Ayesha Mahek Raja et al /J. Pharm. Sci. & Res. Vol. 15(6), 2023, 1142-1145

ISSN:0975-1459
Journal of Pharmaceutical Sciences and Research
www.jpsr.pharmainfo.in

Assessment of Prescription Pattern among Patients Suffering from Headache

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Abstract

The aim of the study was to evaluate prescription pattern in patients with headache. This study was conducted at Apollo hospital, Jubilee Hills, Hyderabad. The study was carried out in neurological outpatient department. Total 95 patients with headache were included in this present study. Collection and documentation of data was done after obtaining consent from the patients suffering from headache. For assessment of prescription pattern, WHO prescribing indicators were used. Clinirex was utilised for assessing drug-drug interaction (DDI). In this present study majority 74.74% patients suffering from headache were female and 25.26% patients were male. In 95 prescriptions, total 35.79% of patients were prescribed with NSAIDs in combination with anti-emetic drugs. All the drugs were prescribed with oral route of administration and were prescribed with brand names. The average number of drugs prescribed per prescription was 2.84. Total number of DDIs observed were 66. Majority 68.42% of DDIs noticed were from the category of monitor closely. Most commonly prescribed NSAID was naproxen. It can be concluded that by involving pharmacist along with neurologist to assess prescription pattern and DDIs can be helpful for the prevention or reduction of adverse drug reactions in patients with headache.

Keywords: Anti-depressant, anti-convulsant, NSAID, prophylactic treatment, risk factor

INTRODUCTION

Headaches are a heterogeneous group of disorders leading to massive weight of disease on society and an exertion of high costs in healthcare systems. Headache decreases quality of life, job and social functioning and increases use of headache related services. Headache disorders are between the top ten reasons of disability. As the frequency of headache increases it leads to regular intake of analgesics and triptans that can lead to medication overuse headache (MOH), this in turn causes difficulty in treatment of headache. This condition is usually categorised by a headache that occurs for 15 or more days per month or more than 3 months. Furthermore, overuse of medication causes prolonged headache in patients suffering from a primary headache disorder.

However, there are developments in acute and prophylactic treatment of primary headaches, but nonetheless many people suffering from headache are not diagnosed and treated properly, as chronic headache is difficult to treat. Generally, standard care therapy is provided for patients with headache by general practitioners and neurologists in private practice. It has been observed that most of the primary care physicians lack specialization in headache care. Likewise, organized concepts for treatment of headache using primary, secondary and tertiary health care systems are not used in many countries. Moreover, restricted or unrestricted access to headache specialists increases further complications and financial burden. In the long run it leads to increasing costs or halting the restricted personal resources for the therapy of difficult-to-treat long ailing patients. These limitations can cause unsuccessful headache diagnosis and treatment, that further causes headache patients to have repeated consultations and end up spending time and resources on alternative therapies, unnecessary hospitalizations and disciplines.

Nonetheless, there is enough proof that affective and mood disorders affect the outcome in patients with headache, almost all the studies that are available do not have sufficient data on psychiatric comorbidities. To avoid these problems in daily practice, a multidisciplinary headache treatment program in a tertiary headache center in Berlin, Germany has been developed that involves a complete assessment including a headache diagnosis according to ICDH-II criteria, musculoskeletal disorders and screening for psychiatric comorbidity and offers treatment according to clinical guidelines. The integrated headache care program instigates a fresh hope by following the recommendations of a three-tier interdisciplinary system (Thomas-Martin Wallasch *et al.* 2012).

Ethical approval

A formal ethical approval was acquired before the commencement of the study from the Institutional Ethics Committee-Biomedical Research Apollo Hospitals, Hyderabad. The approval reference number is AHJ-ACD-080/10-21. The date of approval was 29/10/2021.

MATERIAL AND METHODS

For the present study prior approval was obtained from Institutional Ethics Committee, Apollo Hospital, Hyderabad. An observational study was carried out at the Neurology outpatient department, Apollo Hospital, Film Nagar, Jubilee Hills, Hyderabad. The Study was conducted for a period of seven months starting from October 2021 to April 2022.

To collect data for the present study, prescription of patients was utilized. Data was collected by analysing the prescriptions in neurology out-patient department.

Inclusion criteria: Patients with acute sign of headache, patients in the age group of equal to and more than 18 to equal to and less than 75 years, patients those gave written

consent to participate in research and patients visiting out-patient department of neurology. Patients not willing to participate were excluded, patients with critical health conditions, of age less than 18 years or the age more than 75 years were also excluded.

Before obtaining the consent from the participants they were provided with a patient information leaflet about study. Patients were informed that confidentiality of participants will be maintained. The researchers met one on one with the patients and explained the about the study and the importance of their willingness to participate or quit at any stage of the research. Data collection form was designed for purpose of this study and it included demographic data, history of medical condition, details of treatment. The collected data was documented in it. For assessing the drug utilisation, WHO indicators of prescriptions were utilised (Ayesha Mahek Raja et al. 2023, Sharma V et al. 2017, Jain S et al. 2015) and for classifying drugs, ATC classification was utilised (Morales-Plaza CD et al. 2017).

The diagnosed category of disease was based on WHO's ICD11 criteria of categorization (https://icd.who.int/en, accessed on 07/05/2022). The DDIs, were assessed using Clinirex (https://www.clinirex.com/Interactions). The collected data, was entered into a Microsoft Excel 2016 Spreadsheets. Descriptive statistical analysis was done.

Limitations of the Study:

The patient data was collected from prescriptions of neurology outpatient department thus patient details about medical history and medication history detail were not available.

RESULTS AND DISCUSSION

This present study included 95 patients with headache. In this present study most commonly 29.47% patients suffering from headache were in the age group 26-35 years and it is represented in Fig 1. Gender status is represented in Fig 2. It was similar to the study results of Subhransu Sekhar Jena *et al* (Subhransu Sekhar Jena *et al*.2015).

In this present study the majority 83.16% patients were suffering from migraine followed by 14.74% tension-type headache and only 2.11% had cluster headache, represented in Table 1. Occupation status is represented in Table 2. In this present study, for acute pain relief 35.79% patients were prescribed with NSAID combined with antiemetic followed by 24.21% patients prescribed with NSAID alone as represented in Table 3 and Table 3.1. This was contrary to the results of Subhransu Sekhar Jena *et al* (Subhransu Sekhar Jena *et al*.2015). Prophylactic therapy for patients with headache with mono and dual therapy is represented in Table 4 and Table 4.1.

There were 66 DDIs noted in this study and the majority 98.48% DDIs were in monitor category. The most common 54.55% drug-drug interaction in monitor category. DDIs category status is represented in Table 5. Names of drugs of various DDIs category is represented in Table 5.1 and Table 5.2.

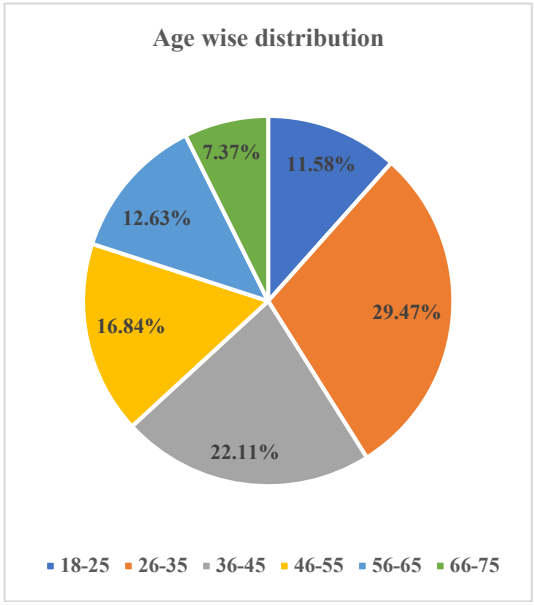

Figure 1: Age wise distribution

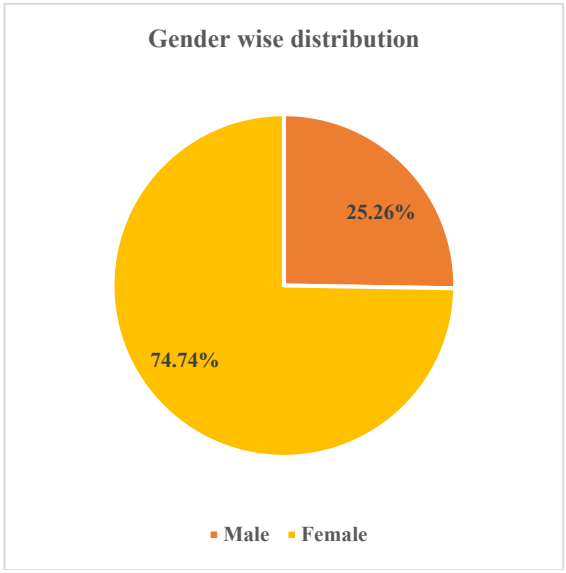

Figure 2: Gender wise distribution

Table 1: Type of headache according to ICD-11 classification:

ICD-11 classification		Code	Number (N)	Percentage (%)
Diseases of the nervous system	Migraine	8A80	79	83.16
	Tension type headache	8A81	14	14.74
	Cluster headache	8A82	2	2.11
		Total	**95**	**100.00**

Table 2: Occupation status:

Occupation status	Number (N)	Percentage (%)
Business	7	7.37
Employed	15	15.79
Housewife	53	55.79
Not working	20	21.05
Total	**95**	**100.00**

Table 3: Acute pain relief therapy with mono and dual therapy status:

Type of therapy	Number (N)	Percentage (%)
Monotherapy	23	24.21
Dual therapy	46	48.42
Total	**69**	**72.63**

Table 3.1: Drug treatment for acute pain relief status:

Drugs	Number (N)	Percentage (%)
NSAID+ Antiemetic	34	35.79
NSAID alone	23	24.21
NSAID+ PPI	8	8.42
NSAID+ Selective serotonin receptor antagonist	4	4.21
Total	**69**	**72.63**

Table 4: Prophylactic therapy in headache with mono and dual therapy:

Type of therapy	Number (N)	Percentage (%)
Monotherapy	6	6.32
Dual therapy	19	20.00
Poly therapy	1	1.05
Total	**26**	**27.37**

Table 4.1: Groups of drugs for prophylactic therapy of headache:

Drugs	Number (N)	Percentage (%)
Anti-depressant	3	3.16
Anti-depressant+ Anti-convulsant	3	3.16
Antidepressant+ Beta-blocker	1	1.05
Anti-depressant+ Benzodiazepines	2	2.11
Anti-depressant+ Anti-platelet	2	2.11
Anticonvulsant+ Anti-convulsant	1	1.05
Anticonvulsant+ Anti-convulsant+ Benzodiazepine	1	1.05
Anti-convulsant+ Calcium Channel Blocker	2	2.11
Anti-convulsant+ Beta blocker	1	1.05
Anti-convulsant+ Benzodiazepine	3	3.16
Anti-convulsant	2	2.11
Beta-blocker+ Benzodiazepine	2	2.11
Beta-blocker	1	1.05
Calcium channel blocker+ Angiotensin II receptor antagonist+ Benzodiazepine	1	1.05
Calcium channel blocker	1	1.05
Total	**26**	**27.37**

Table 5: Drug-drug interactions category status:

Drug-drug interactions category	Number (N)	Percentage (%)
Generally avoid	1	1.05
Monitor	65	68.42
Total	**66**	**69.47**

Table 5.1: Drug-drug interaction of to be monitored category:

Monitor	Number (N)	Percentage (%)
Amitriptyline+ Zolpidem	1	1.52
Atorvastatin+ Clopidogrel	2	3.03
Clonazepam+ Escitalopram	2	3.03
Levetiracetam+ Clobazam	1	1.52
Naproxen+ Clopidogrel	1	1.52
Naproxen+ Escitalopram	3	4.55
Pregabalin+ Nortriptyline	1	1.52
Pregabalin+ Tramadol	1	1.52
Propranolol+ Alprazolam	1	1.52
Propranolol+ Amitriptyline	11	16.67
Propranolol+ Naproxen	36	54.55
Telmisartan+ Pregabalin	1	1.52
Topiramate+ Zolpidem	1	1.52
Tramadol+ Pregabalin	1	1.52
Levetiracetam+ Oxcarbazepine	1	1.52
Topiramate+ Escitalopram	1	1.52
Total	**65**	**98.48**

Table 5.2: Drug-drug interaction of generally avoid category:

Generally avoid	Number (N)	Percentage (%)
Aspirin+ Naproxen	1	1.52
Total	1	1.52

CONCLUSION

It was concluded that majority of the patients were prescribed with dual therapy in both acute pain relief therapy and prophylactic therapy. Sixty-six DDI's were noticed thus pharmacist can play a crucial role with neurologist to prevent or reduce DDI's and in turn adverse drug reactions. In future pharmacist can play a crucial role along with neurologist to promote rational drug use. However, high quality and prospective studies are needed to identify the prescription patterns among patients suffering from headache.

Funding

No funding support was obtained for this present study.

Conflicts of interest

There were no conflicts of in this present study.

REFERENCES

1. Thomas-Martin Wallasch *et al*. Multidisciplinary integrated headache care: a prospective 12-month follow-up observational study, 2012. The Journal of Headache and Pain;13:521-529.
2. Subhransu Sekhar Jena *et al*. Migraine: Pattern of prescription & Adverse drug reaction profile in a tertiary care teaching hospital,2015. Journal of Pharmaceutical Sciences and Research;7(3):111-116.
3. Ayesha Mahek Raja et al. A prospective observational study on assessment of prescription pattern among patients suffering from cervical and lumbar pain. International journal of Pharmacy and Pharmaceutical research. 2023:27(2).
4. Morales-Plaza CD *et al.* Anticonvulsant prescription patterns in patients covered by the Colombian health system. Neurologia. 2017 Jan-Feb;32(1):6-14.
5. Reference.clinirex.com (2021). Drug interaction checker- Clinirex Drug Reference Database. [online] Available at: https://www.clinirex.com/Interactions
6. Callixte Kuate Tegueu, *et al.* The spectrum of neurological disorders presenting at a neurological clinic in Yaoundé, Cameroon, 2013. Pan African Medical Journal; 14:148.
7. Sinha K. New essential drugs list finalized after eight years. Times of India. 2011. Jun 11 Available from: http://www.articles timesofindia.indiatimes.com/2011-06-11/india/29646861_1_essential-medicines-nlem-new-cancer-drugs. [Ref list]
8. Monestime, Judith P *et al.* "Analyzing the ICD-10-CM Transition and Post implementation Stages: A Public Health Institution Case Study." Perspectives in health information management vol. 16, Spring la. 1 Apr. 2019.
9. Rajeev Shreshtha, *et al.* Assessment of prescription pattern and prescription error in outpatient department at tertiary care hospital, Central Nepal, 2019. Shreshtha and Prajanti journal of pharmaceutical policy and practice; 12(16): 2-9.
10. Dilnasheen Sheikh, *et al.* Assessment of medication errors and adherence to WHO prescription writing guidelines in a tertiary care hospital, 2017. Future journal of pharmaceutical sciences; 3: 60-64.
11. Md. Sahab Uddin *et al.* Spectrum of Disease and Prescription Pattern for Outpatients with Neurological Disorders, 2017. Ann neurosci 25:25-37.
12. Sharma V. Sharma S, Narwat A *et al.* Prescribing pattern of various drugs in neurology department at tertiary care hospital in Haryana. Int J Health Sci Res. 2017, 7(12):75-79.
13. Jain S *et al.* A systemic review of prescription pattern monitoring studies and their effectiveness in promoting rational use of medicines. Perspect Clin Res 2015:6:86-90.
14. Marina Guisado-Clavero, *et al.* Medication patterns in older adults with multimorbidity: a cluster analysis of primary care patients, 2019. BMC family practice; 20:82: 1-12
15. Richard Ofori-Asenso, *et al.* Prescribing indicators at primary health care centers within the WHO African region: a systemic analysis (1995-2015), 2016. BMC Public Health; 16:724.