



Assessment of Drug Utilization and Quality of Life in Patients with Migraine Headache - A Cross Sectional Study

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ABSTRACT

Migraine is a common and often debilitating neurologic condition characterized by primary recurrent headaches lasting 4 to 72h with at least two of the following pain characteristics: unilateral, pulsating, moderate or severe intensity, or aggravated by routine physical activity. This study aimed to assess the impact of migraine on quality of life of patients suffering from migraine. Study was carried out in Urban areas of North Karnataka by using self-administered or interviewer administered questionnaire on 157 study participants. Data on family history of migraine, frequency of migraine episodes per month-morbid conditions, pattern of duration of migraine were collected. Data from the questionnaire was analyzed by using appropriate statistical tools. The present study showed that the prevalence of migraine was higher in males (68.8%) than females (31.2%). Migraine was found to be more prevalent between age group 18-28 years. Majority of the participants in the study were teenagers. Photophobia (31.2%) and blurred vision (22.9%) were the most common side effects associated with migraine among the participants. Almost 55.4% of the participants reported that sun exposure was the main trigger of migraine. Majority of the participants were prescribed with Naproxen and Naproxen and Domperidone combination. It was observed that migraine affected predominantly the most productive age group of the society. NSAIDs were the most frequently prescribed anti-migraine drug. Quality of life of patients with migraine was suboptimal.

Keywords: Drugs, Headache, Migraine, NSAIDs, Quality of Life

INTRODUCTION

Migraine is a neurological disease characterized by pain which is always described as severe unusually associated with nausea and sensitivity to light and voices. Migraine attacks can last for hours to days with severe pain which can affect the daily activities. The quality of life among patients with migraine was generally moderate. Males demonstrate better quality of life than females. Furthermore patients who had less frequent migraine attacks exhibited better quality of life than the others. But working patients were likely to demonstrate poor quality of life. There still exist large gap in the knowledge about the impact of migraine on quality of life of the affected individuals.¹

Economic evaluations of migraine treatments require a model that tracks MMD (monthly migraine days) frequency and captures the impact of change in MMD frequency as a result of treatment on resource utilization and QALYs. It is currently uncertain whether the ongoing use of new migraine treatments will improve HRQOL (Health Related Quality of Life) over time. The design of Rimegepant long term safety study BHV 3000-201, offers the opportunity to evaluate this issue.²

Medication overuse by people with headaches can lead to various problems including medication overuse headache. Some individuals with migraine have a lower headache frequency but achieve this level as a result of high use of acute medication. There is still a need to understand the burden of MO (migraine without aura) in individuals with differing headache frequencies and much to learn about both the economic and humanistic cost of MO in migraine.³

The current standard of care for the acute treatment of migraine attacks is the drug class known as triptans. However, it is estimated that 25%-40% of the patients with migraine have sub optimal responds to triptans. Lasmiditan formerly known as COL-144 exerts its therapeutic effects in the acute treatment of migraine by decreasing neuropeptide release and inhibiting pain pathways including those in the trigeminal nerve and ganglion. The open-label long term safety study of Lasmiditan in the acute treatment of migraine (gladiator) was designed to address the need for data on chronic intermittent exposure to Lasmiditan.⁴



In addition to the substantial impairment during attacks (ictal burden), migraine also causes impairment between attacks (interictal burden). When compared with individuals without migraine, migraineurs report reduced health related quality of life even during pain-free periods. Interictal burden can include anxiety, anticipation of the next attack, and avoidance of activities due to fear of migraine or headache. This can lead to impairment in work or school, impairment in family and social life, difficulty making plans or commitments, and emotional/affective and cognitive distress.⁵

Migraine headaches are commonly treated acutely. Acute treatments range from the use of non-specific acute migraine medications including simple analgesics such as non-steroidal anti-inflammatory drugs (NSAIDs) or acetaminophen for mild to moderate attacks to migraine specific acute treatments including triptans and ergot derivatives for moderate to severe attacks. Opioids are reserved for patients with moderate to severe pain who do not respond to, or cannot tolerate nonopioid medications. Based on published treatment guideline roughly 40% of the migraine population would also benefit from preventive therapy. However, only approximately 12% of people with migraine receive any preventive therapy due in part to limited efficacy and significant tolerability and safety issues with available preventive therapies, indicating a large unmet medical need for migraine prophylaxis. The aim of prophylactic treatments for migraine, such as antiepileptics, antidepressants, and antihypertensive, is not only to reduce migraine frequency, but also reduce disability and restore the ability to function.⁶

It appears that migraine is a complex disorder with a synergistic relationship between peripheral and central nervous systems, which together are involved in migraine generation. Whilst it may be the case that peripheral and central mechanisms co-exist, the balance between these drivers may differ between individual migraineurs. Furthermore, it is likely that the contribution of central and peripheral mechanisms to migraine generation alter when an individual transitions from episodic to chronic migraine or that they simply change over time. It is likely that significant similarities exist between the mechanisms responsible for chronic migraine, episodic migraine and other chronic orofacial pain conditions. Structural and functional brain changes in pain related regions atypical pain processing, cortical hyperexcitability. Central sensitization and neurogenic inflammation may all play a role in chronic migraine transformation, initiation and maintenance.⁷

Very few studies evaluating the effect of medications on quality of life in migraine patients have been done India. Hence this study was planned with objectives of assessing impact of migraine on quality of life of patients suffering from migraine and analyzing the effects of anti-migraine medication on health-related quality of life. In this context Department of Pharmacy Practice conducted the study entitled "Assessment of Drug Utilization and Quality of Life in Patients with Migraine Headache-A Cross-Sectional Study.

MATERIALS AND METHODS

A descriptive, cross-sectional study was conducted for a period of three months from August 2023 to October 2023 in Urban areas of North Karnataka. The sample size was 157. Data was collected by using questionnaire followed by interviewing with the participants. The patients who were aged above 18 years and capable of giving information on medicine use within the family were included in the study. Convenient sampling method was employed for data collection. Data were collected from hospital premises and public places. Participants who were refused to give information were excluded from the study. The study was approved by the committee by issuing Ethical Clearance Certificate. The data collected were entered into Microsoft excel spreadsheet. Data were collected checked for completeness and consistency. Descriptive Statistics like percentage and means were used to summarize the characteristics of data.

RESULTS

A total of 157 patients who met the inclusion criteria were recruited into the study by calculating the sample size. The present study showed that the prevalence of migraine was higher in males (68.8%) than females (31.2%). Out of 157 participants who were willing to participate in the study most of them were in the age group of 18-28 i.e. 52.2 % of the total participants followed by 31.2% of the participants in the age group 29-39. This was depicted in **Fig 1**.

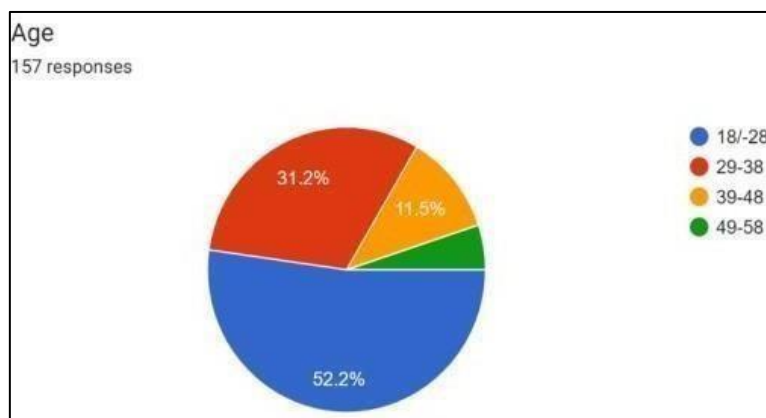


Fig 1: Age Distribution (n=157)

It was found that photophobia (31.2%) and blurred vision (22.9%) were the most common side effects associated with migraine among the participants. Migraine was the most common cause of light sensitivity. This was depicted in **Fig 2**.

Associated symptoms in migraineurs in the study

157 responses

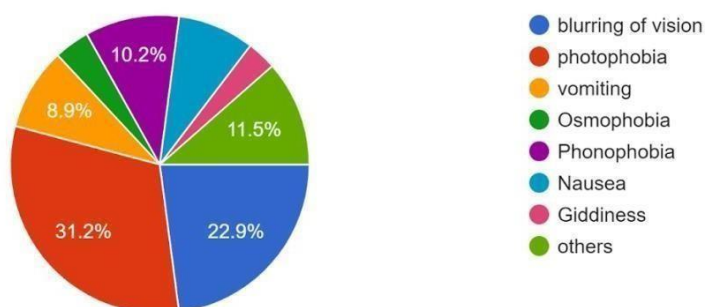


Fig 2: Symptoms Associated with Migraine in the Study Participants (n=157)

Out of 157 participants it was found that 46.5% of the participants have experienced severe pain during attacks, followed by 33.1% participants were having moderate pain and 15.9% were having mild pain. This was depicted in **Fig 3**.

intensity of migraine

157 responses

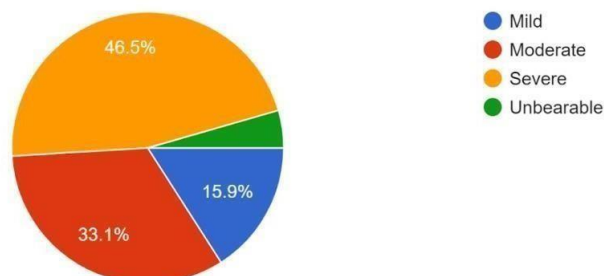


Fig 3: Intensity of Migraine among Study Participants (n=157)



We observed that 55.4% of the participants reported that sun exposure was the main trigger of migraine. This was depicted in **Table 1**. The sun emits heat and that heat can in turn lead to dehydration. Dehydration causes the blood vessels to constrict which can lead to migraine.

Table 1: Triggers Associated with Migraine among Study Participants (n=157)

Sl.no	Triggers of migraine	No. of participants	Percentage (%)
1	Sun exposure	87	55.4
2	Sleep deprivation	13	8.3
3	Odor	6	3.8
4	Menstruation	19	12.1
5	Hunger	14	8.9
6	Inhalers	4	2.5
7	Others	14	8.9
Total		433	100

In the present study majority of the participants showed a duration of headache lasting less than 60 minutes (63.7%). This was depicted in **Table 2**. Concerning the intensity majority of the patients were found to have severe type of pain (46.5%) and moderate type of pain (33.1%). Additionally, majority of the participants are having non pulsatile type of headache. Notably, nearly half of the patients in our study had unilateral (28.7%) and bilateral side shifting (28.7%) type of headache.

Table 2: Pattern and Duration of Migraine (n=157)

Sl.no	Pattern and Duration of Migraine	No. of participants	Percentage (%)
1	<60 min	100	63.7
2	1-6 hr	46	29.3
3	6-12 hr	6	3.8
4	12-24 hr	3	1.9
5	More than 24hr	2	1.3

Majority of the participants are prescribed with Paracetamol, Naproxen and Naproxen + Domperidone combination. This was depicted in **table 3**. Naproxen and Paracetamol were used to relieve mild to moderate pain associated with migraine headache. Naproxen + Domperidone is used to relieve headache and nausea and vomiting associated with headache.

Table 3: Drugs used for Migraine (n=157)

Sl.no	Drugs used for Migraine	No. of Participants	Percentage (%)
1	Propranolol	28	17.8
2	Naproxen + domperidone	28	17.8
3	Sumatriptan + domperidone	15	9.6
4	Amitriptyline	24	15.3
5	Propranolol + Flunarizine	8	5.1
6	Naproxen	36	22.9
7	Aceclofenac + Paracetamol	24	15.3

DISCUSSION

The present study showed that the prevalence of migraine was higher in males (68.8%) than females (31.2%) Migraine was found to be more prevalent between age group 18-28 years which was consistent with the study done by **Hadia et.al.**⁵ 49.9% of the study participants are single and 48.4% are married.

Symptoms associated with migraine in the study participants was found to be Photophobia(31.2%) and blurring vision(22.9%). It was found from the study that 55.4% of the participants reported that sun exposure was the main trigger of migraine which was consistent with the study done by **Hadia et.al.**⁵ In the present study majority of the participants showed a duration of headache lasting less than 60 minute(63.7%). Concerning the intensity majority of the patients were found to have severe type of pain (46.5%)



and moderate type of pain (33.1%). Additionally majority of the participants are having non pulsatile type of headache. Notably nearly half of the patients in our study had unilateral (28.7%) and bilateral side shifting (28.7%) type of headache.

55.4% of the participants were having discomforting pain during migraine attacks. Majority of the participants were prescribed with paracetamol, naproxen and naproxen + domperidone combination. Naproxen and Paracetamol are used to relieve mild to moderate pain associated with migraine headache. Naproxen + Domperidone is used to relieve headache and nausea and vomiting associated with headache.

CONCLUSION

It was evident from the present study that migraine affected predominantly the most productive age group of the society and migraine is more common in female patients. We found that NSAIDs were the most frequently prescribed anti-migraine drug. Migraine control may be achieved by the effective pharmaco-therapeutic approach.

REFERENCES

1. Mannix S, Skalicky A, Buse CD, Desai P, Sapra S, Orimeier B, Widnell K, Hareendran A. Measuring the impact of migraine for evaluating outcomes of preventive treatments for migraine headaches. *BMC*. 2016;14:143.
2. Dissing SA, Lee YX, Osterberg O, Helmich HL. Burden of medication overuse in migraine: A cross-sectional population-based study in five European countries using the 2020 National Health and Wellness Survey. *Neurol Ther*: 2023.1;1-13.
3. Dipiro JT, Talvert LR, Yee CG, Matzke RG, WeLb GB, Posey ML. *Pharmacotherapy A Pathophysiologic Approach*. 7th ed. New York: McGraw Hill; 2008.
4. Munvogoven JT, Henderson AL, Meylakh N. Chronic migraine pathophysiology and treatment: A review of current perspective. *front. pain.res* 2021(2):705276.
5. Hadia R, Kapadi V, Naidu S, Prakash S, Chandrakar V, Rajput SH. A cross-sectional observational study to assess clinical characteristics, prescription pattern and health related quality of life in migraine patients at tertiary care teaching hospital. *J Young Pharm* 2022;14(3):314-321.
6. Oswald CJ, Schuster MN, Lasmidital for the treatment of acute migraine: A review and potential role in clinical practice. *J Pain Res*. 2018: 11;221-27.
7. Elrington G. Migraine: Diagnosis and Management. *J Neural Neuro surg Psychiatry*. 2002;72(3):5-1.

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Conflict of Interest Statement: All authors have nothing else to disclose.

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