Objectives:

• Discuss criteria between acute and chronic migraine headaches
• Risk factors associated with chronification of headaches
• Role of comorbidities
• Discuss tools for developing an integrative and individualized headache treatment through multidisciplinary clinic
Global Burden of Disease

- Migraine 4\textsuperscript{th} most disabling medical disorder among females
- 50% CM missed 5 days household work/chores over 3 month period versus 24% EM
- 1 in 3 with CM met criteria for depression
- Grossly undertreated
- EM: 18% women vs 6% men
- CM: 1.3% women vs 0.5% men
- Estimated CM prevalence 1-3%

AMPP, 2013
Primary Headache Disorder

- 8-10% percent of 5-15 year olds will have migraines
- 28% of adolescents 15-19 years old will have migraines
  - Approximately 30% with aura
  - 62% with family history of headaches
- 50% adults with migraine headaches began <12 y/o
Age of Onset

- Prior puberty boys & girls equal
- Post-puberty females > males
- Infants of MOC w/ migraine 2.6 times infantile colic
- Children with migraine 6.6 times more likely to have colic
- 30% children experienced 1 periodic syndromes: benign paroxysmal torticollis, benign paroxysmal vertigo, abdominal migraine, or cyclic vomiting syndrome
Types of Headaches

Primary

Secondary

- Migraine
- Tension-type Headache
- Trigeminal Autonomic Cephalgia

- Tumor
- Increased Intracranial pressure
- Hydrocephalus
- Pseudotumor
- Sleep apnea
- Systemic/metabolic
## International Classification of Headache Disorders 2013

<table>
<thead>
<tr>
<th></th>
<th><strong>Migraine</strong></th>
<th><strong>Tension</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recurrent HAs</strong></td>
<td>&gt; 5 attacks</td>
<td>&gt; 10 attacks</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>2-72 hours</td>
<td>30 min to 7 days</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td>Throbbing/pounding</td>
<td>Pressure tight band</td>
</tr>
<tr>
<td><strong>Severity</strong></td>
<td>Moderate to severe</td>
<td>Mild to moderate</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Unilateral/bilateral</td>
<td>Bilateral</td>
</tr>
<tr>
<td><strong>Physical activity</strong></td>
<td>Worsens</td>
<td>No effect</td>
</tr>
<tr>
<td><strong>Associated factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea +/- vomiting</td>
<td>At least one of these</td>
<td>Not present</td>
</tr>
<tr>
<td>Photo/phonophobia</td>
<td>None, One, but not both</td>
<td></td>
</tr>
</tbody>
</table>
Investigate

Red Flags

YES

Comfort Signs

Primary Headache Disorder

Identify Syndromic Group

Episodic (<15 d/mo)
Short duration (<4 h)

Episodic (<15 d/mo)
Long duration (≥4 h)

Chronic (≥15 d/mo)
Short duration (<4 h)

Chronic (≥15 d/mo)
Long duration (≥4 h)
Chronic Headaches

- Any headache with > 15 headache days per month
- For 3 months

Chronic Headache

- Chronic Migraine
- New Daily Persistent

Side Locked
<table>
<thead>
<tr>
<th></th>
<th>Hemicrania Continua</th>
<th>New Daily Persistent HA</th>
<th>Chronic Tension Type</th>
<th>Chronic Migraine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency</strong></td>
<td>≥15 day/month</td>
<td>≥15 day/month</td>
<td>≥15 day/month</td>
<td>≥15 day/month</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Continuous</td>
<td>Continuous or intermittent</td>
<td>2-72 Hours: constant or intermittent</td>
<td>4-72 Hours: constant or intermittent</td>
</tr>
<tr>
<td><strong>Pain</strong></td>
<td>Hemicranial; steady ache, throbbing</td>
<td>Pulsating/throbbing or pressure</td>
<td>Tightening, pressure</td>
<td>Pulsating/throbbing</td>
</tr>
<tr>
<td><strong>Associated symptoms</strong></td>
<td>Ipsilateral, autonomic features</td>
<td>Variable</td>
<td>None</td>
<td>Nausea, photo and phonophobia</td>
</tr>
<tr>
<td><strong>Treatment Response</strong></td>
<td>Indomethacin</td>
<td>None</td>
<td>PT</td>
<td>Botox, CBT, IHC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pregabalin</td>
<td>Baclofen</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nerve block</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Solu-Medrol</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Medication Overuse Headache

- Those with chronic headaches are particularly at risk
- What are the medications that cause this?
  - Simple analgesics
  - Ergotamines
  - Triptans
  - Opioids
  - Combination analgesics

  \[
  \geq 15 \text{ per month for 3 months} \\
  \geq 10 \text{ per month for 3 months}
  \]
<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Episodic Migraine</th>
<th>Chronic migraine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headache frequency</td>
<td>&lt;15 days/month</td>
<td>&gt;15 days/month</td>
</tr>
<tr>
<td>Severe HA pain</td>
<td>78.1 %</td>
<td>92.4%*</td>
</tr>
<tr>
<td>Duration HA w/out meds</td>
<td>38.8 (mean hours)</td>
<td>65.1 (mean hours)*</td>
</tr>
<tr>
<td>Duration HA w/meds</td>
<td>12.8 (mean hours)</td>
<td>24.1 (mean hours)*</td>
</tr>
<tr>
<td><strong>SES characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race (%white)</td>
<td>87.3%</td>
<td>90.7%</td>
</tr>
<tr>
<td>Women (%)</td>
<td>80%</td>
<td>78.6%</td>
</tr>
<tr>
<td>Low income (&lt;$22,500)</td>
<td>24.9%</td>
<td>29.9%*</td>
</tr>
<tr>
<td><strong>Comorbidities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>17.2%</td>
<td>30.2%*</td>
</tr>
<tr>
<td>Anxiety</td>
<td>18.8%</td>
<td>30.2%*</td>
</tr>
<tr>
<td>Obesity</td>
<td>21%</td>
<td>25.5%*</td>
</tr>
<tr>
<td>Cutaneous allodynia</td>
<td>63.2%</td>
<td>68.3%*</td>
</tr>
</tbody>
</table>
Risk factors for chronification

• **Medical Condition**
  - Obesity
  - Sleep disorders and snoring
  - Depression
  - Anxiety
  - History of head or neck trauma

• **Lifestyle and Habits**
  - Caffeine intake
  - Poor response to stress
  - Medication overuse
  - Headache-specific factors
  - Frequent headache
  - Presence of cutaneous allodynia

• **Non-modifiable Factors**
  - Female
  - Low educational level
  - Younger age onset
  - Genetic predisposition
  - Low SES
Treatment – Tiered approach

• **Behavioral/Life-style**

• **Acute treatment**
  - Pharmacologic
  - Non-pharmacologic

• **Preventative treatment**
  - Pharmacologic
  - Non-pharmacologic

Same regardless of EM or CM
Headache Contributors

- Sleep
- Fluids
- Nutrition
- Exercise
- Stress

- Medications
- Food triggers: is it a myth that foods trigger headaches?
Abortive Medications:

- Maximize dose if there are no side-effects
- Change therapies/agents
- Mix and match
- Be aggressive
- Have a tiered approach
- If using plan >3 time week consider preventative
Interdisciplinary Clinic

- Criteria for clinic
Providers

- 2 Nurse Practitioners
- Clinical Psychologist
- Yoga therapist
- Nutritionist
- Nurse Coordinator
Clinic Flow

- 1st hour every patient takes part in a 50-minute group yoga session consisting of 10 asanas that promote relaxation and pain relief.
Goal of Clinic

• All patients were seen by each treatment provider, who conducted individual assessments and provided individualized treatment recommendations focused on pain management, coping skills, diet recommendations, lifestyle management strategies, and stress reduction techniques.
Yoga Data

- The average “before yoga” pain score was 3.7 (+/- 3.0) and “after yoga” pain score was 3.4 (+/-3.1) (p=0.0672), representing a decrease in pain.

- The average “before yoga” relaxation score was 5.2 (+/- 2.3) and “after yoga” relaxation score was 7.5 (+/-1.9) (p<0.0001), representing a statistically significant increase in relaxation.
Nutrition Data
Clinical Psychology Data

- Patients reported statistically significant (p<.001) lower Total PedMIDAS scores following participation in this multidisciplinary headache clinic (see Figure 1), reflecting a marked reduction in overall functional disability due to headaches.

- The average Total PedMIDAS score at baseline was 142.46 and at follow-up it was an average of 65.38.
Goal of Treatment

• 1 or less headaches per month that can respond adequately to abortive medications
• Consider drug holiday during summer months
• Life-style modifications
• Through a multidisciplinary approach patients reported lower scores on follow-up PedMidas highlighting the positive effects of participation in this clinic. This reflects the comprehensive approach necessary to effectively improve functioning for adolescents with this headache type and to address their comorbidities.

• Patients found yoga to decrease pain and improve relaxation.

• The comprehensive approach allowed for a more individualized treatment approach that better supported patients and their family.
I am healthy.
I have a future.
Final remarks

• Use international classification criteria for diagnosis of primary headache disorders
• Use your red flags to help differentiate between primary and secondary headaches
• Don’t forget to evaluate for contributors to headache generation
• Use multidisciplinary approach when possible
Thanks!

- Email—
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