Non Pharmacological Management of Migraine

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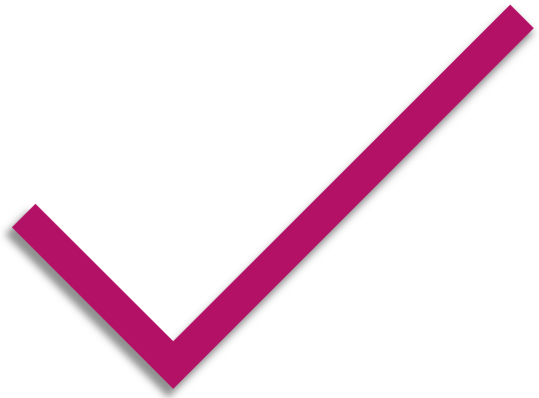
Objectives

- 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

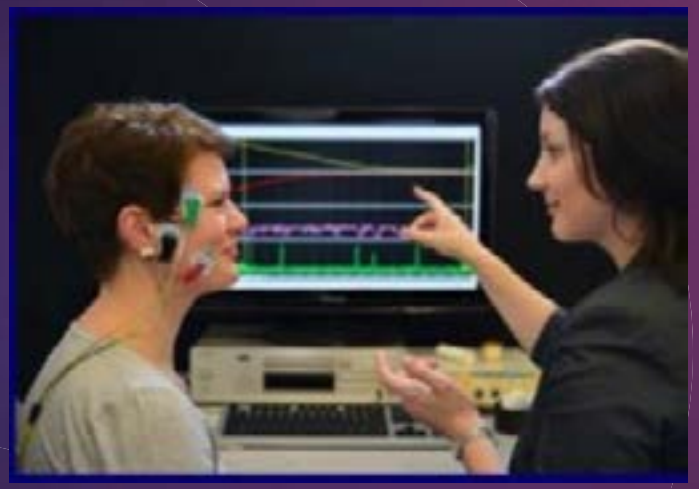
EMG biofeedback for muscle relaxation

Cognitive Behavior Therapy (stress management and training)

Relaxation Training

- Modify headache-related physiological responses
- Decease 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

Accupunture

- 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

- Supra-orbital nerve stimulation – *Cefaly*
- Vagus Nerve Stimulation – *Gammacore*
- Single-Pulse Transcranial Magnetic Stimulation (sTMS) – *eNeura*
- Remote Electrical Neuromodulation – *Nerivio Migra*

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

Cefaly Duo

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

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

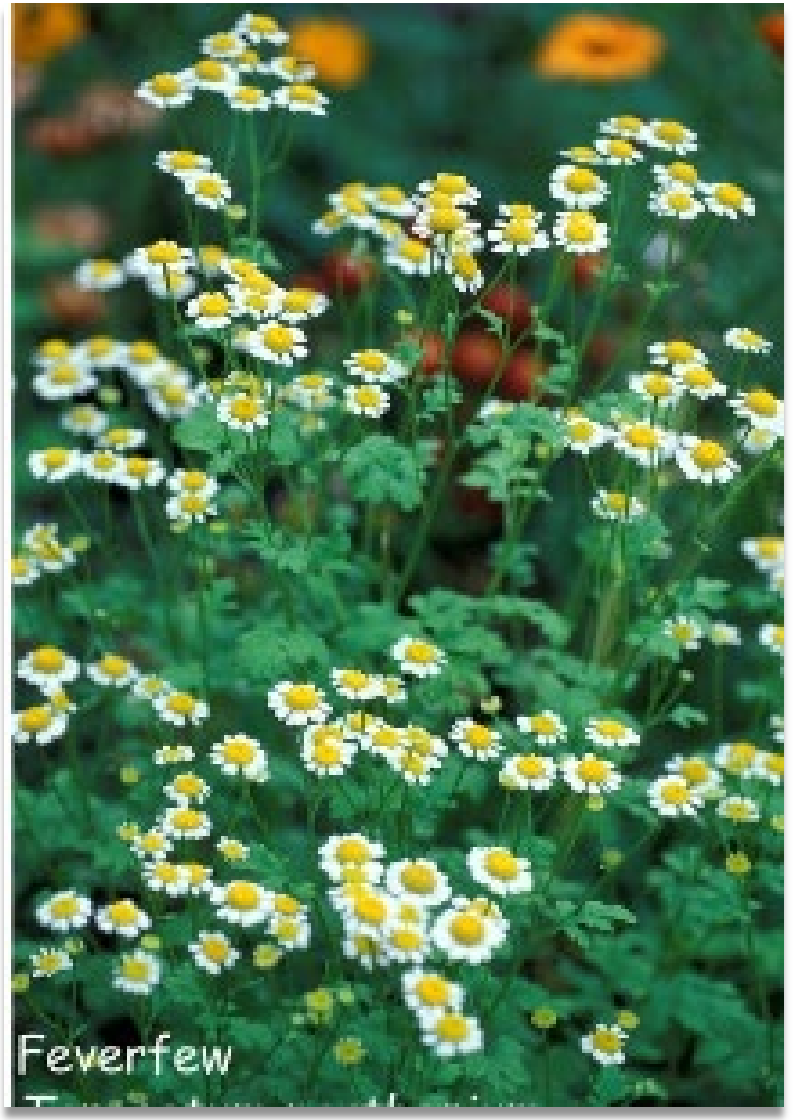
- Involved in energy production for Mitochondria
- Recommended dose at **400 mg daily**
- Many studies, some positive
- Side effect: yellow urine
- Leve B evidence per American Academy of Neurology

Coenzme 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