Migraine Headache & Special Populations

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Potential Conflict of Interest Disclosure Statement

My spouse works for Amgen, Inc

I do not receive any direct remuneration or funding from Amgen, Inc

Objectives

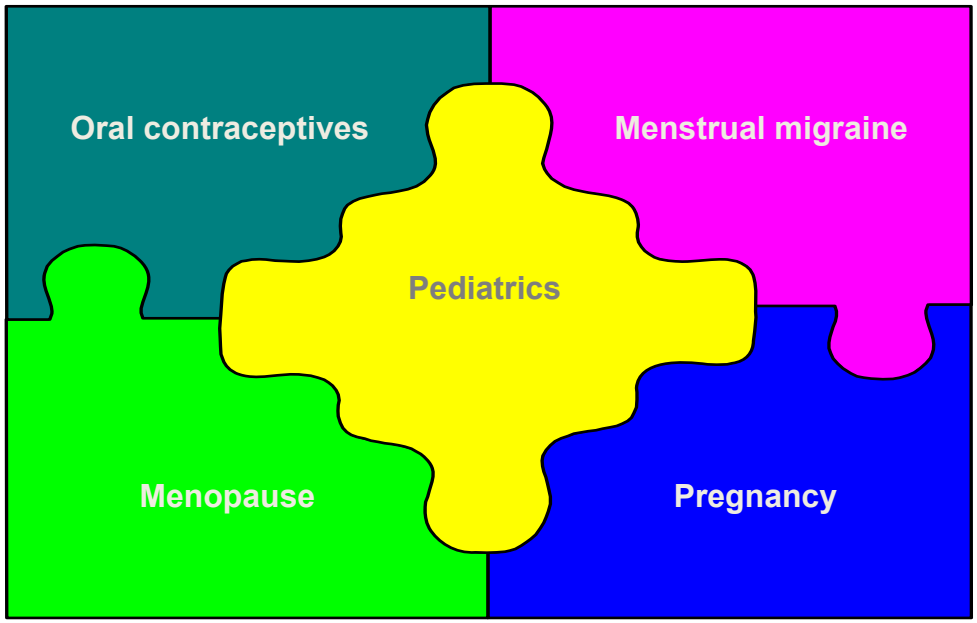
Differentiate between menstrual migraine and menstrually-related migraine.

Identify the role of estrogen in migraine over the course of a woman's life cycle.

Explain the decision-making around estrogen-containing hormonal contraceptives and women with migraine.

Characterize the symptoms, treatment and management of migraine in pediatric patients.

Special Populations and Headache



*Women who consistently experience **aura** are less prone to exacerbations of migraine HAs with hormone changes (estrogen)*

Menstrual Migraine (90% of attacks 2d before & during menses) or Menstrually-Related Migraine

- **Frequency**
  - Pure Menstrual Migraine without Aura: ~10%
  - Menstrually-related: ~60%
- **Cause:** Rapidly decreasing estrogen levels (hormone fluctuation is one of many triggers)
- **Associated conditions**
  - Fatigue, menstrual cramps, reduce tolerance of HA
- **Acute Treatment**
  - Ergots or triptans (Treximet)+ hydration
- **Prophylactic Treatment**
  - NSAIDs (naproxen) daily: start 2 days prior to anticipated migraine x 6 days
  - Triptan x 6 days (50% < freq)
    frovatriptan 2.5mg QD – BID
    naratriptan 1mg BID
    zolmitriptan 2.5mg BID - TID
  - Approved prevention agents
  - COC extended-dosing strategy (6 mo+)
  - Estradiol gel or patch ~6 days before menses to 6 days after or placebo week
  - Magnesium day 15 to end of cycle

Moschiano F et. al. *Neurological Sciences* 2005; Allais G et al. *Neurological Sciences* 2005; Silberstein SD et al. *Neurology* 2004

Oral Contraceptives and Headache

Biggest concern: risk for ischemic stroke (IS)

- WHO's 2000 guideline:
  - Women under age of 35, migraine without aura, do not smoke and few/no CV risks = **OKAY to use combined oral contraceptives (COC)**
  - ACOG suggests using formulations containing 35mcg or less of ethinyl estradiol (lower estrogen best) and use lowest progestin possible (i.e. monophasic, 2nd or 3rd generation progestin)
  - Progestin-only oral contraceptive seems to be carry little risk for IS
- **Migraine with aura is a contraindication to COC use, and in itself, is an independent risk factor for IS (50% ↑ risk).**
  - **If >45 yo, 70% increased risk**

Allais G, et al, Oral contraceptives in migraine. *Expert Review in Neurotherapeutics* 2009. Accessed 4/22/2009.

ACOG: American College of Obstetrics & Gynecology

Migraine in Pregnancy

- **Frequency**
  - New onset: 10-15%
  - **Improvement: 70%**
  - Worsening: 5-10%
  - Postpartum: 30-40%
- **Cause**
  - Hormone flux in first trimester
  - Improvement related to steadily increasing estrogen (100x the normal)
  - Estrogen falls during postpartum period
- **Treatment options**:
  - Non-pharmacologic approaches (relaxation, biofeedback)
  - Acetaminophen
  - Antiemetics, fluids
  - narcotics
  - Preventive: low dose BB, TCA
- **Newer evidence**:
  - *Migraine in PG linked to significant risk for stroke and other vascular diseases (≥ 35yo)**

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Migraine and Menopause

- **Frequency**
  - *About 70% of women see improvement in migraines with the onset of menopause*
  - Unknown with perimenopause
- **Cause**
  - Hormone flux during perimenopause
  - Decreasing estrogen levels while on cyclic (alternating) replacement therapy

- **Treatment options:**
  - Reduce estrogen dose
  - Continuous dosing
  - Change estrogen preparation
    - Switch from oral to patch formulation
  - Add androgens
  - Combo of above changes

Silberstein. Menopause and migraine. Migraine and Women. London, BC Decker Inc. 2004: 122-133.

Pediatric Population

Boys > girls until puberty; girls > boys (1.5:1) after puberty

- Differential diagnosis needed (r/o meningitis, seizure disorder, HTN)
- Co-morbidities: depression, anxiety, sleep or eating disorders etc

Migraine without aura & TTH more common (2-8 hr duration)

- Autonomic symptoms = diagnosis (N, V, photo/phono sensitivity)

Many experience progressive reduction in frequency &/or severity

Treatment:

- rest, avoidance of triggers, antiemetic (if needed)
- Acetaminophen (15mg/kg); Ibuprofen (10mg/kg); Naproxen (5mg/kg)
- sumatriptan (SC or NS), zolmitriptan PO or NS for 12+ or almotriptan and rizatriptan for 6-17 yo [or DHE (IV)]

Improve nutrition, sleep, physical activity, PedMIDAS, HA calendar

- Preventive considerations: amitriptyline, valproate, topiramate

Jacobs H, Gladstein J. Pediatric headache: a clinical review. *Headache*. 2012;52(2)333-39.
Gunner KB, Smith HD, Ferguson LE. *J Pediatr Health Care* 2008;22(1):52-59.