“Best of the Rest”
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Migraine and cardiovascular disease: A population-based study


- **AMPP methodology**-population-based, self-reported data

- **Results**
  Migraine with and without aura (MA and MO) is associated with CVD and with risk factors for CVD

  $\text{MA} \rightarrow \text{CVA, MI, claudication}$
  $\text{MO} \rightarrow \text{MI, claudication}$
  $\text{MA} > \text{MO} \rightarrow \text{diabetes, HTN, high cholesterol}$

- **Future relevant study**
  Assess whether migraine treatment modifies risk
Sociodemographic and comorbidity profiles of chronic migraine and episodic migraine sufferers


- **AMPP methodology**-population-based, self-reported data
  - CM - ≥ 15 headache days per month for previous 3 months and ICDH-2 migraine criteria

- **Comorbid conditions evaluated**-psychiatric, respiratory, cardiovascular, pain and others such as obesity, diabetes, ulcers

- **Results**
  - CM → ↓ *household income*
    - ↓ *full-time employment*
    - ↑ *occupational disability*
    - ↑ *depression, anxiety, bipolar disorder*
    - ↑ *chronic pain*
    - ↑ *respiratory disorders (allergies/hay fever, asthma, sinusitis, COPD)*
    - ↑ *CVD (heart disease/angina, CVA)*
    - ↑ *CVD risk factors (diabetes, HTN, high cholesterol, obesity)*
    - ↑ *ulcers*

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**The International Burden of Migraine Study (IBMS): study design, methodology, and baseline cohort characteristics**
Rates, predictors, and consequences of remission from chronic migraine to episodic migraine (1)


- Yearly 2.5% with EM develop CM

- **AMPP methodology** – population-based, self-reported data. 3 years of longitudinal data
  CM - ≥ 15 headache days/month for previous 3 months and ICHD-2 migraine criteria

- **Results**
  Rates
  - 34% persistent CM
  - 26% remitted CM
  - 40% transitioning CM
Rates, predictors, and consequences of remission from chronic migraine to episodic migraine (2)

• **Results (cont.)**

CM respondents less likely to remit

- allodynia
- headache frequency group (25-31 days per month) compared to the low-frequency group (15-19 days per month)
- utilizing preventive medication (confounding by indication)

Non-predictors of remission

- **MIDAS**
- **BMI**
- age at onset
- depression status
- OTC/prescription overuse
- consultation with healthcare provider

Consequences of remission

- Remitted CM - **MIDAS 51→12**
- Persistent CM - **MIDAS 52→66**

• **Comments** - “CM is a relatively fluid state”
  “results do not reflect the natural disease course, but rather the clinical course”

Can we help patients with chronic migraine?

Understanding migraine: a tale of hope and frustration
Increased risk of adverse pregnancy outcomes for women with migraines: a nationwide population-based study


- **Methods**
  3 year population-based, database Taiwanese study of 4,911 women with migraine and 24,555 matched controls

- **Results**
  \( \uparrow \) LBW, preterm infants, preeclampsia, CS

- **Other Migraine Adverse Pregnancy Outcome Studies**
  \( \uparrow \) preeclampsia and gestational hypertension
  \( \uparrow \) CVA, MI, PE, HTN, diabetes

- **Triptan Migraine Adverse Pregnancy Outcome Studies**
  \( \uparrow \) LBW and preterm infants in sumatriptan users

  no evidence for sumatriptan adverse pregnancy outcomes-recommend category B

  \( \uparrow \) atonic uterus and hemorrhage in 2\textsuperscript{nd}/3\textsuperscript{rd} trimester triptan users
Risk of placental abruption in relation to migraines and headaches

Sanchez SE, Williams MA, Pacora PN, Anath CV, Qui C, Aurora SK, Sorensen TK. 

• Methods

375 Peruvian women with PA and 368 women without PA

• Background

  Shared pathophysiology
    endothelial dysfunction
    hypercoagulation
    inflammation
    platelet activation

  Shared adverse pregnancy outcomes
    intrauterine growth restriction
    preterm delivery
    preeclampsia

• Results – Odds of Placental Abruption

  2.11 – migraineurs without aura
  1.59 – migraineurs with aura
  1.61 – tension-type headache
Single-pulse transcranial magnetic stimulation for acute treatment of migraine with aura: a randomised, double-blind, parallel-group, sham controlled trial


- **Methods**
  18 USA study sites

  164 adult migraineurs with aura
  82 (sTMS), 82 (sham stimulation)

  treat up to 3 attacks ASAP and within 1h of aura onset

- **Results**
  2 hour pain free - 39% sTMS
  22% sham

  24 hour pain free - 29% sTMS
  16% sham

  48 hour pain free - 27% sTMS
  13% sham

  No serious AEs – Tolerability similar to sham group

**Single-pulse transcranial magnetic stimulation: a new way to treat migraine attacks with aura**


**Transcranial magnetic stimulation: a safety review**

Five-year outcome of surgical treatment of migraine headaches (1)


- Methods

125 migraine patients evaluated for trigger site identification
100 treated – botulinium toxin in up to 3 of 4 trigger sites
25 controls – saline and after 1 year could undergo surgery

Surgery

- **trigger site I** - frontal area (decompress supraorbital and supratrochlear nerves)
- **trigger site II** - temporal area (avulsion of small portion of zygomaticotemporal branch of trigeminal nerve)
- **trigger site III** - intranasal area (septoplasty and turbinectomy)
- **trigger site IV** - occipital area (decompress greater occipital nerve)

- Results

91 underwent surgery (successful detection and confirmation of trigger sites)
69 completed the five year study protocol
6 (8.7%) had 1 trigger site surgery
15 (21.7%) had 2 trigger site surgeries
30 (43.5%) had 3 trigger site surgeries
18 (26.1%) had 4 trigger site surgeries
Five-year outcome of surgical treatment of migraine headaches (2)

Results (cont.)
88% had benefit (at least 50% reduction in frequency, intensity or duration of migraines)
29% had elimination of migraines

Adverse events – occasional itching, hair thinning, skin hyper- and hyposensitivity, mild occipital stiffness or weakness

Concerns
What criteria other than migraine diagnosis and trigger site identification warrants surgery?
Case Western Reserve University – need prospective, randomized, controlled trials without Case Western affiliation

Migraine Surgery Program

Massachusetts General Hospital’s Migraine Surgery Program performs innovative surgical procedures to treat migraine headaches.
Clinical and prognostic subforms of new daily-persistent headache (1)


• Methods
  Retrospective chart review - Montefiore Headache Center patients 12y
  and older (71 patients, 9/2005 through 4/2009)

  NDPH = NDPH-R = NDPH-ICHD + NDPH-mf

• Results
  56.0% NDPH-mf
  44.0% NDPH-ICHD

  76.0% persistent subform
  15.5% remitting subform
  8.5% relapsing-remitting subform

New daily-persistent headache: the switched-on headache
Clinical and prognostic subforms of new daily-persistent headache (2)

- Results (cont.)

  NDPH-mf
  ↑younger
  ↑women
  ↑depression

  NDPH-ICHD
  ↑likely to recall exact day or month of onset

  Similarities between NDPH-mf and NDPH-ICHD
  pain level, autonomic symptoms, allodynia, medication overuse, response to triptans and nerve blocks

  Prognosis similar for NDPH-mf and NDPH-ICHD

- Consideration

  NDPH-R for inclusion in ICHD-3
Abnormal pressure waves in headache sufferers with bilateral transverse sinus stenosis


• Methods

Prospective study – Institute of Neurology, Catanzaro, Italy
ninety-eight consecutive refractory patients with CM and CTTH had an MRV and 1-hour continuous lumbar CSF monitoring

• Results

forty-eight patients with BTSS
38% with ↑OP
87% with abnormal ↑CSF pressure with monitoring

50 patients without BTSS
0% with ↑OP and ↑CSF pressure with monitoring

• Consideration

MRV in refractory CM and CTTH patients, especially if overweight

Intracranial hypertension, headache and obesity: insights from magnetic resonance venography
Friedman DI. Cephalalgia. 2010;30:1415-1416.
Effectiveness of manual therapy for chronic tension-type headache: a pragmatic, randomised, clinical trial (1)


- **Methods**

  Pragmatic, general practitioner (GP), multicenter Netherlands trial comparing manual therapy (MT) to usual care (UC) (18-65y, 82 participants)

- **Results**

  8 weeks – 50% reduction of headache frequency
  - 87% of MT group
  - 27% of UC group

  26 weeks – 50% reduction of headache frequency
  - 82% of MT group
  - 41% of UC group

  No significant difference in use of medication at 8 and 26 weeks (low baseline use)
Effectiveness of manual therapy for chronic tension-type headache: a pragmatic, randomised, clinical trial (2)

• Results (cont.)
  8 weeks – HIT-6 (Δ 2.3 is clinically significant)
    - 8.9 for MT group
    - 2.4 for UC group
  26 week – HIT-6 (Δ 2.3 is clinically significant)
    - 10.6 for MT group
    - 5.5 for UC group

• Conclusion
  MT – more effective intervention for CTTH than GP UC for short and long term care of CTTH

Four methods of estimating the minimal important difference score were compared to establish a clinically significant change in Headache Impact Test
When West meets East: is it time for headache medicine to complement “convention” with alternative practices?
Taylor FR. Headache. 2011;51:1051-1054.