

# NSAIDs and self-medication: A serious concern

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## ABSTRACT

Nonsteroidal anti-inflammatory drugs (NSAIDs) are used by the patients frequently for pain which may be acute, acute-on-chronic, and chronic. For the relief of pain and inflammation, some patients may take the analgesics without consulting the family physician as they can procure the same easily, not realizing that there may be adverse effects associated with regular self-medication of NSAIDs. The NSAIDs have a risk of upper gastrointestinal bleeding or perforation, which may vary between individual NSAIDs at the doses commonly used by the patients. Thus, there is a need to create awareness in the society regarding the same to prevent self-medication associated complications.

**Keywords:** Analgesics, NSAIDs, OTC, self-medication

## Introduction

Self-medication is defined as a drug taken by the patient to treat a common illness or symptom without the advice of the physician. These may include drugs and herbal remedies.<sup>[1]</sup> Self-medication contributes to primary healthcare if practiced properly. Self-medication may lead to a positive outlook by being self-sufficient and to be in charge of ones' life, and decrease the expenses. However, at the same time, insufficient knowledge regarding self-medication drugs may lead to life-threatening consequences. To avoid the same, there should be adequate information with the consumer.<sup>[2]</sup>

The most common medical ailments for which self-medication is practiced are headache, joint ache, fever, cold and cough, allergy, acidity, and diarrhea. OTC (over-the-counter) drugs are a part of the self-medication process. Pharmacists are the first point of contact for OTC medication, and they can ensure safe and effective use of the drugs. However, even the pharmacists may find it difficult to keep a check on the patients' requests.

There may be risks involved such as inappropriate dosage, adverse drug reactions, drug interactions, prolonged, or frequent use of drugs. The patient who needs the drug finds it tempting to opt for an easy solution looking at the vast information which is available on the internet, whether online or OTC medication. Besides, direct-to-patient advertising through media increases the exposure of drugs to the patients which may lead to serious consequences on chronic use without the advice of the physician.<sup>[3,4]</sup>

Initially, most of the drugs are prescription drugs. Later on, looking at the huge database and the number of patients having used a particular drug, it may be given an OTC status.<sup>[5]</sup> Therefore, there is a need to check the self-medication of drugs by the patient, and at the same time minimize the complications due to OTC drugs or self-medication.

There are numerous studies on self-medication which have been conducted in various countries across the globe, and the data reveal that self-medication is common, especially in economically deprived communities. Friends and family members, previous prescriptions, and nowadays information from internet plays a very important role for self-medication. Family physicians and primary care can greatly help in decreasing the burden related to the complications associated with the self-medication of NSAIDs

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by asking the patients to consult them in case of any new drug intake which has not been prescribed by them.

### Commonly used NSAIDs for self-medication

Pain is the most common symptom for which a patient seeks medication. Pain can be treated by nonsteroidal anti-inflammatory drugs (NSAIDs). NSAIDs are used for the symptomatic treatment of acute painful conditions, and also used for chronic painful inflammatory joint diseases. NSAIDs can further be divided based on their selectivity for *cyclooxygenase* (COX) isoforms (COX-1 and COX-2) into non-selective NSAIDs and selective NSAIDs with preferential inhibition of COX-2. The commonly used analgesic anti-inflammatory drugs are paracetamol, aspirin, diclofenac, ibuprofen, and naproxen. However, there may be serious side effects such as peptic ulcer, perforation, and bleeding. Certain types of NSAIDs if used simultaneously at a particular dose within a specified period may be contraindicated in a patient, as it may lead to serious adverse drug reactions, such as gastrointestinal bleeding.<sup>[6,7]</sup>

Various studies have reported that NSAIDs may increase the risk of upper gastrointestinal complications three to five times.<sup>[8]</sup> Various studies have shown that the use of selective cyclooxygenase-2 (COX-2) inhibitors is associated with a lower risk of gastrointestinal complications.<sup>[9,10]</sup> However, they have been associated with an increased risk of serious cardiovascular events. Thus, the safety of various NSAIDs is mainly due to their gastrointestinal and cardiovascular profile.<sup>[11]</sup>

In a systematic review and meta-analysis, it was observed that the dose and duration of NSAIDs and concurrent medication being taken by the patients is an important factor determining the adverse effects. Aceclofenac, celecoxib, and ibuprofen were associated with the lowest relative risk whereas piroxicam and ketorolac had the highest relative risk of upper gastrointestinal complications. The intermediate relative risk was observed for diclofenac, ketoprofen, tenoxicam, naproxen, indomethacin, and diflunisal.<sup>[11]</sup> Most commonly used drugs were analgesics (58%), followed by antipyretics and antibiotics, and very few of them (8%) are aware of the adverse consequences.<sup>[12]</sup> Thus, there is an alarming concern regarding the patient's knowledge of the possible side effects due to self-medication.

Considering the potential adverse drug reactions and complications which are associated with the prolonged use of NSAIDs, monitoring of its use in diverse sections of society needs to be done in more detail.<sup>[13-15]</sup>

In a recent study on NSAIDs, randomized control trials and observational studies published before January 2018 were reviewed, and more than three hundred papers were included for generating evidence-based recommendations. As NSAIDs are associated with several serious adverse effects such as cardiovascular disease, renal impairment, and gastrointestinal complications, therefore identification of high-risk cases,

selection of NSAIDs and follow-up of the patients after drug therapy are necessary to minimize the risk of adverse events.<sup>[16]</sup>

In a survey that included four hundred patients, the knowledge of NSAIDs including their dosage, side effects and contraindications were assessed in patients in an outpatient rheumatology clinic. It was observed that 68.5% were using OTC NSAIDs. Nearly one-third were unaware of contraindications of NSAIDs such as peptic ulcer disease, renal impairment, and hypertension.<sup>[17]</sup> However, long-term controlled clinical trials do not show a differential effect on the cardio-renal system with selective and non-selective NSAIDs.<sup>[18]</sup>

### Conclusion

Adverse drug reactions lead to morbidity and mortality, which is alarming,<sup>[12,13]</sup> and efforts are being made by the physicians, caregivers, and pharmacists to counsel and guide the patients regarding the rational use of drugs so that they are not a burden to the family and society but on the contrary ease the pharmacoeconomics of our society and country. Many-a-times, healthcare workers and doctors may find self-medication and its related harm a burden to the society, and with an increase in analgesic use, a close watch and monitoring of adverse events, and ways to minimize their risks are needed. There is no substitute for visiting and consulting a primary care or family physician before starting any medication to prevent morbidity associated with NSAIDs, and the patients should be made aware of the same during every visit.

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### Conflicts of interest

There are no conflicts of interest.

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