International Journal of Basic & Clinical Pharmacology
Gondane A et al. Int J Basic Clin Pharmacol. 2024 Sep;13(5):696-701
http://www.ijbcp.com
pISSN 2319-2003 | eISSN 2279-0780

DOI: https://dx.doi.org/10.18203/2319-2003.ijbcp20242431

Original Research Article

Physician perspectives on non-steroidal anti-inflammatory drugs: a comprehensive survey on usage and preferences

Ajitkumar Gondane*, Dattatray Pawar

Medical Affairs Division, Alkem Laboratories, Alkem House, Lower Parel, Mumbai, Maharashtra, India

Received: 07 August 2024
Revised: 14 August 2024
Accepted: 16 August 2024

***Correspondence:**
Dr. Ajitkumar Gondane,
Email: ajitkumar.gondane@alkem.com

ABSTRACT

Background: Physician's choices of NSAIDs are shaped by efficacy, safety, patient factors, and clinical context, impacting policies and patient outcomes. This survey aimed to explore NSAID use in acute painful conditions, focusing on healthcare professionals' preferences.
Methods: A descriptive, questionnaire-based, cross-sectional study was conducted among 1,028 physicians at APICON-2024.
Results: The survey found that 57.4% of respondents were consultants and 33.4% were general physicians. Most practiced independently (55.6%) or in hospitals (35.5% in government and 7.9% in corporate hospitals). Over 75% frequently prescribed NSAIDs, with diclofenac being the most common (54.8%). NSAIDs were typically prescribed for one week (72.6%) and used mainly for low back pain (77.5%), joint pain, migraine, and post-surgical pain. Safety concerns included gastrointestinal (72.4%), renal (59.3%), and hepatic issues. Over 68% viewed nimesulide as safer for the gastrointestinal and renal systems than other NSAIDs, though opinions varied. More than 90% of physicians also prescribed NSAIDs with paracetamol.
Conclusions: The survey offers insights into NSAID use among Indian physicians, with frequent use for pain management, especially for low back and joint pain. Diclofenac is the most prescribed, with a typical duration of one week. Safety concerns remain significant, particularly regarding nimesulide. The findings highlight diverse practices and ongoing safety considerations in NSAID use.

Keywords: NSAID utilization, Acute painful conditions, Physician preferences, Nimesulide safety

INTRODUCTION

Nonsteroidal anti-inflammatory drugs (NSAIDs) are essential in modern medicine, recognized for their powerful analgesic, anti-inflammatory, and antipyretic properties. They are vital in treating a wide range of conditions, from common issues like headaches, menstrual pain, and minor musculoskeletal injuries to chronic illnesses such as osteoarthritis, rheumatoid arthritis, and other inflammatory diseases. Their effectiveness and versatility are highly valued, with various formulations and administration methods available to meet diverse patient needs and clinical situations.[1,2]

NSAIDs are highly effective in pain relief and inflammation reduction, making them a preferred choice for many healthcare providers. They work by inhibiting cyclooxygenase (COX) enzymes, which decreases the production of prostaglandins that cause pain and inflammation. However, this mechanism also contributes to significant side effects, especially in the gastrointestinal (GI) tract, cardiovascular system, and kidneys.[3] Despite their benefits, prescribing NSAIDs requires careful consideration due to these potential adverse effects, including GI complications, cardiovascular risks, kidney damage, and hypersensitivity reactions. Factors such as patient age, existing health conditions, other medications,

and genetic factors further complicate the use of NSAIDs.[4] Ongoing research and pharmacological advancements continue to enhance our understanding of these risks, leading to updated clinical guidelines.

The widespread use of NSAIDs in various medical fields highlights their role in providing effective symptom relief and improving patients' quality of life.[5] However, prescribing NSAIDs involves balancing therapeutic benefits with potential risks. Physicians' choices of specific NSAIDs are influenced by several factors, including the drug's efficacy, safety profile, patient-specific considerations, and the clinical context.[6] Understanding these choices is important for several reasons. It helps reveal how clinicians manage the complexities of NSAID therapy, balancing effective pain relief with the need to minimize harm. It also provides insights into real-world prescribing practices, which may differ from clinical guidelines due to practical considerations and individual patient needs. Additionally, understanding these preferences can guide the creation of educational programs and resources to optimize NSAID use and improve patient outcomes.

Physician's perspectives on NSAID use are invaluable. Their insights into practical application, experiences with various formulations, and strategies for mitigating risks highlight how they balance efficacy and safety in diverse patient populations. Firstly, it sheds light on how clinicians navigate the complex landscape of NSAID therapy, balancing the need for effective pain relief with the imperative to minimize harm. Secondly, it provides insights into real-world prescribing practices, which may differ from clinical guidelines due to practical considerations and individual patient needs. Finally, such an understanding can guide the development of educational programs and resources aimed at optimizing NSAID use and improving patient outcomes.

Understanding these prescribing patterns can show adherence to clinical guidelines and identify areas needing further education or resources. These insights can also inform future research and policy development to optimize NSAID use and enhance patient outcomes. This survey aims to explore physician preferences for NSAIDs, focusing on their perceptions of efficacy and safety, and the factors influencing their selection to provide a comprehensive overview of NSAID utilization in clinical practice.

METHODS

It was a descriptive questionnaire-based cross-sectional survey. The survey was conducted among the physicians who attended APICON-2024 on date 22nd February to 25th February 2024 and those who have given consent to participate in the survey. Total 1028 physicians registered their response. The ethics committee permission was waived off as only the perception of physicians are taken and no patient data is gathered in any mean. It was a questionnaire-based survey. The questionnaire was developed acter the initial discussion with the experts in the field. Then unmet need was identified and the questions were incorporated accordingly. The questionnaire comprised 13 questions in the English language. Multiple-choice options were given to the participants. The questionnaire then converted to google form and the data was collected in excel sheet. For data analysis Microsoft excel is used. Data were analysed using descriptive statistics. The data variables are expressed as number or percentage.

RESULTS

In the study, out of 1028 participants, 583 participants were male and 445 participants were female. The mean age group is given below in the Table 1.

Table 1: Demographic details of the participants.

Gender	No. of participants	(Age) Mean±SD
Male	583	38.87±7.15
Female	445	35.00±5.34

Physician demographics and practice settings as shown in Figure 1, out of the 1,028 physicians who participated in the survey, the majority were consultant physicians (57.4%), followed by general physicians (33.4%). Other specialties represented in the survey included diabetology, cardiology, gastroenterology, and neurology, though specific percentages for these specialties were not provided.

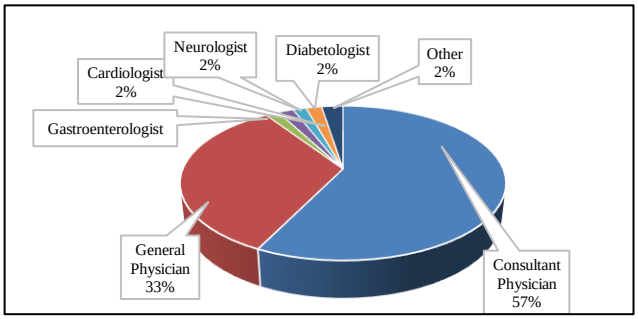

Figure 1: Speciality of physicians.

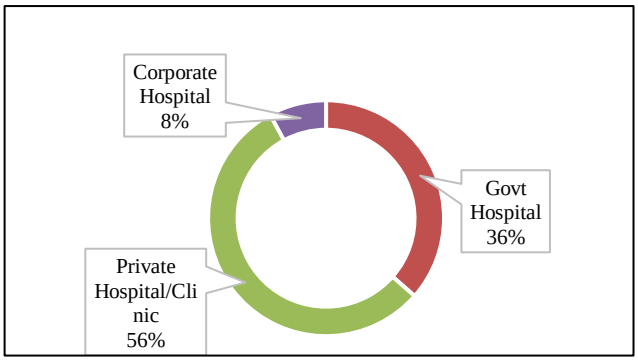

Figure 2: Type of practice.

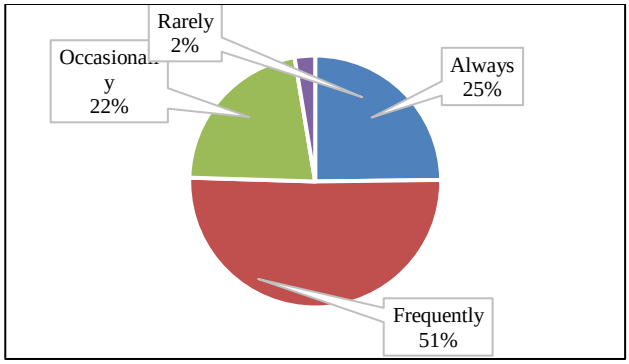

Figure 3: How frequently do you prescribe NSAIDs in your clinical practice.

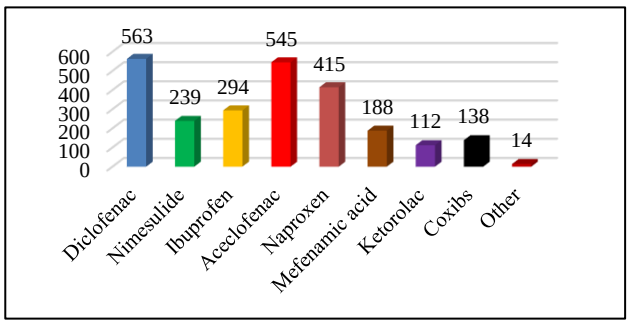

Figure 4: Preferred NSAID in clinical practice.

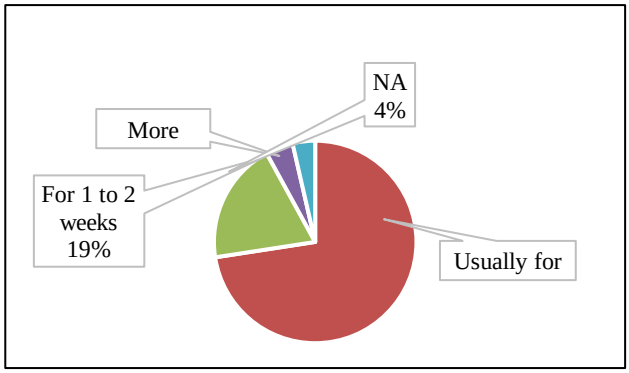

Figure 5: Typical duration of NSAID prescriptions in clinical practice.

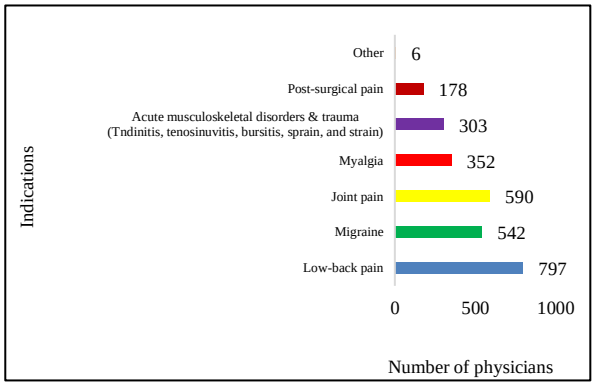

Figure 6: Indication of NSAID usage.

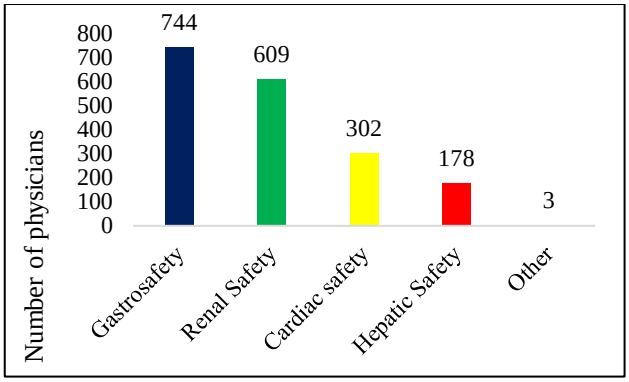

Figure 7: Safey concern associated with NSAIDs.

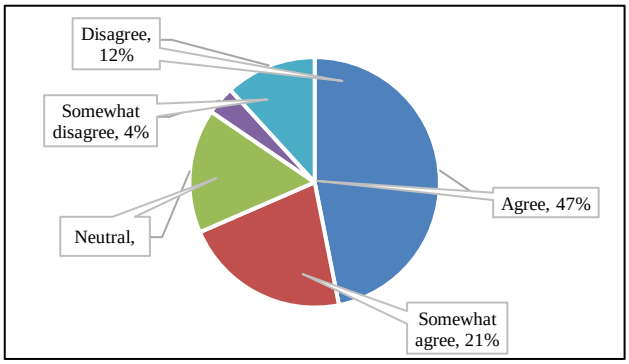

Figure 8: Do you feel that nimesulide has better gastro and renal safety profile than other NSAIDs.

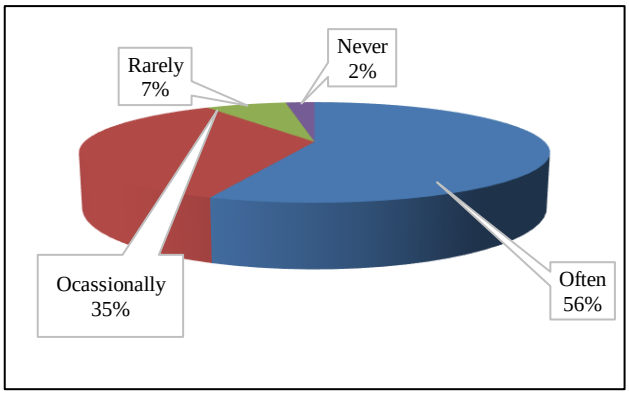

Figure 9: Do you typically use NSAIDs in combination with other medications like paracetamol for pain management.

As shown in Figure 2, most of the surveyed physicians operated their own clinical practice (55.6%) or worked in hospitals. Among the hospital-based physicians, 35.5% were employed in government hospitals, while 7.9% worked in corporate hospitals.

The frequency of NSAID prescription in clinical practice is shown in Figure 3. The survey revealed that NSAID usage was prevalent among the physicians, with more than 75% reporting that they always or frequently used NSAIDs in their clinical practice. Occasional NSAID users

accounted for approximately 22% of the respondents. NSAID preference is shown in Figure 4. Diclofenac emerged as the most commonly preferred NSAID, with 54.8% of the physicians favouring it. Other frequently prescribed NSAIDs included aceclofenac, naproxen, ibuprofen, and nimesulide, though exact percentages for these alternatives were not specified.

Typical duration of NSAID prescriptions in clinical practice and Indications is given in Figure 5 and 6. The typical duration for NSAID prescriptions was noted to be one week (72.6% of respondents), with seldom use extending beyond two weeks. Physicians primarily prescribed NSAIDs for managing low back pain (77.5%), followed by joint pain, migraine, myalgia, acute musculoskeletal disorders, and post-surgical pain. These conditions represent the most common indications for NSAID use among the surveyed physicians.

Physician opinion on safety concerns associated with NSAIDs are given in Figure 7. The survey highlighted significant concerns regarding the safety of NSAIDs. Of the 1,028 physicians, 744 (approximately 72.4%) indicated concerns about the gastro safety of NSAIDs, while 609 (59.3%) expressed concerns regarding renal safety. Additionally, 302 physicians noted specific concerns about renal safety, and 178 reported concerns about the hepatic safety of NSAIDs.

As shown in figure 8, on perception of nimesulide safety profile, over 68% of the physicians agreed or somewhat agreed that nimesulide has better gastro and renal safety compared to other NSAIDs. In contrast, 165 physicians (16.1%) held a neutral opinion, and 159 physicians (15.5%) disagreed with the assertion that nimesulide is safer than other NSAIDs.

Figure 9 shows the usage of combination of NSAID with paracetamol. The survey also explored the use of combination therapy involving NSAIDs and paracetamol. More than 90% of the physicians reported using NSAIDs in combination with paracetamol in their clinical practice. In contrast, less than 10% of the physicians indicated that they rarely or never used this combination.

In summary, the survey provides a comprehensive overview of NSAID usage and preferences among Indian physicians attending APICON 2024. The findings underscore the widespread use of NSAIDs, particularly diclofenac, for managing various pain conditions. Despite their prevalence, significant concerns about the gastro, renal, and hepatic safety of NSAIDs persist among physicians.

The perception of nimesulide as having a better safety profile highlights the ongoing need for balanced risk-benefit considerations in NSAID prescribing practices. The frequent use of combination therapy with paracetamol further underscores the strategies employed by physicians to enhance pain management while potentially mitigating adverse effects.

DISCUSSION

This study provides an insightful overview of NSAID usage patterns, preferences, and safety concerns among a diverse cohort of 1,028 physicians from across India who attended APICON 2024. The findings underscore the widespread reliance on NSAIDs in clinical practice, reflecting their pivotal role in pain management across various medical specialties.

The predominant use of diclofenac reflects its efficacy and availability, but also highlights significant safety concerns, especially gastrointestinal and renal complications. The substantial number of physicians expressing these concerns underscores the need for ongoing education and alternative pain management strategies. The common practice of combining NSAIDs with paracetamol suggests a strategy to enhance analgesic efficacy while reducing NSAID doses and minimizing adverse effects. This indicates a nuanced approach to balancing efficacy and safety. The perception of nimesulide as having a superior safety profile, despite restrictions in some countries, warrants further investigation. This may reflect regional prescribing habits and highlights the need for robust, localized safety data.

In our survey, it was observed that over 50% physicians used NSAIDs frequently, and around 25% physicians use it always. This finding is consistent with other studies where it was shown that NSAIDs are commonly prescribed by doctors across different specialties and practice settings. In one study conducted in India, all 1916 doctors surveyed prescribed NSAIDs frequently, with prescriptions ranging from 1 to 15 daily.[7] Another study in Iran found that 19.3% of prescriptions contained at least one NSAID, with general practitioners prescribing NSAIDs more frequently than specialists.[8] Additionally, a study in Finland reported that NSAIDs were prescribed for 46% of patients with musculoskeletal pain in primary care.[9]

It was observed that diclofenac, accounting for 54.8%, is the most prescribed NSAID among physicians. This is followed by aceclofenac, which is the second most frequently prescribed, and then naproxen, ibuprofen, and nimesulide. Other NSAIDs are prescribed less frequently in comparison. The most prescribed NSAIDs by physicians can vary depending on the country and specific practice setting. In one of the studies conducted by Ahmad et al at Jordan, it was documented that diclofenac is commonest NSAID for pain management.[10] In a study conducted at Delhi to understand the drug utilization pattern of patient using NSAIDs, it was observed that aryl acetic acid derivatives (Aceclofenac, Diclofenac) were the (10.5%), Nimesulide (6.26%), Lornoxicam (4%).[11,12]

Also, in another Indian study by Humaira et al, it was noted that the diclofenac (70.7%) was the commonest NSAID prescribed.[13] The findings of this study are parallel to the

findings of our study which also stated that diclofenac and aceclofenac are among the commonest NSAID prescribed by the physician.

In our survey it was seen that, almost 73% of the physician prescribe NSAID for a period up to 7 days. This finding of our study is supported by another study which observed that the typical duration of NSAID use is 2.74±5.5 days.[14] However, in another Indian study conducted by Motghare et al, the average duration of NSAID therapy is 3 days.[11] In one of the studies conducted at Nepal, to understand the prescription pattern and ADR (Adverse Drug Reaction) in orthopaedic OPD, the mean duration of NSAID therapy is 4 days.[15]

In our study we have observed that the conditions for which the NSAIDs are commonly used includes low back pain, joint pain, migraine, myalgia, and acute musculoskeletal disorder and trauma (tendinitis, tenosynovitis, bursitis, sprain and strain) etc. However, in a study conducted by Deborah Levy et al, it was seen that the common conditions for which the NSAIDs are prescribed includes musculoskeletal (MSK) pain (91%), soft-tissue injury (82%), fever (80%), arthritis (78%), and headache (72%).16

In our survey the major safety concerns associated with NSAID reported were gastrosafety, renal safety, and cardiac safety. Similar findings are also noted in a study done by Jan Schjøtt et al and Janet et al, which stated that there is more concerned about cardiovascular, gastrointestinal, and renal ADRS.[17,18] However, in a survey among 2000 physicians to understand their perspective on NSAID for the treatment of pain in osteoarthritis, they have noted the gastrosafety as a major safety concern with NSAIDs.[19]

In our survey we have observed that over 68% physician were agreed on a fact that nimesulide has better gastro and renal safety profile over other NSAID. This finding is supported by the evidence-based studies which stated that nimesulide has shown to have a lower incidence of gastrointestinal problems compared to other NSAIDs.[20] Also, in another study, nimesulide-paracetamol combination showed no significant rise in serum creatinine, which was observed in diclofenac paracetamol group, which supports to renal safety concerns of diclofenac.[21]

On a question of use of NSAIDs in combination with paracetamol, we have observed that over 50% of the physician often use it in combination with paracetamol. However, in another study, the finding is little different which stated that around 39% of the physician use the combination of NSAID with paracetamol.[7]

In summary, this comprehensive survey elucidates the diverse perspectives and preferences of physicians regarding the use of NSAIDs in clinical practice. Our findings highlight the critical factors influencing NSAID selection, such as efficacy, safety profiles, and patient-specific considerations. The variability in prescribing patterns underscores the need for continued education and consensus-building among healthcare providers. By integrating these insights, we can optimize patient outcomes, ensuring a more tailored and effective approach to pain management. Future research should aim to address the gaps identified in this survey, further refining our understanding of NSAID utilization and improving therapeutic strategies.

The survey has a few limitations. Sampling bias may be present, as it was conducted among APICON-2024 attendees who may not represent all Indian physicians and might have specific interests in pain management. Response bias is also a concern, as self-reported data may reflect socially desirable answers rather than actual practices. Additionally, the cross-sectional design limits the ability to assess changes in NSAID usage over time, making it difficult to establish trends or causality.

CONCLUSION

The survey offers an in-depth understanding of NSAID usage patterns, preferences, and safety concerns among Indian physicians at APICON 2024. Diclofenac is the most frequently prescribed NSAID for a variety of pain conditions, despite significant safety concerns, particularly regarding gastrointestinal and renal effects. Nimesulide is perceived by many physicians as having a comparatively better safety profile, although opinions are mixed. The widespread use of NSAID-paracetamol combination therapy reflects an effort to optimize pain management while addressing safety issues. These findings highlight the necessity for ongoing evaluation and careful consideration of the risk-benefit profile in NSAID prescribing practices.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Ghlichloo I, Gerriets V. Nonsteroidal anti-inflammatory drugs (NSAIDs). Treasure Island (FL). StatPearls Publishing. 2024. Available at: www.ncbi.nlm.nih.gov.
2. Lin JY, Zhang Y, Bian Y, Zhang YX, Du RZ, Li M, et al. Non-steroidal anti-inflammatory drugs (NSAIDs) in the environment: Recent updates on the occurrence, fate, hazards and removal technologies. Sci Tot Environ. 2023;16:68-97.
3. Bindu S, Mazumder S, Bandyopadhyay U. Non-steroidal anti-inflammatory drugs (NSAIDs) and organ damage: A current perspective. Biochemical pharmacology. 2020;180:114147.
4. Sohail R, Mathew M, Patel KK, Reddy SA, Haider Z, Naria M, et al. Effects of non-steroidal anti-inflammatory drugs (NSAIDs) and gastroprotective

NSAIDs on the gastrointestinal tract: a narrative review. Cureus. 2023;15(4).
5. Katz N. The impact of pain management on quality of life. J pain sym Mang. 2002;24(1):38-47.
6. Miller LG, Prichard JG. Selecting nonsteroidal anti-inflammatory drugs: pharmacologic and clinical considerations. JABFP. 1989;2(4):257-71.
7. Paul AD, Chauhan CK. Study of usage pattern of nonsteroidal anti-inflammatory drugs (NSAIDs) among different practice categories in Indian clinical setting. Euro J Clin Pharmacol. 2005;60:889-92.
8. Zeinali M, Tabeshpour J, Maziar SV, Taherzadeh Z, Zirak MR, Sent D, et al. Prescription pattern analysis of nonsteroidal anti-inflammatory drugs in the northeastern iranian population. J Res Pharm Prac. 2017;6(4):206-10.
9. Mäntyselkä P, Kumpusalo E, Takala J, Ahonen R. Variability in prescribing for musculoskeletal pain in Finnish primary health care. Pharmacy World and Science. 2001;23:232-6.
10. Al-Azayzih A, Al-Azzam SI, Alzoubi KH, Jarab AS, Kharaba Z, Al-Rifai RH, Alnajjar MS. Nonsteroidal anti-inflammatory drugs utilization patterns and risk of adverse events due to drug-drug interactions among elderly patients: a study from Jordan. J Saudi Pharma. 2020;28(4):504-8.
11. Motgahre VM, Bajait CS, Turankar A, Pimpalkhute SA, Dholpure M. Prescription pattern and adverse drug reaction profile of drugs prescribed with focus on NSAIDs for orthopedic indications at a tertiary care hospital. Skin. Skin. 2016;1:6.
12. Alam N, Bhardwaj A, Tiwari R, Sharma S, Dabas V. Drug utilization pattern of patients using NSAIDs in South Delhi hospital. Int J Pharm Sci. 2012;4(3):703-7.
13. Farheen H, Subhani G, Mohsin M. Prescription pattern of non-steroidal anti-inflammatory drugs in patients with acute musculoskeletal pain. Int J Basic Clin Pharmacol. 2016;5(6):2504-9.
14. Anandan I, Selvaraj N, Anandabaskar N, Meenakshi R, Dhamodharan A, Ganesan S, et al. Assessment of drug use pattern of nonsteroidal anti-inflammatory drugs using the World Health Organization core indicators in a tertiary care teaching hospital A cross-sectional study. Nation J Physio Pharm. 2019;9(10):1021-6.
15. Neupane GP, Rai M, Rokaya PK. Patterns of prescription and adverse drug reaction profile of non-steroidal anti-inflammatory drugs at orthopedic out-patients department. Nep Med Col J. 2022;24(2):170-5.
16. Levy DM, Imundo LF. Nonsteroidal anti-inflammatory drugs: a survey of practices and concerns of pediatric medical and surgical specialists and a summary of available safety data. Pediatric Rheumatol. 2010;8:1-8.
17. McDonald J, McBain L, Dowell AC, Morris C. GPs' views and experiences of prescribing non-steroidal anti-inflammatory drugs: a qualitative study. BJGP open. 2017;1:2.
18. Schjøtt J, Erdal H, Opskar S, Bjånes TK. Perception of prescribing factors and purchase statistics of non-steroidal anti-inflammatory drugs in an orthopedic clinic. BMC Research Notes. 2020;13:1-6.
19. Crichton B, Green M. GP and patient perspectives on treatment with non-steroidal anti-inflammatory drugs for the treatment of pain in osteoarthritis. Current Medical Research and Opinion. 2002;18(2):92-6.
20. Rainsford KD. Relationship of nimesulide safety to its pharmacokinetics: assessment of adverse reactions. Rheumatology. 1999;38(1):4-10.
21. Patil S, Nadaf N, Gupta S, Barai P, Makhija S, Lodha P, et al. A comparative analysis of the efficacy and safety of nimesulide/paracetamol fixed-dose combination with other NSAIDS in acute pain management: a randomized, prospective, multicenter, active-controlled study (the SAFE-2 study). Cureus. 2024;16:4.

Cite this article as: Gondane A, Pawar D. Physician perspectives on non-steroidal anti-inflammatory drugs: a comprehensive survey on usage and preferences. Int J Basic Clin Pharmacol 2024;13:696-701.