

Core Curriculum on Headache for Neurologists

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I. Anatomy and Pathophysiology

- Head and neck, meninges, cortex, trigeminovascular system, brainstem and autonomic nervous system
 - Examination of the muscles, ligaments and other soft tissue structures of the head and neck, including tenderness of the temporal artery, tenderness of cervical structures and range of motion in the cervical area, and examination of the temporomandibular joints, to identify peripheral sources of headache pain
 - Nociception in the head and the neck
 - Concepts of allodynia in general and as it applies to the head and neck
- The pathophysiology of a migraine attack
- The neurobiology, neurochemistry, and neuropharmacology of migraine
- The pathophysiology of trigeminal autonomic cephalalgias (TACs) and tension-type headache
- The pathophysiology of persistent/chronic headache

II. Epidemiology, Environment, Disability and Genetics

- Epidemiologic aspects and impact of migraine, tension-type headache, cluster headache, and the most important secondary headache disorders
- Environmental factors (precipitating [triggers] or aggravating for primary headaches)
- Migraine genetics at its current status, including the genes and molecular aspects
- Genetic aspects of other special headache disorders (e.g. cluster headache), and secondary headache disorders (e.g. CADASIL, MELAS and other mitochondrial encephalomyopathies)
- Epidemiologic aspects, incidence, prevalence and impact of headaches in children and adolescents

III. Clinical Investigations for Headache

- How and when to order and how to interpret initial headache testing such as lumbar puncture, neuroimaging, angiography, blood work and other laboratory testing
- Understand the breadth of, and significance of, magnetic resonance (MR) scanning findings in secondary headache disorders, including magnetic resonance angiography (MRA), magnetic resonance venography (MRV), and other techniques for elucidating causes, such as in spontaneous intracranial hypotension (SIH) with headache
- Understanding and interpreting the significance of neuroimaging findings in patients with primary headache disorders, such as 'white matter lesions' in migraine

IV. Diagnosis and Classification of Headache Disorders according to the International Classification of Headache Disorders, Second Edition (ICHD-II)

- General concepts, major groups and subgroups
- Diagnostic entities and criteria
 - Migraine types, including chronic migraine
 - Tension-type headache
 - Trigeminal autonomic cephalalgias (TACs)
 - Other primary headaches, including new daily persistent headache, hypnic headache, hemicrania continua, exertional headaches, primary thunderclap headache
 - Secondary headache disorders
 - Medication overuse headache
 - Headache attributed to head and/or neck trauma; trigeminal neuralgia and other cranial neuralgias
 - Headache attributed to temporomandibular joint (TMJ) disorders
- Differential diagnoses of the above diagnostic entities
- Concepts of chronicity within the classification
 - Chronic vs episodic migraine and tension-type headache
 - Chronic vs episodic TACs
 - Chronic vs episodic secondary headaches
- Diagnostic criteria for the most common paediatric headache diagnoses and differences in presentation between children, adolescents, and adults
- To be able to use the classification to diagnose a given case of an unusual or secondary headache, including a case with multiple headache disorders*
- The role of history, examination and appropriate investigations in the diagnosis of primary and secondary headache disorders
- Warning signs (red flags) suggestive of secondary headache disorders for various clinical situations (e.g. thunderclap headache, headaches with focal neurological deficits) and how to evaluate them
- Clinical characteristics, diagnostic criteria and treatment of the following secondary headache syndromes
 - Giant cell arteritis (temporal arteritis)
 - Idiopathic intracranial hypertension (IIH) (pseudotumour cerebri)
 - Secondary and spontaneous low CSF pressure headaches
 - Meningitis and encephalitis
 - Subarachnoid haemorrhage, other bleeding syndromes, and other disorders presenting with thunderclap headache
 - Venous sinus thrombosis, arterial dissection, and other cranio-cervical vascular disorders
 - Epilepsy with (peri-)ictal headache and migralepsy
 - Tolosa-Hunt syndrome
 - Sleep disorders
 - Intracranial tumours and other clinically important non-vascular intracranial disorders
 - Headache caused by glaucoma and other eye pathology
 - Reversible cerebral vasoconstriction syndrome

V. Therapy

- Non-pharmacological and behavioural therapy
 - Trigger factor awareness and avoidance
 - Headache diaries (calendars) and their importance as part of follow-up of headache patients
 - Behavioural medicine therapies (biofeedback training, neurofeedback, relaxation techniques, visual imagery, cognitive restructuring, psychotherapy, counselling, etc.)
 - Physical techniques, such as routine exercise, physical therapy, acupuncture manipulation, etc., including evidence for efficacy
 - Natural substances, such as vitamins, minerals, herbs, and supplements (vitamin B2, magnesium, feverfew, butterbur, coenzyme Q10, melatonin, etc.), including evidence for efficacy
 - Ayurvedic therapy of headache, including evidence for efficacy
- Acute pharmacotherapy of migraine, chronic migraine, status migrainosus, tension-type headaches, trigeminal autonomic cephalalgias (TACs), and miscellaneous headaches
 - Evidence-based guidelines for prevention
 - Evidence base for use of all classes and individual drugs within a class
 - Mode of action, properties, dosages, mode of administration, drug–drug interactions, adverse events, and contraindications of preventive drugs. Therapeutic strategies such as step care and stratified care, and the importance of correct timing and dosing
 - Rescue and backup treatments when the first-line therapy is ineffective
- Limits of acute headache treatment, the risk of developing medication overuse headache, including the relative risk of various categories as causative factors
- Therapeutic options in menstrually-related migraine
- Preventive pharmacotherapy of migraine, chronic migraine, tension-type headache, TACs and miscellaneous headaches
 - Evidence-based guidelines for prevention
 - Evidence base for use of all classes and individual drugs within a class
 - Mode of action, properties, dosages, mode of administration, drug–drug interactions, adverse events and contraindications of preventive drugs
 - Preventive therapeutic strategies, such as the selection of agents in the context of comorbidities according to their effect and side-effect profile, and the necessity of concomitant withdrawal of acute care medications in the context of medication overuse headache
- Withdrawal therapy in the presence of acute headache medication overuse
 - Outpatient and inpatient options
- Therapeutic options during pregnancy and lactation
- Therapeutic options in children, adolescents, and elderly patients with primary headache disorders
- Surgical and interventional therapies (indications and limitations)
 - Trigeminal neuralgia, chronic and intractable migraine, cluster headache, other TACs

VI. Comorbidities, Course and Prognosis of Headache Disorders

- Psychosocial factors in the context of tension-type headache, migraine, trigeminal autonomic cephalalgias (TACs), as well as other primary headaches, and the secondary disorders
- The impact of abuse on headache progression and outcomes
- The natural course of primary and secondary headache disorders
- Non-psychological comorbidities
- Psychological comorbidities of migraine, tension-type headache, cluster and other primary and secondary headaches, including depression, anxiety, panic disorder, psychosis and others
- Depression and anxiety questionnaires
- Migraine as a risk factor for stroke
- Oestrogen treatment in migraineurs with and without aura

VII. Miscellaneous

- The ability to understand basic methodological issues of a clinical study, including design, power, sample size, comparison arm, blinding, etc.

References

1. Headache Classification Subcommittee of the International Headache Society. The International Classification of Headache Disorders: 2nd edition. Cephalalgia 2004;24 Suppl 1:9–160.
2. Young WB, Rosen N, Sheftell F. Square one: headache education for the medical student. Headache 2007;47:351–354.
3. Olesen J, Tfelt-Hansen P, Welch KM, Goadsby PJ, Ramadan NM. The Headaches. Lippincott Williams & Wilkins, 2005.



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