Hawai‘i Health Partners Webinar:
Headache Management

Thursday, April 3, 2025

5:30pm – 6:30pm

HAWAI‘I PACIFIC HEALTH | HAWAI‘I HEALTH PARTNERS

Disclosures

- Except as noted below, the planners and presenters of this activity report no relationships with companies whose products or services (may) pertain to the subject matter of this meeting:

HHP Webinars

Best Practices for Diagnosis & Treatment of Migraine and Other Headache

CONFERENCE INFORMATION

GENERAL OBJECTIVES

This offering is intended for physicians and other health care professionals.

By the end of the course, the participant will be able to:

- Identify common headaches requiring timely management
- Make a diagnosis of migraine headache
- Use acute management options for migraine
- Use chronic preventive measures for chronic migraine

CONTINUING EDUCATION

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- Complete and submit the evaluation survey that will be emailed to you within one week of the offering.
- Speakers cannot claim credit for their own presentations.
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Webinar Information

- You have been automatically muted
  - You cannot unmute yourself

- You will be able to submit questions via the Q&A section

- As a friendly reminder, per 2025 HQIP measure, “HHP Network Engagement”, this webinar counts for HQIP credit

Best Practices for Diagnosis & Treatment of Migraine & Other Headache

John Engstrom, MD

Betty Anker Fife Distinguished Professor of Neurology

Vice Chair of Clinical Affairs

Department of Neurology, UCSF

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Disclosures

- *No conflicts of interest to disclose*
- Thanks to Dr. Morris Levin, Director of the Headache Program at UCSF
- 30 questions for note template or patient questionnaire

Medical Chart Quotes

“The patient was in his usual state of good health until his airplane ran out of gas and crashed.”

Medical Chart Quotes

“Bleeding started in the rectal area and continued all the way to Los Angeles.”

Medical Chart Quotes

“The patient has been depressed ever since she began seeing me in 2013.”

Headache (HA) Topics

- HAs requiring timely medical intervention
- Primary Headache Clinical Diagnosis
- Secondary Headaches
- Management primary headache types
  - Altering the environment-prevention
  - Acute management
  - Chronic management-prophylaxis
- Medication Overuse Headache

Old Headaches vs. New (Worrisome) Headaches

- Severity or location of headaches only occasionally helpful with diagnosis
- Historical risk factors:
  - New-onset – elderly, immunosuppressed
  - Focal neurologic signs
  - Postural – supine or standing
  - Fever, tachycardia, rash, stiff neck-meningitis
  - Sudden onset over 1-2 seconds-hemorrhage

Q1: Which Statement Regarding Postural Headaches is False?

1) Due to low or high intracranial pressure
2) Common after an LP
3) May require brain imaging to see if CSF pathways are obstructed
4) Usually require a follow-up LP
5) Low ICP headache may require a search for the anatomic source of the leak

Postural Headaches and Intracranial Pressure (ICP)

- Low ICP-headache worse with standing and resolves with supine position but not meds
  - Post-LP (risk about 5-10%)
  - Spontaneous/traumatic leaks
- Elevated ICP-Headache worse when supine
  - Mass lesions that obstruct flow CSF pathways
  - Meningitis-infection, hemorrhage, cancer
  - Nocturnal-CO 2 retention with vasodilatation

Low ICP Headache-Management

- Post LP
  - Bed rest for 5-7 days, generous caffeine
  - Persistent-anesthesiology/radiology for epidural blood patch
- Not post-LP
  - Neurologic exam and medical history
  - Brain/spine MRI for sagging brain/spinal path
  - CSF to measure opening pressure
  - CT/MR myelogram-source of leak

High ICP Headache-Management

- Neurologic exam and medical history
- Ophthal eval for papilledema + visual fields
- Brain MRI with MR venogram
- MRI negative, LP-opening pressure (OP)
- IIH (Idiopathic Intracranial Hypertension)
  - Preserve vision and relieve symptoms
  - Diamox, Lasix, steroids

Q2: Which one of the following is not a primary headache type?

1) Cluster HA
2) Cervicogenic HA
3) Migraine with aura
4) Migraine without aura
5) Tension HA

Primary Headaches (HA)

- Migraine without aura
- Migraine with aura
- Tension-type headache
- Cluster headache
- Together, these make up 98% of the headaches you will see

Migraine Without Aura

- HA attacks last 4-72 h (untreated or refractory to treatment)
- HA Features-unilateral and pulsating
  - Worse with usual physical activity (climbing stairs, walking)
  - Accompanied by nausea or emesis, photophobia or phonophobia
  - **Patient feels better in a dark room**

Migraine with Aura

- Often more than one aura symptom-visual, sensory, speech or language, motor, brainstem
- Aura spreads gradually over more than 5 minutes (not a sensory seizure over 1-5 seconds) and lasts 5-60 minutes
- Aura usually accompanied or followed by headache in < 60 minutes

Chronic Migraine

- Meets diagnostic criteria for migraine on 15+ days per month for more than 3 months
- More than 5 attacks over 3 months
- Affected more than 8 days/mo x 3 months
- Frequent HAs compromise daily functions
- HA responds to ergot, triptan or CGRP antagonists
- Does not meet criteria other HA diagnosis

Tension type HA

- More than 2 of the following 4 traits:
  - bilateral location
  - pressing or tightening (non-pulsating) quality
  - mild or moderate intensity
  - not aggravated by routine physical activity
- Both of the following:
  - no nausea or vomiting
  - no more than one: photophobia or phonophobia

Trigeminal Autonomic Cephalgias

- Cluster headache
- Paroxysmal hemicrania
- Hemicrania continua

Cluster HA-I

- Severe/very severe unilateral orbital, supraorbital and/or temporal pain lasting 15-180 min
- Frequency from 1-2/d to 8/d for > half the time when active
- Either or both of the following:
  - **A sense of restlessness or agitation**
  - At least one ipsilateral symptom or sign

Cluster HA-At Least One Ipsilateral Symptom or Sign

- Conjunctival injection and/or lacrimation
- Nasal congestion and/or rhinorrhea
- Eyelid edema
- Forehead and facial sweating or flushing
- Sensation of ear fullness
- Pupillary miosis or eyelid ptosis (Horner's syndrome)-temporary or permanent

Diagnosis of Primary Headaches

Migraine - unilateral, throbbing, nausea, wants to lay down in a dark room, +/- aura

Tension-type HA - milder, bilateral band around head, no nausea, no aura

Cluster - Unilateral, supraorbital/orbital, brief, cyclic, other symptoms affecting the eye, restless-wants to move around

Secondary Headaches-Associated with Medical Comorbidities

- Trauma or injury to the head and/or neck
- CNS vascular disease (e.g.-SDH, AVM, aneurysm)
- Headache/facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, other facial/cranial structure
- Chronic infection
- Use, withdrawal, or overuse of a substance

Post-Traumatic Headache

- Persistent post-concussive syndrome
- Can resemble other headache types including migraine
- Approaches to treatment
  - Ibuprofen or acetaminophen
  - Nortriptyline 30-50 mg/night
  - Triptans
  - CGRP antagonists
- Divided by cause or severity of head injury

Headaches from Vascular Disease

- Intracranial vessels are pain-sensitive
- Stroke-hemorrhagic, thrombotic, embolic
- Vascular anomalies-AVM, aneurysm
- Arteritis
- Dissection
- Cerebral venous thrombosis
- Post-endarterectomy

Clinical Approach to HA Patient

- Exclude urgent headaches (e.g.-infection, neoplasm, vascular dz, High ICP, low ICP)
- Exclude other secondary causes of headache by exploring comorbidities (med dz, drugs)
- Does clinical presentation fit primary HA syndrome (migraine, tension, cluster)?
- Consider all three management strategies- prevention, acute treatment, prophylaxis

Headache Disorders-Other Hx

- Diurnal periodicity
  - Divide day into quarters MN to 6 AM; 6 AM to noon; noon to 6 PM; 6 PM to MN),
  - Number HA out of 10 that begin in one quarter
- Triggers-foods, alcohol, sleep deprivation
- Current meds and substances-especially if new or prior to onset of headache
- Family history

Headache Disorders - Exam

- General - Vital signs
- Head and Neck - trauma, carotids, C-spine, TMJ, paranasal/other sinuses, greater occipital/supraorbital nerve, funduscopic exam, otoscopic exam
- Neurological - Screening neurologic exam on first visit: will be normal 95-98% of time

Personalized Primary Headache Care

- Tailor management to the patient's life circumstances
- Goal: Not cure; reduce frequency/severity of headaches and improve daily function
- How does the headache interfere with daily life (employment, family life, diet, sleep)?
- What are the 3 most intrusive/bothersome consequences of HA for the patient?

Q3: The aura of an acute headache can be used to time the onset of headache treatment.

1) True

2) False

HA Prevention Strategies

- Anticipatory Treatment
  - If aura predictably precedes HA, take acute medication during aura
  - If HA occurs in a narrow time band, then take medication 1 hour before “at risk” time
- Lifestyle-exercise, sleep, avoid triggers
- Relaxation-Yoga, biofeedback, meditation
- Other-Manual therapy, acupuncture, TENS

Acute Migraine-Non-Specific Rx

Generic	Trade	Dose
Naproxen sodium	Alleve	550 mg po
Indomethacin	Indocin	50 mg po
Ketorolac	Toradol	30-60 mg IM
Promethazine	Phenergan	5 mg IM, IV
Prochlorperazine	Compazine	5-10 mg IV, IM
Chlorpromazine	Thorazine	10-25 mg IV, IM
Butorphanol	Stadol	1 mg nasal
Meperidine	Demerol	50-150 mg IM
Morphine		5-10 IM, 2-5 IV
Valproate	Depacon	500 mg
Mg Sulfate		1 g

Common Acute Migraine Rx-Adverse Events

Medication	Adverse Events
Opioids	Addiction, tolerance
NSAIDs	GI, renal
DA antagonists	Dystonia, akathisia
Ergots	Vasoconstriction
Triptans	Vasoconstriction

Acute Migraine-Specific Rx

Generic	Trade	Dose
Sumatriptan	Imitrex	6mg IM, 20mg NS, 50-100 po
Naratriptan	Amerge	2.5 po
Rizatriptan	Maxalt	1-10 mg po
Almotriptan	Axert	12.5 mg po
Eletriptan	Relpax	40-80 mg po
Lasmiditan	*Reyvow*	*100-200 mg po*
Dihydroergotamine	DHE-50	1 mg IV, IM
	Migranal	2 mg NS
Rimegepant	Nurtec	75 mg/24 hours
Ubrogepant	Ubrelvey	50-100 mg

Common Triptan Adverse Symptoms and Contraindications

Adverse Symptoms:

- **Tingling**
- **Warmth**
- **Flushing**
- **Chest discomfort**
- **Dizziness**
- **Somnolence**
- **HA recurrence**

Contraindications

Hemiplegic/"basilar migraine"

Uncontrolled hypertension

Use within 24 hrs of an ergot

Pregnancy category C

Migraine Prophylaxis Rx Options

Decrease the frequency and severity of chronic migraine HA

- Beta blockers-propranolol, atenolol
- Tricyclic antidep-amitriptyline, nortriptyline
- Ca channel blockers-verapamil, flunarizine
- Angiotensin receptor blockers-candesartan
- Anticonvulsants-topiramate, valproate
- CGRP antagonists-Rimegepant , Erenumab, Eptinezumab

Migraine Prophylaxis-Dosing

- Anticonvulsants-topiramate 100-200 mg hs
- Beta blockers-propranolol 80 mg bid
- Tricyclic antidep-nortriptyline 30-70 mg hs
- Ca channel blockade-verapamil 80 mg tid
- Angiotensin receptor blockers-candesartan 8-16 mg
- CGRP antagonists-Rimegepant 75 mg po qod

CGRP Receptor Antagonists

- Offered to patients who have failed 2-4 other non-specific treatments
- Not for use in pregnancy/planned pregnancy
- Used in combination with non-specific Rx
- Duration at least 6 months
- Combination of gpants and monoclonal Ab?
- Situational prevention

Calcitonin Gene-Related Peptide (CGRP) Receptor Antagonists

- Rx rationale based on basic pain research
- Every other day to every 3 months
- Side effects: constipation 7%; nausea 5%
- Prophylactic options:
  - Rimegepant 75 mg po qod
  - Erenumab (Aimovig) 70 mg SQ monthly
  - Fremanezumab/galcanezumab SQ monthly
  - Eptinezumab 100 mg IV q 3 months

Botulinum Toxin (Botox)

- PREEMPT 1 + PREEMPT 2 clinical trials
  - Decrease in frequency of headache days
  - Decreased severity, duration, acute med use
  - High response placebo group-net effect modest
- A second line therapy-requires admin in clinical setting
  - High cost vs. oral medications
  - 31 injections of 5U each in 7 muscle groups

Cautions for anti-CGRP antibody use

- GI illnesses
- Vascular risks-cardiac and CAN
- Inflammatory dz
- Recent surgery/injuries
- Pregnancy
- Children/Adolescents

“Two for One” Chronic Headache Treatment

- HA + HTN-Propranolol or Candesartan
- HA + seizures-Valproate
- HA + neuropathic pain-Nortriptyline
- HA + obesity-Topiramate

Cluster HA Treatment

- Acute treatment
  - Oxygen 8-10 L/min
  - Sumatriptan SQ
  - Alternatives: ergots, lidocaine
- Break Cycle-Prednisone
- Prophylaxis:
  - Ca channel blockers-Verapamil, Amlodipine
  - Lithium or Topiramate
  - Antiepileptics -Valproate, Lamotrigine
  - Greater occipital nerve blocks
  - Galcanezumab

Tension HA Treatment

- Acute treatment
  - Acetaminophen
  - NSAIDs
  - Triptans
  - Manual therapy
- Prophylaxis
  - Lifestyle-exercise, sleep
  - Relaxation techniques and manual therapy
  - Tricyclic antidepressants

Q4: Which statement regarding medication overuse HA is false?

1) Occurs when a drug intended for acute Rx is used almost constantly and for long term
2) May require inpatient management
3) Is easily addressed with a bridging strategy
4) Requires cessation of causative medication
5) Requires exclusion of other HA diagnoses

Medication Overuse HA (MOH)

- HA on ≥15 days/month in a patient with a pre-existing headache disorder
- Regular overuse for >3 mo of one or more drugs that can be taken for acute and/or symptomatic treatment of headache
- Exclusion of other HA diagnoses
- Tolerance-more med for smaller benefit
- Dependency-withdrawal or rebound HA

HA Due to Medications or Substance Overuse

- Direct medication/substance effect
  - Long list
  - Consider new meds temporally associated with HA onset
- Withdrawal of medication/substance

Management Approach for Medication Overuse HA

- Educate patient, family, significant others
  - Inadvertent overuse to treat HA pain
  - Rebound headaches/other symptoms when trying to stop causative medication
- Stop the offending medications
- Design a “bridge therapy” to rescue from rebound HA

Bridge Rx for Chronic Medication Overuse HA

- Start HA prophylactic medications
- Choose effective acute Rx medication
- Steroids
- Clonidine
- Caffeine (No Doz)
- DHE
- NSAIDs

Challenges of Outpatient Medication Overuse HA Management

- Rebound HA or withdrawal can be difficult to treat as an outpatient
  - Offer outpatient or inpatient treatment
  - Therapeutic environment managed only by the patient and family as an outpatient
  - Can the family manage 24/7 all the symptoms of withdrawal by themselves?
- If outpatient bridge therapy does not work, inpatient Rx is still an option

The UCSF Headache Center

- Headaches (especially intractable migraine) refractory to medical treatment and other unusual or difficult headache disorders
- Outpatient consultation
- Research
- Inpatient treatment
  - IV Dihydroergotamine, chlorpromazine or lidocaine
  - Socially and medically safe discontinuation of habituating medications

Headache Management-Conclusions

- HA management requires exclusion of urgent and secondary causes of HA first
- Common Primary HAs-Migraine (with or without aura), Tension HA, and Cluster
- Management approaches: prevention, acute treatment, and prophylaxis
- Medication overuse headache is difficult to manage; may require inpatient admission

HPHMG Division of Neurology (Adult)

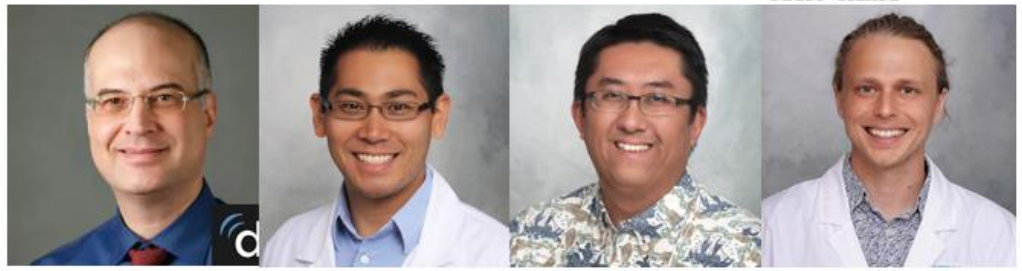
Hirota, Brandon, MD
General Neurology
EMG and Neuromuscular
Straub- King Street

Nakamoto, Beau, MD
General Neurology

Straub-King Street

Pearce, James, MD`
General Neurology
Sleep Medicine
Straub- King Street

Sakoda, Marissa, MD
General Neurology
EMG and Neuromuscular
Straub- King Street
Straub- Kailua



Chesak, David, MD
General Neurology
MS/ Neuroimmunology
Pali Momi- Aiea

Lui, Michael, MD
General Neurology
EMG and Neuromuscular
Pali Momi- Aiea

Shu, Huidy, MD, PhD
Dementia

Pali Momi- Aiea
Kaua'i Medical Clinic

Vekhter, Daniel, MD
General Neurology
EMG and Neuromuscular
Pali Momi- Aiea

Kipta, Joseph, MD
Neurology
Straub Benioff Medical Center

Rao, Surendra, MD
Neurology
Wilcox Medical Center

Tahara, Keli, MD
Neurology
Pali Momi - Aiea

Valenta, Douglas, MD
Neurology
Pali Momi - Aiea

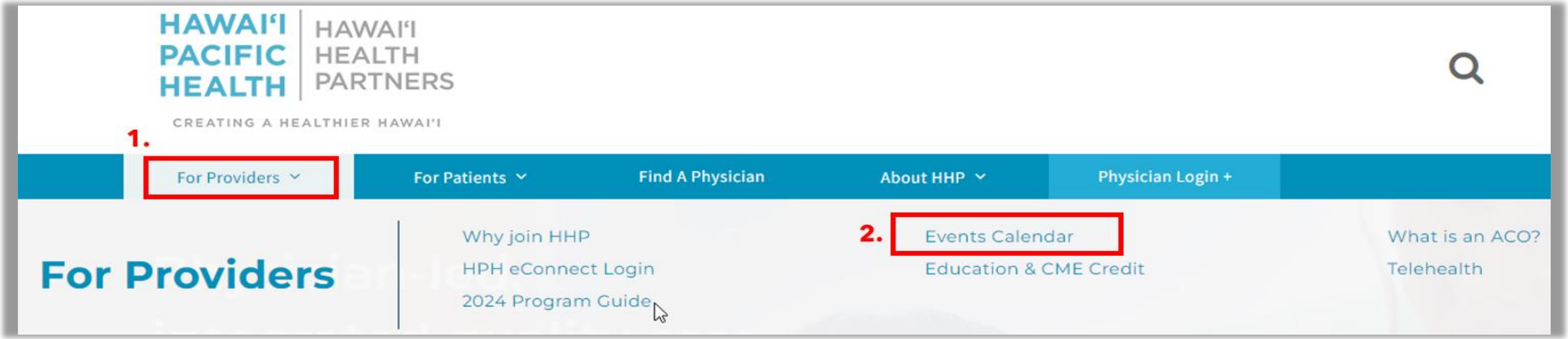
Please send referrals through HPH Epic
E-Referral to HPHMG Neurology
Questions?
Call : Straub- King Street Clinic Phone (808) 522-4476
OR Pali Momi- Aiea Clinic Phone (808) 485-4250

Next HHP Webinar: (for HQIP credit)

Date: May 22, 2025, 5:30-6:30pm

Aortic Stenosis – Dr. Andrew Baldwin

To view upcoming HHP webinars and future events, please visit our Hawai‘i Health Partners website for the “**Events Calendar**” from the “For Providers” dropdown.



For Specialists Only:

Annual Assessment of Chronic Conditions Presentation at the end of May for HQIP Credit

This measure is separate from HHP Network Engagement – Webinars measure

Please be on the lookout for a future email with details.

Thank you for joining us!

- A recording of the meeting will be available afterwards
- Unanswered question?
  - Contact us at info@hawaiihealthpartners.org

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