Non Pharmacological Management of Migraine

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Objectives

Behavioral Approaches

Devices

Neutraceuticals
When to use

- I recommend for all patients
- Pregnancy, Lactation
- Side effects or limitations to available medications
- Preference to remain non medication
Behavioral approaches

- Relaxation training
- Temperature Biofeedback (hand warming) combined with relaxation training
- EMG biofeedback for muscle relaxation
- Cognitive Behavior Therapy (stress management and training)
Relaxation Training

- Modify headache-related physiological responses
- Decrease activity of the nervous system
- Decrease muscular tension.
- A common training procedure – progressive muscle relaxation – teaches patients to achieve a relaxed state through a series of muscle exercises and controlled breathing.
- Increased awareness and control of biological changes that can cause headaches.
Biofeedback

- Help to understand and monitor normal body responses to pain such as muscle tension, blood pressure and heart rate changes.
- Use of electronic equipment to measure and feed back information about physiologic functions—which are then modulated in desirable direction.
- Goal: balancing autonomic system activity (fight or flight response) and central nervous system.
- EMG biofeedback helps reduce muscle tension.
- Hand warming biofeedback teaches decreased nervous system arousal.
Biofeedback

- 2007 meta-analysis showed > 50 controlled trials of BF for HA; EFFECTIVE!
- Strong treatment effect that persists for over 12 months after training
- Accessible
- Affordable?
- Low Risk
- Renewed interest with hand held devices
Home Biofeedback
Cognitive Behavioral Therapy

- Symptom oriented psychotherapy focused on managing stress.
- Helps identify unique behavioral risk/trigger factors for headache (often including stress, sleep disruption, pacing, “new normal”)
- Learning to recognize and cope more effectively with headache triggers often assists patients to prevent headaches and reduce headache-related disability
Accupuncture

- Data is variable
- May be effective
- I recommend
- Typically require 6 to 12 sessions to be effective
- Generally not covered by insurance
- Cost prohibitive? 70 to 100 dollars per session
Physical Therapy

- Identifies mechanical triggers
- Postural, activities of daily living and word modifications
- Gentle joint mobilization
- Soft tissue mobilization/myofascial release
- Trigger point massage/release
- Light strengthening and conditioning to improve postural control
- 1 study showed as effective as using Topamax or propranolol for prevention.
### Devices: non-invasive neuromodulation

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<td>Supra-orbital nerve stimulation</td>
<td>Cefaly</td>
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<tr>
<td>Vagus Nerve Stimulation</td>
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<tr>
<td>Single-Pulse Transcranial Magnetic Stimulation (sTMS)</td>
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<td>Remote Electrical Neuromodulation</td>
<td>Nerivio Migra</td>
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Cefaly – supra-orbital nerve stimulation

**For Acute pain:**
Average pain intensity decreased by 57.1% after one-hour, 52.8% at two hours.

**For prevention:**
Average of 6.9 days decreased to 4.8 days
38.1% of patients had 50% improvement

**Adverse effects:**
Tingling, pain, increased headache

- Requires prescription
- Order from Cefaly.us
- 450 to 500 dollars
Gammacore: Vagus Nerve Stimulation

- Prevention and Acute Management
- Acute treatment:
  - Pain free: 21% at 1 hr, 30.4% at 2 hr
  - Pain relief: 47.6%
- Prevention:
  - 2 mo decrease by 1.7 days, 8 mo decrease by 7.9 days
- Requires prescription
- Some insurance coverage
- Cash pay $595 per month
Gammacore

Prevention

Acute Management

TREATMENT 1
MORNING
2 TWO-MINUTE STIMULATIONS

TREATMENT 2
MID-DAY
2 MORE TWO-MINUTE STIMULATIONS

TREATMENT 3
NIGHT
2 MORE TWO-MINUTE STIMULATIONS

TREATMENT 1
AT THE START OF PAIN
2 TWO-MINUTE STIMULATIONS

TREATMENT 2
IF PAIN REMAINS
20-MINUTE WAIT FROM THE START OF TREATMENT 1
2 MORE TWO-MINUTE STIMULATIONS

TREATMENT 3
IF PAIN STILL REMAINS
2-HOUR WAIT FROM THE START OF TREATMENT 1
2 MORE TWO-MINUTE STIMULATIONS
Transcranial Magnetic Stimulation
- sTMS - eNeura
Transcranial Magnetic Stimulation

Data

- Acute
  - 164 TMS, 37 sham
  - Pain free 2 hours
    - 38.7% vs 17%
  - Pain free 24 hours
    - 34% vs 17%

- Prevention:
  - 2.8 to 2.4 fewer days per month

- Rental from company for $750 for 3 months

- Migraine with aura

- Side effects:
  - Headache, dizziness, upset stomach
Remote Electrical Neuromodulation: Nerivio Migra
Remote Electrical Neurostimulation: Nerivio Migra

- 30 to 45 min device application
- Within 1 hour of onset of pain
- 66.7% had pain relief (pain decrease from mod to severe to mild or none)
- $99 for 12 45 min treatments
Neutraceuticals

- Magnesium
- Vitamin B 2 (Riboflavin)
- Coenzyme Q 10
- Melatonin
Magnesium

- Suspected low intracellular levels of magnesium, circulating blood levels are normal
- Involved in nerve hyperexcitability
- Recommended doses between **400mg to 600mg**
- Some benefit to using Magnesium Citrate
- Level B evidence American Academy of Neurology
Riboflavin – Vit B 2

- Involved in energy production for Mitochondria
- Recommended dose at 400 mg daily
- Many studies, some positive
- Side effect: yellow urine
- Level B evidence per American Academy of Neurology
Coenzyme Q 10

- Involved in cell energy metabolism
- Studied at 100 to 300 mg doses
- Some studies positive
- Recommendation between 150 mg to 200 mg daily
- Level B evidence per American Academy of Neurology
Feverfew

- **Dosing:** 125mg/day of the dried leaf
- **Maximum effect after 4-6 weeks**
- **Adverse effects:** Aphthous ulcers and gastrointestinal side effects in 5-15%;
- **Avoid during pregnancy**
- **Variability in products; combinations available with Mg, B2, ginger, others...**
Melatonin

- Decreases pain related inflammatory markers
- Dose: 6-12 mg 1 hour prior to bedtime, may dose as much as 3-4 hours prior to bedtime
- Few side effects
- Not all available formulations are consistent
Daith Piercing
Suggested Activities

- Use an app to track symptoms: migraine buddy or migraine monitor
- Avoid triggers like fatigue and missing meals
- Preservative Free diet and consider eliminating food triggers – work with a dietitian
- Consider supplements of Magnesium, Vitamin B2, Coenzyme Q10,
- Consider working with a psychologist or counselor who can help with stress management skills
- Consider acupuncture, biofeedback and physical therapy
- Consider use of neuromodulation Devices