HEADACHES IN CHILDREN: MYTHS & MANAGEMENT

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OBJECTIVES

• **Review frequency and etiologies of childhood headaches**

• **Discuss common “myths” concerning headaches in children**

• **Suggest appropriate evaluation for childhood headaches**

• **Discuss management strategies for headaches in children**
DEDICATION

Donald W. Lewis, M.D.
1951-2012
MYTH #1

Children shouldn’t get headaches
OVERALL INCIDENCE OF HEADACHES IN HEALTHCARE

- 2 – 6% ED visits
- > 18 million visits/year to PCP
HEADACHES IN CHILDREN

- 40% by age 7
- 75% by age 15
- 4 – 10% are MIGRAINE
WHERE DO THESE NUMBERS COMES FROM?

- **Stang**, *Incidence of migraine headache: A population based study in Olmstead County, Minnesota*, NEUROLOGY, 1992
- **Ries**, *National health interview survey*, PHS 86-1584
MYTH #2

Most children with headaches have something bad
75% of patients presenting to ED for headache, have headache associated with acute illness.
< 1% CHILDREN PRESENTING WITH HEADACHES HAVE BRAIN TUMORS.
WHAT DOES CAUSE HEADACHES IN CHILDREN?

HEADACHE

MIGRAINE  TENSION  ORGANIC
ETIOLOGIES OF ORGANIC HEADACHES

- Acute illness
- Brain tumor
- CNS malformation
- Dental problems
- Depression, Dysthymia
- Food allergy or sensitivity
- Hydrocephalus
- Hypertension
- Infection
- Refractive error
- Systemic illness
- TMJ problems
- Thyroid disease
- Toxins
- Trauma
MYTH #3

The longer the headaches have been happening, the worse the cause.
60% have ocular or neurologic physical findings at presentation.

88% have ocular or neurologic physical finding at 4 months.
A REVIEW OF 3,000 CHILDHOOD BRAIN TUMORS, REVEALED 98% HAD AT LEAST ONE OF FIVE SIGNS:

1. Papilledema
2. Ataxia
3. Hemiparesis
4. Abnormal eye movements
5. Depressed reflexes
THE LONGER HEADACHES HAVE BEEN ONGOING, THE LESS LIKELY THERE IS A SERIOUS ORGANIC CAUSE.

1 – 5% OF HEADACHES ARE DUE TO ORGANIC CAUSES.*

MYTH #4:

“Bad” headaches are migraines.
IHS CLASSIFICATION
PEDIATRIC MIGRAINE WITHOUT AURA – DIAGNOSTIC CRITERIA

A. At least five (5) attacks fulfilling B – D
B. Headache attack lasting one (1) hour to 48 hours
C. Headache has at least two (2) of the following:
   A. Bilateral (frontal/temporal) or unilateral location
   B. Pulsating quality
   C. Moderate to severe intensity
   D. Aggravating by routine physical activity
D. During headache, at least one (1) of the following:
   A. Nausea and/or vomiting
   B. Photophobia and/or phonophobia
MYTH #5

ALL HEADACHES IN CHILDREN DESERVE NEUROIMAGING
IS NEUROIMAGING IN CHILDREN NECESSARY?

• Study at Schneider Children’s Hospital, Long Island
• 133 patients
  • Ages 3 – 18 years of age
  • Headache sole complaint
• 78 brain imaging studies
  • 45 MRI, 27 CT, 6 MRI & CT
• 4 abnormalities, all incidental and unrelated to HA complaint
  • 3.8% of study population had abnormality

WHO DOES NEED NEUROIMAGING?

• **HIGH PRIORITY**
  - Chronic progressive pattern
  - Acute headache
  - Worst headache of life
  - Thunderclap headache
  - Abnormal neurologic exam
  - Focal neurologic symptoms
  - Presence of ventriculoperitoneal shunt
  - Presence of neurocutaneous syndrome (neurofibromatosis or tuberous sclerosis)
  - Age < 3 years

• **MODERATE PRIORITY**
  - Headaches or vomiting on awakening
  - Unvarying location of headache
  - Meningeal signs
QUICK REVIEW OF HEADACHE HISTORY
1. Do you have more than one type of headache?
2. How do the headaches begin?
3. When did the headache begin?
4. Are the headaches intermittent, progressive or staying the same?
5. How often does each headache type occur?
6. How long do the headaches last?
7. Do the headaches occur at any special time or under any special circumstance?
8. Are the headaches related to special foods, medications or activities?
9. Are there warning symptoms?
10. Where is the pain located?
11. What is the quality of pain?

12. Are there associated symptoms during the headache?

13. What do you do during your headaches?

14. What makes the headache better?

15. Does anything make the headache worse?

16. Do symptoms continue between headaches?

17. Are you being treated for or do you have any other medical problems?

18. Do you take medication for any other problem on a regular basis or on an intermittent basis?

19. Does anyone else in the family have headaches?

20. What do you think is causing your headache?
PHYSICAL EXAM FOR HEADACHES

- Look for chronic illness
- Plot growth
- Check skin
- Measure B/P
- **Carefully examine the head and neck**
- Screen mental status
- Carefully view the fundi
- Screen $V_A$ (or send to Optometry)
- Check CN & Motor System
- Screen coordination and gait
COMPREHENSIVE CRANIAL & CERVICAL EXAM FOR HEADACHES

• **EARS:**
  - external auditory meatus occlusion and motion temporomandibular joint: palpation, ROM

• **TEETH:** inspection, percussion, palpation

• **SINUSES:** modified Muller’s Maneuver

• **EYES:** palpation, inspection

• **SCALP:** palpation, inspection

• **ARTERIES:** palpation

• **DURAL SINUSES:** jugular compression

• **MENINGES:** nuchal rigidity

• **CERVICAL MUSCLES:** palpation

• **CERVICAL VERTEBRA:** palpation, ROM

• **VESTIBULAR SYSTEM:** Nylen-Hallpike (positional head turning)
KEYS TO SUCCESSFUL HEADACHE MANAGEMENT

- **Reassurance**
- **Empower family/patient to treat pain early**
- **Address lifestyle issues/triggers**
- **Individualize medication regime**
- **Regular follow-up on response to therapy**
IN YOUNGER CHILDREN WITH INFREQUENT HEADACHE EPISODES, ACETAMINOPHEN OR IBUPROFEN IN APPROPRIATE DOSES MAY BE SUFFICIENT THERAPY.
ADDRESSING LIFESTYLE ISSUES IS IMPORTANT IN ALL CHILDREN WITH RECURRENT HEADACHES.
Patients and their families must participate in their care by keeping headache diaries.

Headache diaries assist in identifying individual triggers.

<table>
<thead>
<tr>
<th>Activity at onset</th>
<th>Time/Day</th>
<th>Sleep pattern</th>
</tr>
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<tbody>
<tr>
<td>Recent dietary variations</td>
<td>Any other factors: <em>illness, stress, period</em></td>
<td>Treatment given and response</td>
</tr>
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Duration, intensity, pain description, associated symptoms
BASIC HEADACHE HYGIENE

- Avoid any identified triggers
- Minimize stress
- Maintain appropriate sleep schedule
- Regular exercise
- Nutritious meals; no skipping, snacks, if needed
- Considered elimination diet of migraine associated foods
- Limit temperature extremes
- Sunglasses or cap with visor outdoors
- Avoid excessive analgesics
- Maintain hydration
THE MOST COMMON TRIGGERS

Children <10
- Foods
- Sleep
- Stress

Children >10
- Stress
- Sleep
- Meds & Caffeine
Medication management plan for recurrent headaches should have two parts:

- **Acute headache treatment**
- **Prevention for recurrent headaches**
PAIN TREATMENT AGENTS

• **Stress/Tension and Migraine**
  - Acetaminophen
  - ASA
  - Ibuprofen or other NSAIDs
  - Acetaminophen/Isometheptane/Dichloralphenazone
  - Acetaminophen/Caffiene/Butalbital

• **Migraine Only**
  - Triptans
  - Ergotamines
TRIPTANS

- Expensive
- Not officially approved in younger children
- Do not work in stress HA
- Use should be limited to migraine patients.
Triptans should be used **early** in the headache cycle for patients diagnosed with **migraine**.

They are not an agent of last resort.
GENERAL PRINCIPLES IN MEDICATION MANAGEMENT

- Be familiar with a few agents in each class
- Triptan choice will be guided by insurer
- Start with cheapest and lowest side effect profile
- Habit forming pain meds should be avoided
WHAT IS EXPECTED EFFICACY OF ACUTE MIGRAINE TREATMENT?
% PATIENTS WITH PAIN RELIEF

- Droperidol: 82%
- Sumatriptan: 78%
- Prochlorperazine: 77%
- Metamizole: 75%
- Metoclopramide IV: 70%
- Valproate: 32%
- Kerorolac IM: 37%
- Magnesium: 43%
- Metoclopramide IM: 45%
- Meperidine: 58%
- Ketorolac IV: 60%
- Chlorpromazine: 65%
- DHE: 67%
- Metoclopramide IM: 70%
- Magnesium: 75%
- Ketorolac IV: 77%
- Meperidine: 78%

Source: Headache 2012 Blackwell Publishing
Droperidol 40%  
Sumatriptan 35%  
Prochlorperazine 53%  
Metoclopramide IM 14%  
Meperidine 30%  
Chlorpromazine 53%  
DHE 21%  
Metoclopramide IV 41%  
Prochlorperazine 53%  
Sumatriptan 35%  
Droperidol 40%  

% PATIENTS WITH PAIN RELIEF  

Source: Headache 2012 Blackwell Publishing
Headache prophylaxis should be attempted in patients with frequent headaches.
CHOICE OF PROPHYLAXIS AGENT DEPENDS ON:

- **Headache type**
- **Patient age and stature**
- **Medication side effect profile**
PROPHYLAXIS AGENTS

• Antihistamines
• NSAIDs
• β - Blockers
• Antidepressants
  • Tricyclics
  • SSRI
• Calcium channel blockers
• Anticonvulsants
If a prophylaxis agent is not effective with a 2 – 3 month trial period, try an agent from a different class.
Regular scheduled follow-up to assess diaries, adjust treatment, encourage lifestyle changes is helpful for most patients.
KEYS TO SUCCESSFUL HEADACHE MANAGEMENT

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QUESTIONS