Original Article

Frequency of primary headache disorders; a retrospective study

Sarwat Iqbal, Mujeeb-ur-Rehman Abid Butt, Rana Adil, Arshad-Ullah Afridi, Uzma Sarwar

Department of Medicine, Shalamar Hospital, Lahore, Pakistan

Objective: To determine frequency of primary headache disorders in patients presenting at a tertiary healthcare setup.

Methodology: This descriptive retrospective study was carried out at Department of Medicine, Shalamar Hospital, Lahore from January 2019 to December 2020. A total of 400 patients presenting to medical and neurology outpatient departments with complain of recurrent/persistent headaches were included through digital outpatient record. Data of each patient was filled in a questionnaire Performa. Headache disorders were classified according to ICHD-3 beta criteria.

Results: Out of 400 subjects, the frequency of migraine and tension type headache was 46% and 24%, respectively. Chronic daily headache was present in 12% and 18% were diagnosed as other headaches. Only one case of cluster headache was seen. There was female predominance being 67% of total subjects.

Conclusion: This study revealed a high frequency of migraine as compared to tension type headache, which is more common in west.

Keywords: Primary headache disorders, migraine, tension type headache, ICHD-3 beta.

INTRODUCTION

Headache is a very common symptom of clinical importance and often under-diagnosed and under-treated entity.[1] Headache can result in significant morbidity in terms of lack of efficiency, absenteeism from workplace and mood instability.[2] Life time prevalence of headache is found to be 96% with 46 – 47% of adults reporting with recurrent headaches fulfilling criteria of primary headache disorders.[3-5] In 1988,International Headache Society introduced a classification for various headache disorders and after modification ICHD-3 beta version is currently being used for diagnosis.Based on this, three major classes of headache are primary headache disorders, secondary headache disorders and painful cranial neuropathies, facial pains and other headaches.[4,6,7]

Among primary headache disorders, migraine and tension type headache (TTH) are most disorders accounting for a prevalence of approximately 10 – 11% and 30 – 78%, respectively. The individual percentages may slightly vary geographically.[8-10] Cluster headache is far less prevalent comprising 1 case in 500 individuals.[11] Headaches are ranked 10th most disabling disorders by WHO resulting in significant financial and economic burden worldwide.[12,13] The aim of this study was to determine frequency of primary headache disorders in patients presenting at our institution.

METHODOLOGY

The study was carried out at Shalamar Institute of Health Sciences. Retrospective data of approximately 2yrs was taken after approval of the study by institutional review board. A total of 400 patients aged 18 – 65 yrs presenting with recurrent ≥ 2 episodes in 6months or persistent headache ≥ 15 days/month were included in the study.

Primary headache was defined as headache with no plausible cause of it after excluding headaches with secondary causes. Sample size was calculated using a population prevalence of 46%, margin of error was 5% with 95% confidence limit. Patients' data was accessed from medical and neurology outpatient digital record with simple convenient sampling. Each patient's data was entered in a pre-designed questionnaire proforma, attached as annex. Headache disorder was categorized according to ICHD-3 beta criteria.

Statistical Analysis: The data were analyzed using SPSS version 20. Frequencies were calculated for different types of headaches and gender distribution. Mean ± standard deviation was calculated for age of onset.

RESULTS

Out of 400 patients, female were 268 (67%) and males were 132 (33%). Mean age was 36years, (range 18 – 62). Mean BMI was 27.5. Migraine and TTH were found in 46% and 24% of subjects respectively. Chronic daily headache (CDH) was diagnosed in 12% of cases (Table 1).

There was only one case of cluster headache and 18% individuals were classified as other headaches. Gender distribution was clearly dominated by female patients. However, headache disorders were widely distributed among different age groups with no predilection of only younger individuals.

Table 1: Primary headache subtypes.

Type	Frequency	Percent
Migraine	184	46
Cluster headache	1	0.25
TTH	96	24
CDH	48	12
Nonspecific	71	18
Total	400	100.0

DISCUSSION

It has also been observed that a considerable number of patients spend several years with wrong label of a headache disorder before getting the right one.[14] Pathophysiology of primary headache disorders is multifactorial. A number of endogenous systems or networks, mainly originating from the brainstem, hypothalamus and cerebral cortex, are influenced by behavioral, cognitive and emotional factors that are relevant to the survival of the individual. Headache arises as a result of activation of pain sensitive intracranial structures that include arteries of circle of Willis, meninges, dural sinuses and dura matter near blood vessels[15] Under pathological conditions, facilitatory or inhibitory signals from afferent pathways to trigeminal nerve mediate initiation and maintenance of painful states.[16,17] This is the reason the trigemino-vascular system explains the somatic representation and distribution of primary headaches.[18,19]

A national survey from Pakistan in 2013 including 4223 participants, validation of questionnaire-based diagnosis by trained neurologist was done in 180 subjects, the questionnaire diagnosed 47 (26.1%) cases of migraine, 36 (20.0%) of TTH, 42 (23.3%) of probable medication overuse headache (MOH) and 22 (12.2%) of other headaches on ≥ 15 days/month. The neurologist diagnosed 38 (21.1%) cases of migraine, 42 (23.3%) of TTH, 7 (3.9%) of probable MOH and 58 (32.2%) of other headache on ≥ 15 days/month, with 2 (1.1%) cases undetermined (mixed headaches).[20]

Our study showed females being affected more often as compared to males. The overall percentage of migraine was 46% and TTH was 24%. 12% of cases were classified as chronic daily headaches more of either migraine or tension type. Percentage of migraine in Pakistani population is far more as compare to the west where TTH is more common.[1,12]

Genetic predisposition has been best linked to migraine and less well with cluster type headache. 1st degree relatives of migraine without aura patient are twice as likely to get this clinical condition whereas those with aura are four times predisposed for developing similar headache.[6,21]

Another important area that we tried to highlight was frequency of analgesics intake. Medication overuse headache is an entity that is associated with habitual use of analgesics to abort acute episodes of headache for > 15 days/month. Drugs commonly used in this aspect are opioids, triptans and NSAIDs. The tendency of developing MOH is maximum for opioids and least with NSAIDs.[22] The population prevalence of CDH in individuals over using analgesics is 1.4%.[6,23] This study revealed no case of MOH. 59% of patients reported using acetaminophen for aborting acute attack and 20% used combination of acetaminophen and non-steroidal analgesics. This could also be explained by either cost effectiveness or ease of availability as compared to opioids and triptans.

Although it was a small study with limited sample size, it provided an insight into the spectrum of prevalent headache disorders in this local population. This study may prove valuable in bridging the knowledge gap with respect to primary headaches and revealed a higher percentage of migraine as compared to TTH. Further studies are required to probe possible causes of this increasing trend. It has highlighted that headache is a clinical condition of significant importance that needs accuracy in diagnosis in order to initiate appropriate treatment.

CONCLUSION

Primary headaches constitute a significant health problem. This study revealed a higher frequency of migraine as compared to tension type headache which is more common in west.

Author Contributions:
Conception and design: Sarwat Iqbal.
Collection and assembly of data: Abid Butt, Rana Adil, Arshad Ullah Afridi.
Analysis and interpretation of data: Sarwat Iqbal, Uzma Sarwar.
Drafting of the article: Sarwat Iqbal.
Critical revision of article for important intellectual content: Abid Butt.
Statistical expertise: Sarwat Iqbal, Uzma Sarwar.
Final approval and guarantor of the article: Abid Butt.
Corresponding author email: Sarwat Iqbal : saiqef@gmail.com
Conflict of Interest: None declared.
Rec. Date: Feb 26, 2021 Revision Rec. Date: Sep 27, 2021 Accept Date: October 25, 2021.

REFERENCES

1. Rizzoli P, Mullally WJ. Headache. Am J Med. 2018; 131: 17-24.
2. Straube A, Andreou A. Primary headaches during lifespan. J Headache Pain, 2019; 20: 35-7.
3. Oshinaike O, Ojo O, Okubadejo N, Ojelabi O, Dada A. Primary headache disorders at a tertiary health facility in Lagos, Nigeria: prevalence and consultation patterns. Biomed Res Int. 2014; 2014: 782915.
4. Lebedeva ER, Kobzeva NR, Gilev D, Olesen J. Prevalence of primary headache disorders diagnosed according to ICHD-3 beta in three different social groups. Cephalalgia, 2016; 36: 579-88.
5. Ayzenberg I, Katsarava Z, Sborowski A, Chernysh M, Osipova V, Tabeeva G, et al. The prevalence of primary headache disorders in Russia: a countrywide survey. Cephalalgia, 2012; 32: 373-81.
6. Bradley's Neurology in Clinical Practice, 2-Volume Set - 7th Edition [Internet]. [Cited 2021 Apr 7]. Available from: https://www.elsevier.com/books/bradleys-neurology-in-clinical-practice-2-volume-set/daroff/978-0-323-28783-8.
7. Taylor FR. Diagnosis and classification of headache. Prim Care, 2004; 31: 243-59.
8. Murtaza M, Kisat M, Daniel H, Sonawalla AB. Classification and clinical features of headache disorders in Pakistan: a retrospective review of clinical data. PLoS One, 2009; 4: e5827.
9. Krogh AB, Larsson B, Linde M. Prevalence and disability of headache among Norwegian adolescents: A cross-sectional school-based study. Cephalalgia, 2015; 35: 1181-91.
10. Al-Hashel JY, Ahmed SF, Alroughani R. Prevalence of Primary Headache Disorders in Kuwait. Neuroepidemiology, 2017; 48: 138-46.
11. Schwaiger J, Kiechl S, Seppi K, Sawires M, Stockner H, Erlacher T, et al. Prevalence of primary headaches and cranial neuralgias in men and women aged 55-94 years (Bruneck Study). Cephalalgia, 2009; 29: 179-87.
12. Stovner LJ, Hagen K, Jensen R, Katsarava Z, Lipton R, Scher A, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. Cephalalgia, 2007; 27: 193-210.
13. Peres MFP, Queiroz LP, Rocha-Filho PS, Sarmento EM, Katsarava Z, Steiner TJ. Migraine: a major debilitating chronic non-communicable disease in Brazil, evidence from two national surveys. J Headache Pain, 2019; 20: 85-9.
14. Benoliel R, Eliav E. Primary headache disorders. Dent Clin North Am. 2013; 57: 513-39.
15. Goadsby PJ, Holland PR, Martins-Oliveira M, Hoffmann J, Schankin C, Akerman S. Pathophysiology of migraine: A disorder of sensory processing. Physiol Rev. 2017; 97: 553-62.
16. May A, Burstein R. Hypothalamic regulation of headache and migraine. Cephalalgia, 2019; 39: 1710-19.
17. Jänig W. Relationship between pain and autonomic phenomena in headache and other pain conditions. Cephalalgia, 2003; 23: 43-8.
18. Bourgeais-Rambur L, Beynac L, Villanueva L. Mécanismes de régulation cérébrale impliqués dans la crise migraineuse [Brain network dysfunctions as substrates of primary headaches]. Biol Aujourdhui, 2019; 213: 43-49.
19. Cohen AS, Goadsby PJ. Functional neuroimaging of primary headache disorders. Expert Rev Neurother. 2006; 6: 1159-71.
20. Herekar AD, Herekar AA, Ahmad A, Uqaili UL, Ahmed B, Effendi J, et al. The burden of headache disorders in Pakistan: methodology of a population-based nationwide study, and questionnaire validation. J Headache Pain, 2013 Aug. 22; 14 (1): 73-7.
21. Berk T, Ashina S, Martin V, Newman L, Vij B. Diagnosis and Treatment of Primary Headache Disorders in Older Adults. J Am Geriatr Soc. 2018; 66: 2408-16.
22. Diener HC, Limmroth V. Medication-overuse headache: a worldwide problem. Lancet Neurol. 2004; 3: 475-83.
23. Goadsby PJ. Primary headache disorders: Five new things. Neurol Clin Pract. 2019; 9: 233-240.