. Written by HA experts.
- [www.Managingmigraine.org](http://www.Managingmigraine.org)
  - Sign up & receive about 10 emails
  - Refers to The Headache Friendly Lifestyle
  - Download free for Kindle Unlimited

- The Woman’s Migraine Toolkit – Dawn Marcus
- Knock Out Headache - Gary Ruoff
Migraine Prevention Utilization

53% of Migraneurs meet disability and frequency criteria for prevention

<5% of Migraneurs are on preventive therapy

Prevention Saves You Money!

18-month comparison study
Acute vs acute/preventive therapies
  • Office visits ↓ 51%
  • ED visits ↓ 82%
  • CT scans ↓ 75%  MRI scans ↓ 88%
  • Medication costs ↓ $48 - $138/month/patient


### AAN/AHS Preventive Recommendations

#### Level A
- Divalproex Sodium
- Sodium valproate
- Topiramate
- Metoprolol
- Propranolol
- Timolol
- Frovatriptan (MRM)

#### Level B
- Amitriptyline
- Venlafaxine
- Atenolol
- Nadolol
- Naratriptan (MRM)
- Zolmitriptan (MRM)

### Prevention – Pound of Cure

Start low & go slow

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Supplements – Mg\(^{++}\) 500mg, Riboflavin 400mg, CoQ-10 200mg BID, Butterbur (should be PA free - HA docs starting to avoid Butterbur)

Melatonin 3 – 5mg

Membrane Stabilizing medications-Valproate, Topiramate, Gabapentin…

Anti-HTN Beta Blockers, ACE, Candesartan 16mg, CCB,

TCA (off label) most data is with amitriptyline – SSRIs not thought to be effective

OnabotuliniumtoxinA -- FDA approved for Chronic Migraine Oct 2010

Enurenumab CGRP ab approved for EM/CM in May 2018

Frenunezumab CGRP ab approved in Sept 2018

Galcanezumab CGRP ab approved in Sept 2018 Migraine June 2019 Cluster
Calcitonin Gene Related Peptide (CGRP) / Migraine

CGRP levels are increased during migraine
CGRP infusions can trigger migraine
CGRP inhibitors block migraine progression
  Reduces migraine frequency, intensity, duration
CGRP inhibition allows brain to recover more fully from a migraine event
  A brain which has not fully recovered from a migraine attack is more reactive. Leaving it more vulnerable for a subsequent attack.

Pain. 2003;106:461–47

CGRP Ab Episodic Migraine Phase 3 Trials

50% Responder Rates

2. Goadsby et al., NEJM 2017; 377:2123
3. Dodick et al., Cephalalgia 2018; 38: 1026
4. Stauffer et al., JAMA Neurol 2018; 75:1080
5. Skljarevski et al., Cephalalgia 2018; 38: 1442
CGRP Antibodies

<table>
<thead>
<tr>
<th>Pharmacologic Target</th>
<th>Erenumab Amgen</th>
<th>Galcanezumab Lilly</th>
<th>Fremanezumab Teva</th>
<th>Eptinezumab Alder</th>
</tr>
</thead>
<tbody>
<tr>
<td>CGRP Receptor</td>
<td>CGRP Ligand</td>
<td>CGRP Ligand</td>
<td>CGRP Ligand</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>EM CM</td>
<td>EM CM ECH</td>
<td>EM CM ECH</td>
<td>EM CM</td>
</tr>
<tr>
<td>Dosing</td>
<td>70mg / 140mg</td>
<td>120mg / 240mg</td>
<td>675mg →225mg X 2</td>
<td>100mg / 300mg</td>
</tr>
<tr>
<td>Notes</td>
<td>EM 140mg 50% ↓ 50% 75% ↓ 22.0% CM 140mg 50% ↓ 41.2% 75% ↓ 21.0% EM months 1-6 120mg 50% ↓ 20.5 240mg 50% ↓ 19.2 @ month 6 ~ 50%↓ EM 50% ↓ 40.8 CM 100mg ↓ 57.6% 300mg ↓ 61.4% 75% ↓ 33.1% Shown to ↓ from 1d</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Who Should Get CGRP Antibodies

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Consider for Pts /c</td>
<td>Safety concerns are outweighed by the possibility that treatment will be effective.</td>
</tr>
<tr>
<td>Severe disability with lack of benefit from existing alternatives or inability to tolerate existing alternatives</td>
<td></td>
</tr>
<tr>
<td>Difficulty adhering to regimens requiring daily medications.</td>
<td>The long duration of action and monthly or quarterly administration obviates the need for daily pills.</td>
</tr>
<tr>
<td>Polypharmacy in the context of multiple comorbid conditions</td>
<td>Antibodies offer a low risk of drug interactions.</td>
</tr>
</tbody>
</table>

Loder EW, Burch RC. JAMA Neurology 2018
**Who Should Get CGRP Antibodies**

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Avoid in Pts /c</strong></td>
<td></td>
</tr>
<tr>
<td>Infrequent headaches that respond to abortive treatment.</td>
<td>These patients are not candidates for prophylaxis, and it is safer to treat headaches individually.</td>
</tr>
<tr>
<td>Existing pregnancy or likelihood of becoming pregnant.</td>
<td>The levels of CGRP are lower in women with preeclampsia than normal pregnancy.</td>
</tr>
<tr>
<td>Known cardiovascular disease or high risk of cardiovascular disease.</td>
<td>CGRP may have a cardioprotective effect and be a vasodilatory fail-safe mechanism during vasoconstrictive or ischemic emergencies.</td>
</tr>
</tbody>
</table>

Loder EW, Burch RC. JAMA Neurology 2018

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**Who Should Get CGRP Antibodies**

<table>
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<tr>
<th>Recommendation</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise Caution for Pts who are</strong></td>
<td></td>
</tr>
<tr>
<td>Doing well on current treatments with acceptable tolerability.</td>
<td>The long-term safety risk is not worth taking.</td>
</tr>
<tr>
<td>Members of a group that was excluded from clinical trials.</td>
<td>Trial findings have uncertain generalizability.</td>
</tr>
<tr>
<td>Concomitantly, regularly exposed to vasoconstrictive drugs or substances associated with the development of reversible cerebral vasoconstrictive syndrome.</td>
<td>Use in the context of prolonged CGRP blockade may be risky</td>
</tr>
</tbody>
</table>

Loder EW, Burch RC. JAMA Neurology 2018
Headache Treatments

Preventive – reduce frequency, intensity and improve response to acute meds

Abortive – pain freedom in 2 hours

Rescue – when the stop medicine didn’t

Abortive Therapy

Goal is pain freedom in 2 hours
Treat at mild pain (prior to central sensitization)
May use polypharmacy
Treating at Mild Pain Improves Outcome

![2 Hour Pain Free Response Graph]

Cady RK et al. Headache 38:173-83; Pascual J et al. Headache 42[supl 1]:S10-S17

Which Oral Therapies?

Non-triptan
- NSAIDS
- Combinations
  - APAP/ASA/caffeine
  - Analgesics
  - Antiemetics

Triptans / Ergotamines

When to consider
- First-line therapy
- Adjunctive therapies

There is no medication that is perfect for all migraine attacks or all circumstances in which treatment is needed.
Choosing Triptans

Failure to one doesn’t predict response to other
Use over at least 3 attacks
Limit to 10 days/Month

Rapid onset of Pain

Fast acting PO Ele/Riza/Zolmi
Bypass gut
IN – Suma liquid/powder
Subcut Suma
Antiemetic PO/PR

Early GI Symptoms

Augment with antiemetic
Metoclopramide
Prochlorperazine
Bypass Gut
IN spray or powder
Injectable

Migraine Recurrence
Long Duration Migraine

Polypharmacy
NSAID/Antiemetic
Long ½ life Nara/Frova
Scheduled Dosing

Triptan Nonresponder

Start Migraine Preventive
Use Max dosage
Alternate triptan/formulation
Polypharmacy

Stratified Care

1st Question: Is this an attack I need to treat?
If Yes, then use the therapy that is most likely to Kill the Headache
…but not overkill.

Mild Disability  
Non Steroidals

Moderate Disability  
NSAIDs + Neuroleptics  
+/−Triptans

Severe Disability  
Triptans & Parenteral
What I do

Soooooo Off-Label & Remember my patients aren’t yours
3 tablets Effervescent ASA + Mg 500mg or
Ibuprofen (liquid gels better) 1000-1200mg + Mg
Naproxen 500mg + Mg
Augment /c Metoclopramide or Prochlorperazine
Tizanidine 2-4mg – it is sedating so advise appropriately
Triptan – All generic now use them!
  • Generic Sumatriptan ≤$2/pill GoodRX.com

Headache Treatments

Preventive – reduce frequency, intensity and improve response to acute meds
Abortive – pain freedom in 2 hours
Rescue – when the stop medicine didn’t
Why should I treat Acute Headaches?

Have to keep these people out of the ED

Primary Headaches are not an emergency

Not the best place – too bright, too loud, often ignored

Can’t risk exposure to opiates

More likely to V.O.M.I.T. in ED

No Opiates for Headaches

Major risk factor for Medication Overuse HA

Once established it’s a self fulfilling prophesy

Jakubowsk, et al. 2005 Wolfe Award paper

64%-71% Migraine pts pain-free 1’ /p ketorolac iv

Only factor that predicted ketorolac failure: hx of opioid txt in the nonresponders

Rewires the brain to perpetuate the HA state by inhibiting the breakdown of glutamate
Clinical Headache Rescue
Assoc. Neurologist of S. CT AHS Scientific Assembly Poster

Drop in HA Clinic – 9/05 - 8/07 500 pts

Time to Present = 104 hours (8-240h)

VAS pain: Entry 8.5 Discharge 1.5

Txt: IVF (94%), Ketoralac (84%), Suma sq (78%), Prochlorperazine (52%), Metoclopramide (21%), DHE (8%), Mg++ (4%)

Clinical Headache Rescue
UAB experience

200 pts. Randomized Optimal Self Admin or Optimal Self Admin + Optional in-clinic Headache rescue

<table>
<thead>
<tr>
<th>Optimal Self Adm</th>
<th>Clinic Rescue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>423 visits</td>
</tr>
<tr>
<td></td>
<td>33.6K ($80)</td>
</tr>
<tr>
<td>73</td>
<td>ED Visits</td>
</tr>
<tr>
<td>147.9K($2027)</td>
<td>27</td>
</tr>
<tr>
<td>ED Direct Cost</td>
<td>45.3K ($1609)</td>
</tr>
<tr>
<td></td>
<td>79% no d/a &gt; 24’</td>
</tr>
</tbody>
</table>
Clinical Headache Rescue
UAB experience

89% very satisfied

<table>
<thead>
<tr>
<th>Drug</th>
<th>#</th>
<th>Drug Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Droperidol 2.75mg</td>
<td>218</td>
<td>3.00</td>
</tr>
<tr>
<td>Diphenhydramine 50mg</td>
<td>201</td>
<td>1.25</td>
</tr>
<tr>
<td>DHE 1mg</td>
<td>167</td>
<td>42</td>
</tr>
<tr>
<td>Prochlorperazine 5-10mg</td>
<td>141</td>
<td>11.5</td>
</tr>
<tr>
<td>Promethazine 50mg</td>
<td>68</td>
<td>4.</td>
</tr>
<tr>
<td>Ketoralac 30mg</td>
<td>38</td>
<td>9 + 11 (saline)</td>
</tr>
</tbody>
</table>

Rescue Headache Interventions

IV >> IM >> PO
Sumatriptan 6mg IM/SC
Dihydroergotamine 1mg IM/SC/IV
Ketorolac 30mg IV / 60mg IM
Neuroleptics – Dopamine Antagonists (Droperidol, Metoclopramide, Prochlorperazine)
Steroids
Others – Mg⁺⁺, Valproic Acid, Diphenhydramine
Procedures – Occipital Nerve Block, Lower Cervical Intramuscular Injections
Lower Cervical Intramuscular Injections

Headache 10/06
417 ED Pts / 1 yr
65% relief in 15m
Repeat injection brought additional relief
Worsened HA in 1%

Lower Cervical Intramuscular Injections

3mL bupivicane 0.5%

25g 1.5" / 27g 1.25"

2-3cm lateral to the spinous processes between C6 & C7

AE /CI - Vasovagal, Neck stiffness, usual injection risks
Potpourri

Migraine Sunglasses FL-41 tint only
- Indoor / Outdoor tints available
- May use Flex Spending Account
- $100 – 200. Money back guarantee available

Headache Hat $40 on Amazon – really great for patients who cold helps

Timoptic % 1 drop OS/OD
- Eye exam 1st but...
- Not needed is used sub lingual
- Clinical trial underway
  • [https://clinicaltrials.gov/ct2/show/NCT02630719](https://clinicaltrials.gov/ct2/show/NCT02630719)

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Migraine in 4 Sentences
or less

It is Neurological
Its is Genetic
It is Highly Disabling
It is infinitely treatable
And it is by far the most fascinating neurological condition you can treat!

Peter Goadsby, MD
Why I Do It

• Add video here

Best Practices Recommendations

If its Headache in your office, its not a tumor, its migraine

Cluster is 1 in a 1000. Being able to recognize is life changing

Let Migraine frequency not intensity direct treatment plan.

Acutely treat migraine at mild pain with the most appropriate intervention that resolves the attack
Best Practices Recommendations

Make opiates and Butalbital containing medications rare for acute headache, best if VERY rare.

Provide interested patients with self administered parental medications for self administered rescue. They’ll thank you.

Keep your patients out of the ED. Offer rescue interventions for your established patients with their usual headaches.
Questions