



ETIOLOGY OF HEADACHE IN PATIENTS PRESENTING TO OPHTHALMOLOGY OPD.

Ophthalmology

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ABSTRACT

Introduction: Headache is a leading cause of disability worldwide, with a 64% one-year prevalence in India. Many patients with headaches present to Ophthalmology OPDs, though not all cases are of ophthalmologic origin. This study aimed to assess the etiology of headaches in patients visiting the Ophthalmology OPD at GMC Jammu. **Methodology:** This observational, cross-sectional study included 242 patients, aged 8 to 50, presenting with headaches between February and June 2024. Each underwent a full ophthalmologic evaluation, including visual acuity, intraocular pressure measurement, and fundus examination. **Results:** Among 242 patients, 58.26% were female and 41.73% male, with a mean age of 22.68 years. Headache associated with refractive errors (HARE) was the most common cause (69.42%), with myopia being the most frequent refractive error (63.09%). Migraine accounted for 14.46% of cases, followed by sinusitis (7.43%), raised IOP (3.71%), papilledema (1.65%), and hypertensive retinopathy (3.30%). **Conclusion:** Refractive errors, particularly myopia, were the leading cause of headaches in the Ophthalmology OPD. A comprehensive evaluation is crucial, and patients should be referred for further diagnosis when ophthalmologic causes are ruled out.

KEYWORDS

INTRODUCTION

Headache disorders are among the most common and disabling neurological conditions globally. According to the Global Burden of Disease Study (2019), headache disorders are the second leading cause of years lived with disability (YLDs), affecting individuals across various age groups, geographies, and socioeconomic statuses. Among these, primary headache disorders such as migraines, tension-type headaches, and cluster headaches are particularly prevalent. However, the true burden of headache extends beyond these primary disorders, including a wide array of secondary causes that may often be underdiagnosed in clinical settings.

In India, the one-year prevalence of headache is estimated to be around 64%, reflecting the substantial impact of this condition on public health. This prevalence encompasses both primary and secondary causes of headaches, including those of ophthalmologic origin. Headache disorders have significant implications, leading to reduced productivity, missed workdays, and a diminished quality of life. Consequently, many patients seek medical care, often believing their headache may be related to an ocular condition, which increases the likelihood of them presenting at Ophthalmology Outpatient Departments (OPDs).

A significant proportion of patients with headaches present to ophthalmology OPDs because of the widely held belief that headaches are caused by eye strain or other visual problems. However, it is important to note that headaches in these settings are not always of ophthalmologic origin. In many cases, what is believed to be an ocular issue may instead have neurological, vascular, or musculoskeletal causes. This calls for a careful and comprehensive assessment of patients presenting with headaches in ophthalmology clinics to avoid misdiagnosis and ensure proper management.

The Role Of The International Classification Of Headache Disorders (ICHD)

The International Classification of Headache Disorders (ICHD), developed by the International Headache Society, provides a structured approach to diagnosing and classifying headache types. Currently in its third edition (ICHD-3), this classification system is crucial in guiding clinicians toward accurate diagnosis and management, particularly in complex cases encountered in ophthalmology settings. The ICHD divides headaches into several categories based on etiology, including ophthalmologic causes. According to the ICHD, four primary types of headache are attributed to ophthalmological causes:

1. Headache attributed to acute angle-closure glaucoma: Acute

angle-closure glaucoma is a medical emergency in which a sudden rise in intraocular pressure can cause a severe headache, eye pain, blurred vision, and nausea. Without timely treatment, it may result in permanent vision loss. Identifying this condition in an ophthalmology OPD is critical, as urgent intervention can alleviate both headache and ocular symptoms.

2. Trochlear headache: This is a rare headache type that occurs due to inflammation of the superior oblique muscle tendon, also known as trochleitis. Patients typically experience sharp, localized pain in the upper medial orbit. Misdiagnosis is common, as trochlear headache can mimic other orbital conditions.

3. Headache Attributed To Ocular Inflammatory Disorders: Conditions like scleritis, uveitis, and keratitis are known to cause significant ocular discomfort and headache. These inflammatory disorders must be identified promptly in ophthalmology OPDs, as timely treatment is key to resolving both the underlying condition and the associated headache.

4. Headache Attributed To Refractive Errors: Uncorrected or poorly corrected refractive errors, such as myopia, hyperopia, astigmatism, and presbyopia, can lead to eye strain and headaches, often described as dull, aching pain. Addressing these refractive errors with appropriate corrective measures typically resolves the headache.

Broader Considerations For Headache Etiology

While these ophthalmologic causes are well-documented, it is crucial to recognize that many headaches presenting in ophthalmology clinics may have non-ophthalmologic origins. Several systemic conditions are commonly mistaken for ophthalmologic headaches, including:

Tension-type headaches: The most prevalent form of primary headache, tension-type headaches often arise from muscle tension in the neck and shoulders, leading to pain that can be confused with ocular discomfort. These headaches are bilateral and pressing in nature, and their association with stress and poor posture often leads patients to attribute them to vision-related issues.

Migraines: Migraines, a common reason for consultation in ophthalmology clinics, are characterized by unilateral, throbbing pain, often accompanied by visual disturbances (aura), photophobia, and nausea. Migraines are sometimes misdiagnosed as ophthalmologic due to the presence of aura or visual symptoms.

Cervicogenic Headaches: These headaches originate from disorders of the cervical spine and are often referred to the periorbital region. They are frequently confused with headaches of ocular origin due to

the overlapping pain patterns .

The Importance Of Thorough Evaluation

The evaluation of patients presenting with headache to ophthalmology OPDs must be comprehensive and systematic, as it is critical to differentiate between ophthalmologic and non-ophthalmologic causes. Misdiagnosis may lead to inappropriate treatment, delayed intervention, or overlooked serious conditions. For example, overlooking acute angle-closure glaucoma could result in irreversible vision loss, while failing to recognize migraines or tension-type headaches could result in chronic, untreated pain .

In addition to primary care physicians and neurologists, ophthalmologists play a critical role in the evaluation of headache, often being the first point of contact for patients who associate their symptoms with visual problems. This places a special responsibility on ophthalmologists to ensure a thorough diagnostic process that includes both ocular and systemic evaluations.

Study Objective

Given the complexity and high prevalence of headache disorders, our study seeks to examine the etiology of headaches in patients presenting to ophthalmology OPDs. We aim to provide a clearer understanding of the relative contributions of ophthalmologic versus non-ophthalmologic causes of headache in these settings. This research will contribute to improved diagnostic protocols and better-targeted treatment strategies, ultimately enhancing patient outcomes in ophthalmology clinics.

METHODOLOGY

This was an observational, descriptive, cross-sectional and prospective Study.

The study was conducted in GMC Jammu over a period of 5-months from February-2024 to June-2024.

It included 242 patients who presented with complaints of headache to ophthalmology OPD during the above mentioned time period. Each patient received thorough ophthalmological evaluation including visual acuity assessment, IOP measurement and fundus examination. This was followed by relevant descriptive analysis.

Inclusion Criteria

Patients aged 8 yrs to 50 yrs presenting to Ophthalmology O.P.D with complaints of Headache from Feb-2024 to June -2024.

Exclusion Criteria

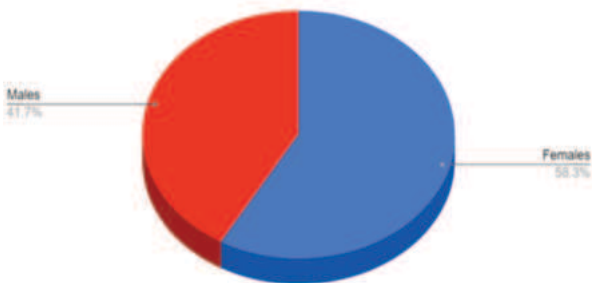
Age group < 8 Yrs. and Age group > 50 Yrs.

Patients with Prior Head Trauma, Diagnosed Psychiatric illness, Migraine, Epilepsy, Non-verbal children.

RESULTS

We included 242 patients with a mean age of 22.68 Yrs. 58.26% were females (141) and 41.73% were males(101). After performing thorough Ophthalmological evaluation, Headache associated with refractive errors (HARE) was found to be the most common cause of headache in 69.42% patients. This was followed by Migraine as the second most common cause of headache seen in 14.46% patients. Other secondary causes of headache included sinusitis seen in 7.43%, raised Intraocular pressure was seen in 3.71%, papilloedema was seen in 1.65% and hypertension with grade II hypertensive changes in fundus was seen in 3.30%patients.

No. of Patients and Percentage (%)



Among patients diagnosed with refractive errors, the most common refractive error was myopia seen in 63.09% patients, followed by hypermetropia in 25.59% and astigmatism seen in 11.30% patients.

Table 1.1 :- Sex Distribution Of Patients

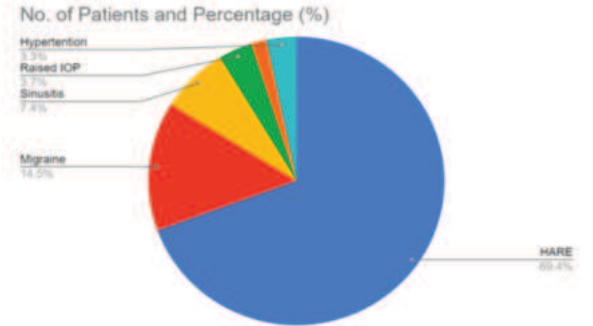
Sex	No. of Patients	Percentage (%)
Females	141	58.26
Males	101	41.73

Table 1.2:- Age-wise Distribution Of Patients

Age Group (Yrs)	No. of Patients	Percentage (%)
8-18	82	33.88
19-28	67	27.68
29-38	51	21.07
39-48	35	14.46
More than 48	7	2.89

Table 1.3 :- Causes Of Headache

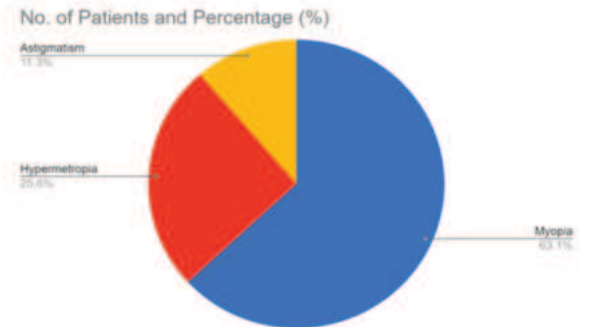
Causes of Headache	No. of Patients	Percentage (%)
Headache associated with refractive errors (HARE)	168	69.42
Migraine	35	14.46
Sinusitis	18	7.43
Raised IOP	9	3.71
Papilloedema	4	1.65
Hypertension with fundus changes	8	3.30



Pie Chart Representation of Table 1.3

Table 1.4 :- Causes Among HARE

Causes Among HARE	No. of Patients	Percentage (%)
Myopia	106	63.09
Hypermetropia	43	25.59
Astigmatism	19	11.30



Pie Chart Representation of Table 1.4

CONCLUSION

We found in our study that headache associated with refractive errors was the most common cause of headache among patients presenting to our Ophthalmology O.P.D in GMC Jammu. Among the Patients with refractive errors, myopia was most common.

People with headaches often make their first encounter with an Ophthalmologist. Therefore we must ensure that these patients receive a complete evaluation including but not limited to ophthalmological examination. Moreover after thorough ophthalmological examination

and ruling out any ophthalmologic origin of headache ,these patients should be referred to physicians for further evaluation and diagnosis. Also early diagnosis and treatment should be given as headache is the leading cause of disability worldwide.

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