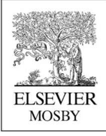
Advances in Ophthalmology and Optometry 1 (2016) 249–260



ADVANCES IN OPHTHALMOLOGY AND OPTOMETRY

New Advancements in Migraine Assessment and Treatment

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Keywords

• Migraine • Ocular migraine • Visual aura • Scintillating scotoma • Treatment • Headache

Key points

- The revised migraine criteria can help recognition of migraine headaches in the eye clinic, as patients frequently present with vision changes before or during a migraine.
- Recent studies support the pathophysiologic theory that migraine results from a dysfunction of brainstem nuclei involved in nociceptive and other sensory modulation of craniovascular afferents.
- Current management for migraine consists of a personalized treatment plan that weighs the risks and benefits that pertain to each patient.

INTRODUCTION

Migraine is the most disabling neurologic problem worldwide [1] and has substantial effects on the quality of life and on health care costs [2]. Accompanying eye or vision signs and symptoms during a migraine often lead patients to an eye examination. Vision changes associated with migraine are mostly benign,

The authors have nothing to disclose.

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2452-1760/16/$ – see front matter
http://dx.doi.org/10.1016/j.yaoo.2016.03.005 © 2016 Elsevier Inc. All rights reserved.

yet rare serious neurologic morbidity and mortality can be heralded by head pain and vision changes. It is important for ophthalmologists and optometrists to understand the causes of headache, as well as to understand how to assess and treat migraine. This knowledge will help guide the diagnostic work up and management of head pain for those presenting to an eye clinic.

There have been great advances in the understanding, diagnosis, and treatment of migraine since the late 19th century. The pathogenesis of migraine attacks has been under investigation through advanced neuroimaging, neuropeptide/hormone, and genetic research. Studies of the associated visual symptoms of migraine such as the visual phenomenon and premonitory photophobia were pursued in hopes of finding brain targets to develop new therapies. Drug trials and neuromodulation for acute and preventive migraine treatment have been explored with mixed outcomes. This article discusses the latest definitions of migraine, pathophysiologic theories, diagnostic tests, and treatment advancements in migraine.

CLASSIFICATION OF HEADACHE

Headaches can be classified as primary or secondary. In adults and children, the most common type of primary headache is migraine with and without aura. Less common headache syndromes include new persistent daily headache (NPDH), trigeminal autonomic cephalalgia (TAC), and tension-type headache (TTH) [3]. Medication overuse headache can often complicate a primary headache syndrome or be a secondary headache unassociated with a headache syndrome. Other primary headaches are listed in Box 1. Secondary headaches can result from preictal, ictal, and postictal headaches; raised intracranial pressure or dural irritation (ie, brain tumor, aqueductal stenosis, meningitis, edema from stroke, subarachoid hemorrhage, or pseudotumor cerebri syndrome); brain malformation (ie, Chiari malformation); and vascular abnormalities (ie, arteriovenous malformation). The red flag signs and symptoms of a first or isolated headache listed in Box 2 should prompt consideration of urgent imaging of any patient with headache.

CLASSIFICATION OF MIGRAINE

Migraine is defined by recurrent episodes of intense disabling headache separated by symptom-free intervals. In 2013, The International Headache Society

Box 1: Causes of primary headaches

- Migraine without aura
- Migraine with aura
- Tension-type headaches
- Trigeminal autonomic cephalalgias
- Primary stabbing headache
- Primary cough/exercise/cold-stimulus/hypnic headaches
- New daily persistent headache

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