Headache classification and diagnosis

Vera Osipova

1st Sechenov Moscow State Medical University and Moscow Research Clinical Centre for Neuropsychiatry
Disclosures

• General secretary, *Russian Headache Research Society*
• Board member and country representative, *EHF*
• Member, *EAN Panel Headache*
• Lecturer for Pfizer, Takeda, Polpharma and Allergan
The top 5 specific causes of disability worldwide:

- low back pain: 58,245,000 YLD
- major depressive disorder: 46,139,000 YLD
- iron-deficiency anaemia: 42,731,000 YLD
- headache disorders: 25,973,000 YLD
- neck pain: 23,866,000 YLD

"The Lancet"
The golden standard of headache (H) diagnosis

The International Classification of Headache Disorders

-- 1\textsuperscript{st} edition (ICHD-1, 1988)

-- 2\textsuperscript{nd} edition (ICHD-2, 2004)

-- 3\textsuperscript{rd} edition (ICHD-3 beta, 2013)

ICHD-3 beta, 2013, IHS

Headache Classification Committee of the International Headache Society (IHS)
The International Classification of Headache Disorders, 3rd edition (beta version)

Chairman of 3 classification committees
Jes Olesen (Denmark)

www.ihs-headache.org
ICHD-3 beta (2014)

- **Part I:** The primary headaches *(no causative disorder; chapters 1-4)*

- **Part II:** The secondary (symptomatic) Hs *(due to a causative disorder: organic lesion of brain, brain vessels or in head and neck structures; chapters 5-12)*

- **Part III:** Painful cranial neuropathies and other facial pains *(chapters 13-14)*

*Appendix*
Only in 2-4% headache is a symptom of the serious lifethreatening disease

The primary headaches

1. Migraine – M
2. Tension-type headache – TTH
3. Trigeminal autonomic cephalalgias – TACs
4. Other primary headache disorders

The ICHD, 3rd edition (beta version).
Other primary headache disorders

- Cough H
- Exercise H
- H associated with sexual activity
- Thunderclap H
- Cold-stimulus H

- External-pressure H
- Stabbing headache
- Nummular headache
- Hypnic headache
- New daily persistent H (NDPH)

Paraclinical investigations are needed to exclude secondary H! MRI etc.

The secondary headaches

New H that occurs for the first time in close temporal relation to another disorder - causative disorder

Headaches attributed to:
5. trauma or injury to the head and/or neck
6. cranial or cervical vascular disorder
7. non-vascular intracranial disorder
8. a substance or its withdrawal (medication-overuse headache (MOH))
9. infection
10. disorder of homoeostasis
11. H or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structure
12. psychiatric disorder

The ICHD, 3rd edition (beta version).
Patient K., 52 y.o.
Diagnosis: Chronic M. Triptan-overuse headache
(60-70 doses of triptans/
25-27 days with triptans intake per month)
General diagnostic criteria for secondary headaches (ICHD-3 beta, 2013)

Another disorder scientifically documented to be able to cause H has been diagnosed - causative disorder

H has developed in temporal relation to the onset of the presumed causative disorder

H has significantly worsened in parallel with worsening of the presumed causative disorder

H has significantly improved in parallel with improvement of the presumed causative disorder

• H has characteristics typical for the causative disorder
• Other evidence exists of causation
Painful cranial neuropathies and other facial pains

- Trigeminal neuralgia
- Glossopharyngeal neuralgia
- Nervus intermedius (facial nerve) neuralgia
- Occipital neuralgia
- Optic neuritis
- H attributed to ischaemic ocular motor nerve palsy
- Tolosa-Hunt syndrome

- Paratrigeminal oculosympathetic (Raeder’s) syndrome
- Recurrent painful ophthalmoplegic neuropathy (former ophtalmoplegic M)
- Burning mouth syndrome (BMS)
- Persistent idiopathic facial pain (PIFP)
- Central neuropathic pain (MS, post-stroke)
Facts related to H diagnostics established and accepted in the world

• The main tool for H diagnosis is the ICHD (3 beta, 2013 the latest)
• Diagnostics of H is merely clinical
• In the majority of H pts paraclinical investigations are not essential and are performed only if secondary H is suspected

  -- Atypical clinical picture/course of primary H
  -- Emergency signs (red flags)

Alarm symptoms and signs in H patients

H course/history

- First onset ≥50 years of age
- New H type or worsening of a previous H
- Sudden change in H pattern
- Thunderclap H
- Strictly unilateral pain
- H awakening the patient

Accompanying symptoms/Objective findings

- Concomitant fever, neck stiffness, rash, papilloedema
- Focal neurological signs (other than aura)
- Confusion, loss of consciousness, seizures

Povocation

- Worsening of the pain after sneezing, coughing, clinostatic/orthostatic position

History of malignancy, HIV or active infections
Paraclinical investigations: When?


European headache federation consensus on technical investigation for primary headache disorders on behalf of EHF committee

Main principles of H diagnosis (1)

- Diagnosis according to H phenotype that the patient currently presents (or has presented within the last year)
- Primary or secondary H or both?
- Several H types – several diagnoses/codes

Examples of diagnoses:
- Migraine without aura. Episodic TTH
- Chronic TTH. Headache attributed to acute glaucoma. Chronic brain ischemia
- Chronic cluster H. Phosphodiesterase (PDE) inhibitor-induced H
- Chronic migraine. MOH (triptan related H). Panic disorder
The role of H diary

38 year old woman

- Severe
- Moderate
- Mild

19 HA days (10 HA free days/month)
19 Rx days (10 triptan days)/month
4 attacks per month

By permission of Dodick D., 2012
# Headache prevalence in the world and in the RF

<table>
<thead>
<tr>
<th></th>
<th>World prevalence (%)&lt;sup&gt;2,3&lt;/sup&gt;</th>
<th>Prevalence in the RF (%)&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>All headaches</td>
<td>60-80</td>
<td>62</td>
</tr>
<tr>
<td>Migraine</td>
<td>10 (Европа - 13,8)</td>
<td>20,8</td>
</tr>
<tr>
<td>TTH</td>
<td>30-70</td>
<td>30,8</td>
</tr>
<tr>
<td><strong>Chronic daily headache</strong></td>
<td>3-4</td>
<td><strong>10,5!</strong></td>
</tr>
<tr>
<td><strong>Chronic migraine</strong></td>
<td>1,4-2,2</td>
<td><strong>6,8</strong></td>
</tr>
<tr>
<td></td>
<td>(1,3% у женщин; 0,5% у мужчин)&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

Diagnostic mistakes leading to H chronification in Russia

Insufficient education in H diagnosis and treatment

Excessive “prescription” of paraclinical investigations with wrong interpretation

False diagnosis replacing primary H diagnoses

-- Hypertensive-hydrocephalic syndrome
-- Headache related to arterial hypertension or dyscirculatory encephalopathy
-- Posttraumatic headache
-- Cervical osteochondrosis with H syndrome

Non-adequate treatment Chronification

Association of migraine and structural brain abnormalities

3 types of abnormalities (clinically silent):

- White matter abnormalities/hyperintensities (WMAs)
- Subclinical infarct-like lesions (ILLs)
- Volumetric changes in gray matter (GM) and white matter regions

Examples of erroneous interpretation:
- Multiple sclerosis
- Vascular brain insufficiency

Adapted from M.Ashina, 2014
Migraine and structural changes in the brain
A systematic review and meta-analysis

ABSTRACT

Objective: To evaluate the association between migraine without aura (MO) and migraine with aura (MA) and 3 types of structural brain abnormalities detected by MRI: white matter abnormalities (WMAs), infarct-like lesions (ILLs), and volumetric changes in gray and white matter (GM, WM) regions.

Methods: PubMed as well as the reference lists of identified studies and reviews were used to identify potentially eligible studies through January 2013. Candidate studies were reviewed and eligible studies were abstracted. Pooled odds ratios (OR) and 95% confidence intervals (CI) were calculated for WMAs and ILLs.

Results: Six population-based and 13 clinic-based studies were identified. The studies suggested that structural brain changes, including WMAs, silent ILLs, and volumetric changes in GM and WM regions, were more common in migraineurs than in control groups. The results were strongest for MA. The meta-analysis of WMAs showed an association for MA (OR 1.68; 95% CI 1.07–2.65; \( p = 0.03 \)) but not for MO (OR 1.34; 95% CI 0.96–1.87; \( p = 0.08 \)). The association of ILLs was greater for MA (OR 1.44; 95% CI 1.02–2.03; \( p = 0.04 \)) than for MO, but no association was found for MA (\( p = 0.52 \)) and MO (\( p = 0.08 \)) compared to controls.

Conclusion: These data suggest that migraine may be a risk factor for structural changes in the brain. Additional longitudinal studies are needed to determine the differential influence of migraine without and with aura, to better characterize the effects of attack frequency, and to assess longitudinal changes in brain structure and function. Neurology® 2013;81:1–9
Identification and diagnosis of CM patients remains low

% of CM patients receiving a diagnosis of CM, TM, or CDH from any healthcare provider (including, but not limited to specialists)

2. Buse et al. IHC. 2013
“Being determines consciousness”
Preface, “A Contribution to the Critique of Political Economy”

K. Marks (1859)

“Diagnosis determines treatment”
Suur aitäh!
Main principles of H diagnosis (2)

Probable headache

Description: H missing one of the features required to fulfill all criteria for a clinical subtype and not fulfilling criteria for another headache disorder

Chronic primary headache

Description: H occurring on 15 or more days per month for more than 3 months

Persistent secondary headache

Description: H of greater than 3 months’ duration caused by a causative disorder

Example: 5.2. Persistent H attributed to traumatic injury to the head (H persists for >3 months after the injury to the head)
Ошибки лечения первичных ГБ в РФ

Купирование ГБ

Избыточно-широкое применение комбинир. анальгетиков (кодеин, метамизол Na)

Недостаточное применение триптанов и эффективных НПВП

Лек. абузус

Профилактика ГБ

Необоснованное назначение вазоактивных и ноотропных препаратов

Низкая частота назначения специфической терапии

Хронизаций ГБ

Датский центр ГБ: частота форм ГБ
(по данным обращаемости пациентов)

6% Просттравм. ГБ
4% ИВГ
11% НТН
14% Кластерная ГБ
25% ГБН
5% Другие ГБ (в т.ч. ЦГБ)
41% Мигрень
23% Абузусная ГБ (ЛИГБ)

С разрешения R.Jensen