Management of Headaches in Children and Adolescents
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SESSION OBJECTIVES

• Summarize the assessment of headaches in children and adolescents.
• Discuss treatment strategies for management of headaches including lifestyle changes and pharmacological interventions.
Management of Headaches in Children & Adolescents
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Objectives

• Review the assessment of headaches in children and adolescents

• Discuss management of headaches including non-pharmacological and pharmacological treatment
• No Disclosures to report
Prevalence

- 37-51 % of children report headaches

- 56 % boys and 74% girls between ages of 12 and 17 report having a headache in the past month

- Pre pubertal boys > girls

- After puberty girls > boys
Headache Consequences

- Third most common cause of school absenteeism
- Most common reason to seek neurology consultation
Migraine

- 50% of adults with migraine seek medical attention

- ONLY 10% of the 7% of children with migraine actually receive a migraine diagnosis
Why we don’t identify children with migraine

- Parents deny their own migraine
- Parents with migraine deny the symptoms in their child
- School nurses rarely elicit a migraine history
- Signs & symptoms of pediatric migraine may differ from adult migraine
Assessment of Headache

- Do you have more than one type of headache?
- How did the headaches begin?
- When did the headaches begin?
- Are the headaches intermittent, progressive, or stay the same?
- How often does each headache occur?
Assessment of Headache

- Are there any special circumstances of triggers?
- Are there any warning signs?
- Where is the pain located?
- What is the severity of pain? (0-10)
- What are the characteristics of the headache?
- Are there any associated symptoms?
Assessment of Headache

- What do you do during the headache?
- Does anything make your headache better?
- Does anything make your headache worse?
- Do the symptoms continue between headache?
- Are there any other medical issues?
- Are you taking any medication?
Assessment of Headache

- Would I know that you had a headache if I saw you?
- Is there a family history of headaches?

- WHAT DO YOU THINK IS THE CAUSE OF YOUR HEADACHES?
Assessment of Headache

- Medical History
- Family History
  - 90% have a close relative with migraine
  - 1 parent 40% chance
  - 2 parents 75%
- School Performance/Attendance
- Peer Relations
- Home stress/ issues
- Substance Use including caffeine
Physical Exam

- Mental Status Exam
- Neurological Exam
  - Cranial nerves
  - Motor function
  - Sensory function
  - DTRs
  - Gait
  - Pronator Drift
Fundoscopic Exam

- Papilledema: blurred disk margins
- Normal Optic Disk: sharp disk margins
Physical Exam

- Babinski reflex
- Cerebellar function
- Romberg
- Gait
- Palpate head, TMJ, sinuses, cervical muscles
- Assess for “hot” head
Lab Studies

- CBC, electrolytes, LFTs, thyroid, ferritin, UA

- Consensus is that labs are “uniformly unrevealing”

- Consider labs if you suspect something else
Lumbar puncture

- No studies support its role in managing headaches
- But useful in diagnosing pseudotumor cerebri
EEG

- Not useful in the routine evaluation of recurrent headache

- It does not provide etiology, improve diagnostic yield, or distinguish migraines from other types of headaches
EEG

- Do an EEG if you are suspicious of a seizure disorder

- 24 hour EEG vs. Sleep Deprived
Neuroimaging

- CT scan vs. MRI

- Not recommended in children with a recurrent headache and a normal neurological exam
Neuroimaging

- Consider with abnormal neurological exam i.e. focal findings, S & S of increased intracranial pressure, significant alteration in consciousness, confusion, co-morbid seizures, papilledema, abnormal eye movements, motor or gait dysfunction

- Reassurance
Neuroimaging

- Recent onset of severe headaches, change in the type of headaches, or if associated features suggest neurological dysfunction
Causes of Headaches

- No biological markers or accurate tests to confirm the diagnosis
- History of trauma
- Diagnosis is based on
  - Medical history
  - Physical exam including neuro exam
  - Appropriate tests
Migraine without Aura

- Common migraine
- 60-85% of all migraine
Pediatric Migraine without Aura

- A. At least 5 attacks fulfilling B-D
- B. Headache attack lasts 1-72 hours
- C. Headache has at least 2 of the following:
  1. Unilateral location, may bilateral, frontal/temporal (not occipital)
  2. Pulsing quality
  3. Moderate to severe intensity
  4. Aggravated by routine physical activity
Pediatric Migraine without Aura

- D. During the headache, at least 1 of the following
  - 1. Nausea and/or vomiting
  - 2. Photophobia or phonophobia

- E. Not attributed to another disorder

Adapted from: Classification & diagnostic criteria for headache disorders, cranial neuralgia and facial pain. Headache Classification Committee of the International Headache Society 2004
Pediatric Migraine without Aura

- Early prodromal features
  - Mood changes
  - Irritability
  - Lethargy/ fatigue
  - Yawning
  - Food cravings
  - Increased thirst
  - Behavior change
  - Withdrawal from activity
Pediatric Migraine without Aura

- May have a gradual onset
- Escalates over minutes to hours
- Lasts 2-72 hours
- Frontal, bi temporal, retro orbital, unilateral
- Pounding, pulsing or throbbing quality
- May increase with physical activity
Pediatric Migraine with Aura

- Visual disturbances, distortions before or as the headache begins
- Smell
- Aura is an inconsistent feature in children
- Other migraine symptoms
Pediatric Migraine with Aura

- A. At least 2 attacks fulfilling Criteria B

- B. At least 3 of the following:
  - 1. One or more fully reversible aura symptoms indicating focal cortical and/or brain stem dysfunction
  - 2. At least one aura developing gradually over more than 4 minutes or two or more symptoms occurring in succession
Pediatric Migraine with Aura

- 3. No auras lasting > 60 minutes
- 4. Headache follows less than 60 minutes

Adapted from: Classification and diagnostic criteria for headache disorder, cranial neuralgia and facial pain. Headache Classification Committee of the International Headache Society 2004
Pediatric Migraine with Aura

- Visual disturbance, distortions, or obscurations before or as the headache begins
- Ask the child to draw what they see
- Alice in Wonderland syndrome - usually no headache
Complicated Migraine

- More unusual neurologic symptoms
- May mimic an ischemic attack
- Usually occurs in an individual with history of migraine
Ophthalmoplegic Migraine

- Transient paresis of eye movements
- Onset 5-12 years of age
- Occurs during an otherwise typical migraine
- Pain is ipsilateral to the eye involved
- Aura, nausea and vomiting
- Usually a 3rd nerve palsy but all 3 cranial nerves of EOM can be involved
Retinal Migraine

- Most common aura is scotomas—sensation of seeing scintillating lights caused by ischemia of contralateral occipital cortex
- Caused by ischemia of the retinal artery
- Occurs in children with pre-existing migraines
- Transient monocular blindness
Hemiplegic Migraine

- Unilateral weakness of the face and arm
- Motor deficit may be preceded by numbness or tingling
- Weakness may precede, accompany, or follow head pain
- Right sided weakness can be accompanied by aphasia
- Rare in children, may be a familial hemiplegic migraine
Basilar Artery Migraine

- Occurs primarily in adolescent girls
- Recurrent stereotypic attacks caused by temporary dysfunction of the brain stem & cerebellum
- Sx ataxic gait, dysarthric speech, vertigo & tinnitus, visual complaints, alternating hemiplegia, impairment of consciousness, parasthesias of the face, arms or legs
Basilar Artery Migraine

- Sudden loss of postural tone, loss of consciousness, cardiac arrhythmias
- Followed by a severe headache usually localized to the occipital region
- Strong family history of migraine
- May progress to a more typical migraine syndrome
Acute Confusional Migraine

- Agitated confusion, disorientation, & combative
- May last several minutes to hours
- Usually too confused to complain of a headache
- Deep sleep after
- EEG may show disorganized pattern if done during or shortly after
Migraine Triggers

- Sleep deprivation/excess
- Missed meals/ Delayed meals
- Emotional stress
- Menstrual cycle
- Weather changes/ seasonal changes
- Travel through time zones
Migraine Triggers

- Red wine, beer, dark alcohol
- MSG
- Tyramine
- NutraSweet
- Chocolate
- Aged cheeses
- Processed meats
Tension Type Headache

- Bilateral pressing tightness on the cranium or suboccipital region
- Non throbbing
- Mild to moderate intensity
- Not usually accompanied by nausea or vomiting
- Not aggravated by activity
- Lasts 30 minutes to 7 days
Cluster Headache

- Rare < age 10

- Males : Females 9:1

- Severe unilateral orbital or supraorbital, and/or temporal pain lasting 1-180 minutes untreated
Cluster Headache

- Associated with
  - Conjunctival injection
  - Lacrimation
  - Nasal congestion
  - Rhinorrhea
  - Miosis
  - Ptosis
  - Eyelid edema
Daily Persistent Headache

- Recurrent headaches averaging 15 days per month
- No serious underlying pathology
- Physiology is not well defined
Daily Persistent Headache

- Associated with
  - Stress
  - Anxiety
  - Depression
  - Chronic somatic complaints
  - Familial patterns
Daily Persistent Headaches

- Mixed headaches

- Treatment
  - Behavioral strategies
  - Avoid overuse of medication
Post Traumatic Headache

- Severe headache
- Impaired memory
- Poor concentration
- May occur within days or weeks of the trauma
- Migraine-like quality
- Symptoms may or may not equal injury
- Can subside spontaneously
Space Occupying Lesions

- Headache < 1 month duration
- Early AM headache that improves with getting up
- Absence of family history of migraine
- Abnormal neurological examination
- Gait abnormality
Non Pharmacological Treatment

- Reassurance

- Lifestyle
  - Sleep
  - Nutrition
  - Water
  - Exercise
Non Pharmacological Treatment

- Stress management
- Cognitive Behavioral Treatment
- Guided Imagery
- Relaxation
- Biofeedback
- Massage
Supplements

- Magnesium
- Vitamin B 2 (Riboflavin)
- Coenzyme Q10
- Fish oils
- Butterbur Associated with elevated LFTs
Pharmacological Treatment

- Prophylactic versus Rescue Medications
Rescue Medications

- Acetaminophen 10-15 mg/
- Ibuprofen 10 mg/kg
- Naproxen 10 mg/kg
Rescue Medications

- Butalbital 50 mg/Acetaminophen 325/caffeine 40 mg
- Acetaminophen/Dichloralphenazone 325/100/65 Midrin
- Acetaminophen/Aspirin/caffeine 250/250/65 Excedrin Migraine > 15 years
Rescue Medications

- Sumatriptan (Imitrex)
  - SC 0.06 mg/kg up to 6 mg
  - Nasal spray 5 or 20 mg
  - Tablets 25mg, 50mg or 100 mg
Rescue Medications

- Rizatriptan (Maxalt) Tablets and ODT
  - 5 and 10 mg tablets

- Zolmitriptatan (Zomig) Tablet, ODT, and nasal spray
  - 2.5 mg and 10 mg
Nasal Spray

- Blow nose
- Water and mint ready
- Nose to toes
- Hold in to the count of 60
- Should not blow nose
- Use the water and mint
Contraindications for Triptans

- Symptoms consistent with ischemic heart disease
- Uncontrolled hypertension
- Hemiplegic or basilar migraine
- Use of another 5HT agonist
- MAOI in the past 2 weeks
- Hypersensitivity to a triptan
Antiemetics

- Ondansetron (Zofran) ODT 4-8 mg
- Metoclopramide (Reglan) 5-10 mg
Prophylactic Medications

- Cyproheptadine (Periactin) 2 mg BID or 4 mg QHS
- Propranolol (Inderal) 1 mg/kg up to 10 mg BID
- TCAs
  - Amitriptyline 0.25-0.5 mg
  - Nortriptyline 0.25-0.5 mg
Prophylactic Medications

- Gabapentin (Neurontin) start at 100 mg
- Topiramate (Topamax) up to 50 mg BID
- Divalproex (Depakote) 10 mg/kg
Evaluation

- Headache Diary

- Work with the family to identify triggers

- AVOID overuse of medication
Psychosocial Aspects of Headache

- School year
- Reflection of what is happening at home
- Relation to menstrual cycle (drop in estrogen)
- Recurrent abdominal pain
- Combination of school absenteeism and poor concentration may lead to school failure
- Depression and anxiety
- Social competence
Migraine Personality

- Perfectionistic
- Internalizes stress
- Sensitive
- Cautious
- Restrained
References
