Research Article ISSN: 2833-0382

International Journal of Family Medicine & Healthcare

HEADACHE

Dumitrache Marieta*, Magdalena Anitescu and Miruna Cioboată

"Carol davila" University of Medicine and Pharmacy Burcharest, Romania.

***Correspondence:**
Marieta Dumitrache, MD, PhD "carol davila" university of medicine and pharmacy burcharest, Romania.

Received: 03 Mar 2024; **Accepted:** 01 Apr 2024; **Published:** 10 Apr 2024

Citation: Dumitrache M, Anitescu M, Cioboată M. HEADACHE. Int J Family Med Healthcare. 2024; 3(2): 1-5.

ABSTRACT

Headache or cephalalgia can be primary - migraine, with/without aura, tension-type, cluster-type, or other primary (idiopathic) headaches, and secondary headaches of multiple etiologies. Emergency signs in headaches are: violent headache (hemorrhage meninges), convulsions in epilepsy, fever, neck pain (meningitis), neurological disorders (vertigo, paresis, diplopia). Migraine begins with aura (20%), with reversible phenomena within 60 min, with small scotoma that expands, associated with homonymous, lateral hemianopsia (or blindness), scotoma bordered by zigzag bright spots (sensory aura may present progressively transient hemiplegia, auditory hallucinations). All signs regress without sequelae. Treatment in primary headache requires elimination of risk factors: stress, fatigue, food chocolate, coffee, wine, cheese, aspartane, prophylactic treatment as needed with propanolol methysergyl, calcium channel blockers, amitriptyline.Treatment of the acute migraine episode with acetaminophen; in aura, ergotamine tartrate, sumatriptan, topiramate, metoclopramide are indicated. Secondary headache recognizes multiple causes: ocular, cerebral, postneoplazic, posttraumatic, postinfectios, in which the treatment is that of the causal condition.

Keywords

Primary headache, Secondary headache, Migraine, Tension-type headache, Ergotamine, Amitriptyline, Aura, Prodrome, Photophobia, Sensory aura.

Introduction

Headache or cephalalgia or has various characteristics, being: acute, subacute, chronic, severe, prolonged, recurrent, associated or not with neurological, inflammatory, meningo-sinusal, optical signs, depending on the triggering cause [1].

- Headache in the eye can be accompanied by:
  - Visual symptoms with loss or decrease in central or peripheral vision
  - Visual field changes
  - Photophobia in eye diseases (anterior uveitis, acute glaucoma) or in meningeal irritation (meningitis, subarachnoid haemorrhage), migraine.
- Headache accompanied by visual symptoms is present in:
  - Convergence insufficiency
  - Presbyopia
  - Uncorrected hyperopia
  - Angle closure glaucoma
  - Horton's arteritis
  - Papilledema (ICP)
  - Ophthalmoplegic migraine
- The headache of ocular cause is bilateral, non-pulsating.
- Emergency signs in headache:
  - Violent headache - meningeal hemorrhage
  - Convulsions in epilepsy
  - Fever, neck pain, headache – meningitis
  - Neurological disorders: vertigo, paresis, limb paralysis, diplopia, confusion – stroke

Classification of Headache

Primary headache

Classification of headaches (IHS – 2004) [4]

Primary headache	Migraine	– with aura (classic) – no aura – aura without headache
	Tension-type headache	– episodic, chronic
	Cluster headaches, trigeminal cephalagias	– cluster headache – paroxysmal hemicrania (PH) – Sunct syndrome
	Other primary headaches	– idiopathic headache
Secondary headache	Posttraumatic, due to ocular, vascular, postinfectious, cerebral, sinus causes postneoplasic	
Cranial neuralgias		

Secondary Headache

Pain due to ocular cause
Periocular pain – occipital neuralgia V, VII, IX, carotid dissection, postherpetic, postneoplastic neuralgia
Vascular diseases
Nonvascular intracranial conditions
Trauma: head, neck
Affections: head, neck, ears, nose, sinuses, teeth
Post-drug, toxic, metabolic headache
Psychogenic headache

Primary Headache – Clinical Features

MIGRAINE [9,8]

Migraine Aura

Migraine is a chronic, familial, disabling condition, more frequent in women 3/1 (probably under the influence of hormonal changes), with onset at puberty or in youth, which diminishes after menopause, can be accentuated by stress, food (chocolate, wine, cheese), cycle, pregnancy.

Migraine is a recurrent condition characterized by repeated attacks, consisting of headache (located in half of the skull) that increases in intensity in a few hours, accompanied by sensitivity to light, sound, changes in appetite, asthenia.

Stages of the Migraine

Prodrome with painful, discrete ache
Aura – present in 20% of migraines, it includes in the visual aura a complex of sensory phenomena reversible in less than 60 minutes, with a small scotoma that expands, sometimes accompanied by lateral homonymous hemianopsia or blindness, scotoma bordered by a bright zigzag image. Sensory aura can manifest progressively rarely, through neurological signs, auditory hallucinations, transient hemiplegia.

All Signs Regress without Sequelae

A migraine attack presents:
- Moderate to severe, repetitive, pulsating headache of variable frequency located on one side of the skull, aggravated by current physical activity
- Nausea, vomiting
- Photophobia
- Repeated attack (once a year, or every 2 weeks)
- In children - attack of shorter duration, with abdominal symptoms
- Migraine can be preceded by aura, scotomas, hallucinations, visual illusions, sensory or motor disturbances in 1/3 of patients, the remaining 2/3 being in a family context.
- Migraine could be triggered by the activation of the caudal nucleus of the Vth CN with the release of vasoactive substances.

Evolution of Migraine with Aura

Prodrome

A few hours before the migraine, rarely 1–2 days, there are changes in appetite, asthenia, sensitivity to light, sound.

Aura

Lasts less than 45 minutes and is followed by a throbbing, severe headache
Visual aura develops in minutes with:
- Small expanding scotoma;
- The scotoma is bordered by a "zigzag" image that moves peripherally temporally;
- The visual impairment is of the hemianoptic type;
- Sensory abnormalities (2–25%) positive (flashes of light, sparking, fixed, mobile), scotomas that expand peripherally with the recovery of vision from the center to the periphery, or negative;
- Focal neurological symptoms, reversible in less than 60 minutes (rare);

Attack

- Untreated, it may last 4–72 hours;
- Unilateral pain, accentuated upon physical effort, accompanied by phono-photophobia, pallor, feeling cold, rarely lacrimation, palpebral edema, nasal congestion;

Postattack – physical asthenia, fatigue that forces the patient to remain lying down until the seizure is completely over.

Idiopathic migraine. When the aura disappears, unilateral headache begins around or behind the eye.

Ophthalmoplegic migraine [7]
- Child under 10 years old;
- Paralysis of the nerves III, IV, VI (III/VI – 10/1); it regresses in days, weeks;
- Ipsilateral ophthalmoplegia with hemicrania;
- No history of migraine;
- MRI negative;
- May be suspected of aneurysm.

Migraine without aura – common

- It has no preceding symptom and can last from hours to days;
- Onset in the morning upon awakening with pulsating headache, associated or not with nausea, vomiting, anorexia, photophobia.

Migraine aura without headache (acephalalgic)

- Visual symptoms: phosphenes, transient hemianopsia, amaurosis fugax, diplopia, visual field changes;
- Associated neurological deficits;
- It must be differentiated from transient ischemic attack by family history of migraine with aura and scintillating scotoma.

Retinal migraine

- Women under 40 with migraine + family history, under treatment with oral contraceptives;
- CRAvasospasm, without headache;
- Rarely branch retinal vein occlusion

Tension-Type Headache[12]

Middle frontotemporal (diffuse) headache more severe in the evening, precipitated by stress, accompanied by asthenia, depression, sleep disorders;

Treatment

Tricyclic antidepressants - amitriptyline, vitamin B2, Mg, muscle relaxants, botulinum toxin.

The differential diagnosis of migraine/tension-type headache

	Migraine	Tension-type headache
Clinically	– unilateral pain in the temple, retroorbital	– bitemporal occipital or generalized (retroorbital) pain
Type of pain	– pulsatile	– constant pressure
Associated elements	– zigzag light – scotoma± – nausea, vomiting – photo, phonophobia	– possible decrease in visual acuity – possibly nausea – photo, phonophobia – sleep disorders (rare)
Triggering factors	– food (coffee, chocolate, aged cheese, alcohol, ice cream)	– stress
Prophylaxis	– pizotifen	– tricyclic antidepressants: amitriptyline
Curative treatment	– triptan, ergot – analgesics (occasionally)	– analgesics – alcohol can reduce symptoms

CLUSTER HEADACHES [5]

- Present in men, often triggered by alcohol, it is manifested by an intense headache located behind the eye and extended in the territory of the ophthalmic branch of the trigeminal nerve;
- The headache can be accompanied by ptosis, lacrimation, rhinorrhea, appears in episodes (days, weeks);
- May disappear for years; it reappears;
- Treatment:
  - difficult to treat
  - immediately in the attack - inhalation of methysergide maleate, subcutaneous sumatripan, dihydroergotamine
  - cortisone 10–14 days (prednisone 30 mg) single dose

Tolosa-Hunt syndrome

- Granulomatous inflammatory process at the level of the superior orbital fissure or the lateral wall of the cavernous sinus
- Hypo-/anesthesia in the forehead

Raeder paratrigeminal syndrome

- Neuralgia V_1, V_2
- Miosis/ptosis without anhidrosis
- Horner syndrome (possible)
- Produced by dilatation of the ICA with compression of the sympathetic plexus and V_1

Differential diagnosis in cluster headache/migraine

	Age	Sex	Warning signs	Ocular pain	Local temperature	Skin	Intraocular pressure
Cluster	old	M	absente	reduced	increased	local erythema	elevated
Migraine	young	F	present	hours, days	low	pallor	low

Paroxysmal Hemicrania

Headache several times a day, lasting 2–30 minutes (rarely hours); It can be resolved with Indomethacin

Idiopathic Stabbing Headache

Short localized headaches (less than 1 second – 1 minute), with a "stabbing" character

Primary Headache - Treatment

Treatment in primary headache [7,11]

- Elimination of risk factors
  - exclusion from food: chocolate, cheese, coffee, red wine, aspartane, peanuts
  - oral contraceptives (uncertain)
  - stress, physical exercises, fatigue
- Prophylactic treatment (if needed)
  - propranolol
  - cyproheptadine
  - methysergide
  - amitriptyline
  - calcium channel blockers - verapamil, MAO, phenytoin
  - avoid hypoglycemia, foods with tyramine
  - rest
  - NSAIDs

Drug Treatment of the Acute Episode in Migraine:

- Acetaminophen, aspirin
- in aura:
  - ergotamine tartrate 20 mg orally sublingually followed by 1 mg after 30 minutes as needed;
  - dihydroergotamine 1 mg i.m., repeated as needed
- late:
  - sumatriptan
  - metoclopramide
  - prochlorperazine
  - NSAIDs
  - topiramate (antiepileptic)

Treatment of migraine [2,10,11]

Medicines with proven effectiveness	Drugs with probable efficacy	Medicines of questionable effectiveness
Valproate, Sodium Divalproate – 500 mg/day Metoprolol – 100 mg/day Propranolol – 40 mg/day Topiramate	– Amitriptyline – 10–20 mg/day – Atenolol – Candesartan 8–16 mg/day -Methylsergide 2–6 mg/day	– Dihydroergotamine – 10 mg/day – Gabapentin – 1200–2400 mg/day

Treatment in major migraine attack [2,6]

Treatment	Side effects	Contraindications
Symptomatic – aspirin – metoclopramide	– digestive disorders (hemorrhages) – neuropsychic, endocrine disorders	– child - gastric ulcer – pheochromocytoma
Specific – ergotamine tartrate – adult Child > 10 years 2–10 mg/day, soil. Endonasal, injectable 2–8 mg/day	– nausea, vomiting, ergotism	– obliterative arterial disease – HTN - liver failure – infections
- almotriptan - sumatriptan Cap. 12,5–25 mg/day Inj. 50–300 mg/day s.c. endonasal	vertigo – asthenia, drowsiness – nausea, vomiting – coronary spasm – hypertension - feeling of warmth	Ischemic coronary, heart attack, hypertension, stroke - liver failure

Secondary Headache

OCULAR HEADACHE [2,3]

- refractive errors, anterior uveitis
- dry eye and other keratitis
- acute glaucoma
- orbital inflammations

PERIOCULAR PAIN

Trigeminal neuralgia

- unilateral pain frequently in the maxillary, mandibular area 95%, rarely ophthalmic – 5%
- mandatory positive causal clinical and imaging diagnosis (MRI) (exploration of the posterior fossa)
- treatment: gabapentin, pregabalin (Lirica), carbamazepine, phenytoin, valproic acid, surgical treatment if necessary

Facial pain

- Dental and sinus conditions, rarely nasopharyngeal carcinoma
- Treatment: anticonvulsants, antidepressants.

Glossopharyngeal neuralgia

- Unilateral paroxysmal pain in the tongue, larynx, ear

Occipital neuralgia

- Paroxysmal pain in the area of the occipital nerve

Carotid Dissection

- Pain localized in the face
- Horner's syndrome

Ophthalmic post herpetic neuralgia

- Burning pain, it precedes the vesicular eruption by days, is located in the V thterritory, may persist after the disappearance of the vesicles
- Treatment:
  - pregabalin, gabapentin
  - tricyclic antidepressants

Post Neoplazic Pain

- Pain of varying intensity depending on the extent of the tumor.

Headache of Cerebral Cause, Cervical Diseases **[10]**

Intracranial tumors

- Localized, diffuse headache, accentuated in the morning, of medium intensity, intermittent, lasting minutes, hours, accompanied (or not) by disturbances of consciousness, AF, vomiting;
- Papilledema and systematic changes in the visual field

Malignant hypertension

- Occipital headache
- Blurred vision
- Eye fundus changes: papillary edema, exudates, hemorrhages

Diabetic neuropathy

- Retrobulbar pain that may precede oculomotor deficit
- RD

Parasellar syndrome in:

- Pituitary adenoma, intracavernous aneurysm, nasopharyngeal carcinoma, cavernous sinus thrombosis
- Pain accompanied by ophthalmoplegia
- Sensory deficit V

Pain originating in the cervical spine

- Occipital pain, at night, associated with lacrimation, dizziness, rhinorrhea

Subarachnoid hemorrhage

- Rapid evolution with photophobia, confusion, loss of consciousness, headache aggravated by head movements

Cerebrovascular ischemic diseases

- The pain that precedes the ischemic attack is brutal, intense, + Horner's syndrome
- CT scan

Subdural hematoma

- Focal signs
- Slowly progressive neurological deficit

Meningitis, encephalitis

- Rapidly evolving migraine
- Retroorbital pain accentuated by eye movements

- CN paralysis
- Neck stiffness

Cerebral pseudotumors
- Chronic, diffuse headache
- Young, obese women - nausea, vomiting, diplopia
- Eye fundus- papillary edema

SINUS PAIN

Post-traumatic headache
- Acute headache, after cranio-cerebral trauma of variable intensity, spine damage;
- Hemicrania, vascular pain
- Tension headaches + mental disorders
- Chronic headache, variable in intensity

Post-Medication Headache
- After prolonged treatment (years) with analgesics, ergotamine derivatives
- Toxic headache after: alcohol, carbon monoxide, stopping caffeine consumption, influenza virus

Metabolic Headache after hypoxia, hypoglycemia, hypercapnia.

PSYCHOGENIC HEADACHE

Conclusion

Headache has variable characteristics and can be acute, chronic, severe, prolonged, recurrent, associated or not with neurological, ocular, inflammatory signs. Migraine, a familiar, disabling chronic condition, with or without aura, has a staged evolution (prodrome, aura, attack, post attack) and requires drug treatment of the acute symptomatic and specific episode (ergotamine tartrate, sumatriptan, topiramate). Tension-type headache is more frequent in the evening, precipitated by stress, accompanied by asthenia, depression, sleep disorders and requires treatment with amitriptyline, vitamin B2, magnesium, muscle relaxants. Secondary headache has multiple causes: ocular (refractive defects, anterior uveitis, dry eye, keratitis, acute glaucoma, orbital inflammation), periocular pain (neuralgia, trigeminal nerve), facial pain, occipital pain, brain-caused (malignant HTA intracranial tumors), diabetes, subarachnoid hemorrhage, meningoencephalitis, post-trauma, metabolic, psychogenic. Treatment of secondary headache is of the causative condition.

References

1. Miller NR, Newman NJ, Biousse V. Neuro-Ophtalmology Butterworth Heineman. 2008.
2. Dumitrache M. Tratat de oftalmologie. 2012.
3. Kanski JJ. Clinical Ophtalmology. 2007.
4. Hedache Classification Committee of the International Headache Society. Cephalalgia. 2018.
5. May A. Cluster headache. Lancet. 2005.
6. Catherine Vignal. Neuroophthalmology. Elsevier. 2016.
7. Dumitrache M. Neuroophtalmologie. Academiei 2019.
8. Liu, Volpe, Galeta. Neuroophthalmology. Diagnosis and management. Elsevier. 2019.
9. Lanteri Minet, Valade D, Geraud G, et al. Prise en charge diagnostique et therapeutique de la igraine. Revue neurologique. 2018; 169: 14-29.
10. Awar Agarwal. Manual of Neuroophtalmology. Jaypee Brother Medical. 2015.
11. Roy G Beran. Management of chronic headache. Australian Family Physician. 2014; 43: 106-110.
12. Loder E, Rizzoli P. Tension type headache. BMS. 2008.