Childhood Migraine: A Complementary and Alternative Approach

Presented by
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Faculty Disclosure Information
I have no relevant financial relationships with the manufacture of any commercial product and/or provider of commercial services discussed in this CME activity.

I do intend to discuss an unapproved / investigative use of a commercial product / device in my presentation.

Note: All therapeutic recommendations for headache management in children are off-label.

Impact of Headache
Quality of Life

Impact of Headache
Healthcare Utilization by Specialty

Headache Assessment

Primary Headache Clinical Continuum

Primary Headache

- Classic Migraine
- Chronic Daily HA

Migraine Spectrum

- Lateraled, bifrontal
- Throbbing pain
- Nausea, vomiting
- Aura

- Holocephaligia
- Occipital/neck pressure

- Rebound
- Tension

Secondary

- Migraine
- Tension
- Chronic Daily

MRI or CT

History

PE
Therapeutic Selection with Headache / Migraine
An Integrated Approach

Traditional Pharmacology
Herbals / Supplements
Behavioral Therapies
Physical Therapies

A 4000 Year History of Medicine
“Doctor, I have a headache”

- 2006 BC  “Here, eat this root”
- 1200 AD  “That root is heathen, say this prayer”
- 1830    “That prayer is superstition, drink this potion”
- 1940    “That potion is snake oil, swallow this pill”
- 1995    “That pill is ineffective, take this triptan”
- 2006    “That triptan is artificial. Here, eat this root”

Nutritional Therapies
Vitamins, Supplements and Herbals

- Vitamins
  - Riboflavin (B2)
  - Role for migraine prevention
  - Dose: 400mg/d *
  - Two controlled trials
  - Belgium study *
    - 55 patients w IHS “migraine”
    - Placebo controlled
    - 59% improved > 50% vs 15% placebo response
  - Decreased frequency and intensity of HAs
  - May require 3 mo before effect

- Magnesium
  - Long history as a medicinal
  - Reported use in headache in The Lancet 1933

- Migraine Prevention – 3 Studies
  - Double-blind design
  - Duration 2-4 mo
  - Dose: 360 / 500 / 600mg/d
  - 2/3 studies (360mg & 600mg)
  - Decreased frequency and intensity of HAs
  - Side-effect: laxative effect
  - Prelim report in childhood and menstrual migraine

- Herbs
  - Feverfew
  - Butterbur root (Petasites hybridus)
  - Mangosteen

Nutritional Therapies
Vitamins

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Nutritional Therapies
Supplements

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* * Schoenen J et al. Neurology 1998;2:466-470
* Daily Recommendation: 1.7 mg
Nutritional Therapies

Herbal

- **Butterbur (Petadolex)**

**Action**
- Anti-inflammatory effect due to inhibition of leukotriene synthesis
- Calcium channel effect

**Lipton Study – 2004**
- Three-arm, parallel group randomized trial
  - Dose: Placebo, 50mg BID, 75mg BID
  - 245 patients, age 18-65
  - IHS criteria for migraine
  - Four mo treatment trial

**Pothmann – 2005**
- Multicenter, open-label study
  - Dose: 25 – 50 mg BID (25mg tabs)
  - 108 patients, ages 6 - 17 yrs
  - IHS criteria for migraine
  - Four mo treatment trial

Nutritional Therapies

OTC Products

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<th>MigraveLief</th>
<th>HeadacheFree</th>
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Therapeutic Selection with Headache / Migraine

Traditional Pharmacology

Behavioral Therapies

Herbals/Supplements

Physical Therapies

Physical Therapies

Physical Treatment for Headaches

- **Techniques**
  - **Acupuncture**
  - Botox A
  - Massage
  - Chiropractic care
  - Hydrotherapy
  - Physical therapy
  - Yoga
  - Qigong

Traditional Chinese Medicine

- Qi (life energy force)
- Meridians (“jing luo”) – energy channels
  - 12 main channels thru which Qi flows
  - 6 for yin and 6 for yang
  - > 400 acupuncture points
- Free flow = balance and health
- Stagnation or weak flow = disease
- Acupuncturist re-establishes flow

Huangdi Neijing, "Yellow Emperor’s Classic of Internal Medicine", 2000 yrs ago
Acupuncture and NIH

1997 NIH Consensus
- Acupuncture effective for adult:
  - Post-op and chemo nausea/vomiting
  - Post-op dental pain
- Possible efficacy as adjunct/alternative
  - Painful conditions including Headaches

Acupuncture for Headaches
- Typical Rx for Chronic Recurrent Headaches
  - Six or more weekly 20 min sessions for 2-3 mo
  - Six strong randomized trials with headache reduction of 40% at 1yr

Acupuncture and NIH

Chronic Headache Prevention – Controlled
  - 401 patients, 12 week treatment
  - Age: 18-65
  - Acupuncture vs. standard medical care
  - Outcome measures: 1mo, 3mo and 1yr

Results:
- Acupuncture: reduction of 34% vs 16% at 12 mo
- Acupuncture patients experienced 22 fewer HA days per yr
- Acupuncture patients
  - Used 15% less medication
  - Made 25% fewer visits to PCP
  - Took 15% fewer days off work

Vincent CA. 1989: "Acupuncture was no more effective than sham acupuncture in reducing migraine headaches although both were more effective than a waiting list control."

Behavioral Treatment for Headaches

Techniques
- Relaxation training
- Biofeedback training
- Cognitive-behavioral therapy
  - Stress Management
- Hypnotherapy

Implementing behavioral techniques
- Identify migraine triggers and early warning signs
- Learn behavioral approach
  - Traditional study (4-12 mo training sessions)
  - Minimal-contact (home-based)
- Implement behavioral approach

Therapeutic Selection with Headache / Migraine

Acupuncture

Migraine Prevention - Controlled
  - 30 patients, 6 week treatment
  - Acupuncture: reduction of 43% vs 13% following treatment
  - Acupuncture continued to improve at 4 mo and 1 yr

  - Responders (>50% reduction in HA days) at 5-12 weeks
  - Acupuncture: 51%
  - Sham: 35%
  - Wait list: 15%

Conclusion: "Acupuncture was more effective than sham acupuncture, reducing migraines headaches although both were more effective than a waiting list control."

"Acupuncture had a significant and clinically relevant effect over no treatment, however minimal acupuncture (sham) had a similar effect.”

Behavioral Therapies

Herbal Supplements

Physical Therapies

Mental Therapies

Relaxation Therapy

Techniques
- Progressive Muscle Relaxation
- Meditation
- Imagery and visualization
- Yoga

Allows:
- Control over physiologic responses
- Lowers sympathetic arousal

Requires 6-12 sessions
- Practice 20-60 min daily
- Then integrate into daily activities to prevent / abort headaches
**Mental Therapies**

**Muscle Relaxation Therapy**

- **Migraine Evidence**
  - Several studies suggesting a 40% improvement in headaches but not universal
- **Pediatric Migraine**
  - Five controlled trials with a total of 70 pts
  - Relaxation > Psychologic placebo
  - Relaxation = Ca channel blockers and serotonergic drugs
- **Tension-type Headache**
  - Nine studies support a 60% improvement rate
  - Four trials support a 70% improvement rate

**Biofeedback Therapy**

- **Migraine Evidence**
  - Numerous studies suggesting a 30 – 50% improvement in headaches. Thermal well studied. When combined with relaxation 50 – 60% improvement
- **Pediatric Migraine**
  - Several trials all showing some degree of improvement
  - Randomized trial from 1998 showed 40% improve
- **Tension-type Headache**
  - Numerous studies (>50) support a 50 – 60% improvement
- **EMG training** appears to be best studied

**Cognitive-Behavioral Therapy**

- **What is CBT?** Cognitive-behavioral therapy is an action-oriented form of psychosocial therapy that assumes that maladaptive, or faulty, thinking patterns cause maladaptive behavior and "negative" emotions. The treatment focuses on changing an individual's thoughts (cognitive patterns) in order to change his or her behavior and emotional state.
  - **Technique**
    - Identification of thoughts and beliefs that exacerbate stress
    - Taught more effective stress coping skills
    - Often incorporating relaxation
    - Given assignments to work with coping skills

**Evidence Based Support**

**Prevention of Migraine**

- **Grade A Evidence**
  - Relaxation Therapy
  - Biofeedback
    - Thermal biofeedback with relaxation
    - Electromyographic biofeedback
    - Cognitive-behavioral therapy

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* Holroyd KA, et al 1977
  - CBT: 89 improved > 50%
  - Biofeedback: 4/10 improved
  - No Treatment: None improved
  - Most sustained improvement 2 yrs later

* AAN; Nov 20, 2000
Therapeutic Selection with Headache / Migraine

An Integrated Approach

Traditional Pharmacology

Herbals / Supplements

Behavioral Therapies

Physical Therapies

Nonpharmacologic Treatment
Considerations for Use

- Patient preference for CAMs
- Poor tolerance to pharmacologic Rx
- Poor response to pharmacologic Rx
- Medical contraindication for pharmacologic Rx
- Pregnancy, planned pregnancy, nursing
- Long-term, frequent or excessive use of analgesics or other acute Rx
- Significant stress or poor coping skills

Nutritional Therapies
Supplement

- **Coenzyme Q10**
  - Role for migraine prevention
  - Jefferson study (open label)*
    - 32 patients for three months
    - Dose: 150mg qD
    - 61% improved > 50% reduction in # of HA days/mo
    - May require 3 mo before effect
  - Zurich Study** – placebo controlled: 3 mo trial
    - 100mg TID vs. placebo
    - 48% had > 50% reduction vs. 14% for placebo

References
