Tools & Tips for Headache Management in Special Populations:
The Young & Old, Pregnant & Lactating

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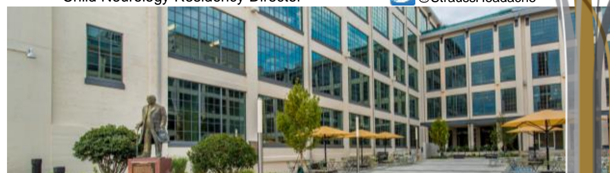

Disclosures

- No disclosures

Objectives

- Recognize diagnostic considerations and treatments for patients with headaches of special populations
- Define diagnosis of various pediatric periodic syndromes
- Familiar with different treatment strategies in special populations
- Aware of potential medication safety concerns in pregnancy and lactation
- Familiar with types of headache in elderly patients

Younger Patients (<18yo)

Migraine Definition

- 2-72 hours duration-ICHD-III β
  - (ICHD-II, 1-72 hrs)
- Bilateral, fronto-temporal
  - CAUTION if occipital
- Photo/phono (can be inferred from behavior)

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Preventive Treatment

- Topiramate, FDA approved 12-17yo
- CHAMP study: topiramate vs. amitriptyline vs. placebo (2016)
- Also often used: cyproheptadine, propranolol, gabapentin, verapamil, flunarazine (not in US)
- KEY:
  - Healthy habits (hydration, sleep, caffeine, stressors, exercise, no skipped meals)
  - CBT, physical therapy
  - Don't neglect dental care/optho

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Acute Treatment

- FDA approved triptans:
  - Rizatriptan, 6-17yo (<40 kg, 5mg), MLT/PO
  - Almotriptan, 12-17yo (6.25 or 12.5mg)
  - Treximet (sumatriptan 10mg/ naproxen 60mg),12yo+
- AAN practice parameters (2004):
  - Sumatriptan NS & PO (12yo+)
  - Ibuprofen and acetaminophen
  - AVOID aspirin- risk of Reye syndrome
- Other medication options to consider:
  - Non-pill
    - Naproxen
    - Diclofenac Potassium (FDA approved >18yo)
    - NS/chewable Zolmitriptan
  - Anti-emetics (but higher rate dystonic rxns)

Childhood Periodic Syndromes

All: ≥ 5 attacks, with recurrence in semi-predictable pattern
Normal between attacks, normal neuro exam, often family hx migraine

- **Benign Paroxysmal Vertigo of Childhood** (onset 2-5yo)
  - VERTIGO, min-hrs, no warning, resolve spontaneously
  - III-β: no LOC, at least 1: nystagmus, ataxia, vomiting, pallor, fearfulness
  - Unilateral HA may occur
  - Normal audiometric, vestibular testing, EEG

Abu-Arafeh I, et. al, *JPGN,* 1995
Ertekin V et al. *J Clin Gastroenterol,* 2006
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- **Cyclical Vomiting** (onset 5yo) 1st described by Dr. Samuel Gee in 1882
  - Nausea/VOMITING, 1hr-5 days, 4 times/hr for at least an hr, symptom-free between attacks
  - III-β: up to 10 days; 1 week apart between attacks
  - Normal GI exam, no GI disease

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- **Abdominal Migraine** (onset school age)
  - Abdominal PAIN lasting 1-72 hrs
  - midline location/peri-umbilical or poorly localized/dull or "just sore" quality/ moderate or severe intensity
  - At least 2 during: anorexia, nausea, vomiting, pallor
  - III-β: 2-72 hrs, complete freedom from symptoms between attacks
  - Normal GI exam, no GI disease

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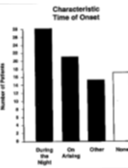
Cyclical Vomiting

Early Morning Onset

- Most Common Timing:
  - 2-4 AM
  - 6-8 AM
- 76% had either or both times

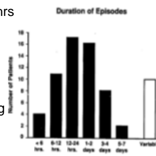


Length and Variability of Episodes

Length:
- Most commonly 24-48 hrs

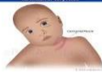
Variability:
- 85% are uniform length

Recovery Period:
- from the end of vomiting to being able to eat, "turning off a switch"



Fleisher et al. *JPGN*, 1993
Li BUK, et al. *Adv Pediatr*, 2000

Additional Episodic Syndromes



III-β: Recurrent GI disturbance

- 5 attacks of abdominal pain &/or discomfort &/or nausea &/or vomiting
- Normal GI Exam, no GI disease

III-β: Benign paroxysmal torticollis (ICHD-II, appendix)

- Recurrent attacks (typically monthly) in a young child (begins in infancy) with tilt of the head (either side/can switch sides) w/w/o slight rotation, min-days, remit spontaneously
- At least 1: pallor, irritability, malaise, vomiting, ataxia (ataxia more in older)
- During attack, head can be returned to neutral position (with possibly some resistance)

HA in ~~Elderly~~ >50 yo

Giant cell arteritis

- Symptoms: jaw claudication, polymyalgia rheumatica
- Start prednisone 60-80mg/day prior to work up.
- Diagnostic Workup: Biopsy of temporal artery, Elevated ESR, CRP

Hypnic headache

- Dull HA occurs only during sleep, awakens patient
- ≥ 2 features: >15/mo; lasts ≥ 15 min; 1st occurs >50yo
- No autonomic features, no more than 1: N/photo/phonophobia
- Treatment: Caffeine, lithium, melatonin, indomethacin

Special considerations

- Trigeminal neuralgia, post-herpetic neuralgia
- Tumor, metastasis
- Medication side effects
- Subdural hematoma (fall)
- Obstructive sleep apnea
- Cervicogenic headache
- Teeth, eyes

Treatment considerations:

- Discuss possible side effects
- lower dosing/uptitration
- Reducing polypharmacy
- Avoid Triptans (coronary artery disease)

Pregnant Women

Diagnosis: is this migraine?

- Migraine improves in 50% in 1st trimester, >75% by 3rd trimester
- Consider preeclampsia, idiopathic intracranial hypertension, subarachnoid hemorrhage, tumor, pituitary apoplexy, cerebral venous thrombosis, eclampsia, RCVS
- Think about MRI over CT, avoid contrast

Outcomes:

- Migrainers are more likely to have pre-eclampsia, deliver by C/S and have low birthweight or preterm births.

Robbins, Headache, 2017

Curr Neurol Neurosci Rep (2016) 16:40
DOI 10.1007/s11910-016-0634-9

HEADACHE (R. B. HALKER, SECTION EDITOR)

Managing Migraine During Pregnancy and Lactation

Rebecca Erwin Wells[1] · Dana P. Turner[2] · Michelle Lee[3] · Laura Bishop[1] · Lauren Strauss[1]

Pregnant Women: Treatment Options

- **Non-Pharmacologic:**
  - Healthy lifestyle habits
  - Behavioral treatment options (relaxation training, CBT, biofeedback, stress management training)
- **Procedural-based treatments:**
  - acupuncture, PT, occipital nerve blocks

Pregnant Women: Treatment Options

- **Dietary Supplements:**
  - Riboflavin (B2) – no studies in pregnancy
  - Coenzyme Q10 – no studies in pregnancy, may help prevent preeclampsia
  - Feverfew – avoid given concerns for uterine contractions
  - Pyridoxine (B6) – present in Diclegis (pyridoxine plus doxylamine succinate- A)
- **Pharmacologic:**
  - IV hydration
  - Acute Treatments: acetaminophen PO, anti-emetics (metoclopramide- B, prochlorperazine- C)
  - Prophylaxis: cyproheptadine (B), propranolol (C), amitriptyline (C), verapamil (C)
  - Steroids: methylprednisolone dosepak (C) over prednisone (D)

Treatment Options with New Potential Risks

- **Magnesium**
  - Low calcium + bone abnormalities in fetus (18 case reports in AERS)
  - New FDA warning against continuous admin of Mag sulfate > 5-7 d
  - Reclassification of magnesium sulfate infections as category D (previously FDA- Category A, AAN/AHS Level B)
- **Ondansetron**
  - Does not have FDA indication for N/V in pregnancy
  - FDA released warning: potential serotonin syndrome/dysrhythmias
  - Concern for ↑risk of cleft palate (large case-control study)

Treatment Options with New Potential Risks

- **Acetaminophen**
  - >65% of US women report use during pregnancy
  - Concerns for increased risk in ADHD and wheezing based on large prospective studies
- **Butalbital**
  - Concern for risk of congenital heart defects (TOF, pulm. valve stenosis, ASD)
  - Risk reported around time of conception

Safety of Medications During Pregnancy

Medication	Class	Potential Teratogenic Risk
Cyproheptadine	B	Limited studies, hypospadias in mat. overdose
Ondansetron	B	Congenital heart defects, cleft lip/palate
Pindolol	B	Congenital heart defects
Butalbital	C	Congenital heart defects
Ibuprofen	C, C, D	1st: miscarriage; 3rd: premature PDA closure
Triptans	C	Registries with differing data
Propranolol	C	Congenital heart defects, cleft lip/palate
Atenolol	D	Congenital heart defects, cleft lip/palate
Lisinopril	D	Fetal Death/oligohydramnios, ↓ fetal renal function, fetal lung hypoplasia, skeletal malformation
Topiramate	D	Cleft lip/palate, structural, ↓wt
Magnesium	D	Long term use: low Ca and bone change
Ergots	X	Fetal abnormalities
Depakote	X	Neural tube defects, cognition

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Safety of Medications During Lactation

Abortive

- Acetaminophen (L1)
- Ibuprofen (L1)
- Consider “Pump and Dump”
- Triptans (L3):
  - Sumatriptan - best studied
    - AAP rated “Safe”
    - Low oral bioavailability/milk concentrations
    - One study of SC 6mg - no SE
  - Eletriptan - one study, 8 on 80mg - no SE
  - Avoid Zolmitriptan - higher bioavailability and higher CNS penetration, no studies on milk transfer

Preventive

- Amitriptyline, Nortriptyline
- Propranolol, Timolol
- Verapamil
- Gabapentin
- Magnesium
- Vitamin B2
- ***Use with caution:***
  - Zonisamide
  - Atenolol (L3) / Nadolol (L4)
  - Tizanidine

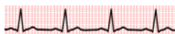
Resources: Hale Ratings (L1-L5) and LactMed

Final Tips & Pearls

Younger patients:
- Remember typical age and prominent symptom of periodic syndromes
- Think about FDA approved meds and preparations

Older patients:
- Don't miss secondary headaches unique to this age group
- Think carefully about medications

Pregnant/Lactating women:
- Ask yourself: Is this migraine? Should I be worried?
- Be aware of fetal effects with medications
- Start using available references (Lactmed, Hale Ratings, FDA)



Thank you!

Any Questions?

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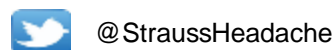 @StraussHeadache