

The Frequency of Prescribing Nonsteroidal Anti-inflammatory Drugs in a Public Hospital

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Abstract

Aim: This study aims to explore the frequency of prescribing nonsteroidal anti-inflammatory drugs (NSAIDs) in a public hospital in Al-Kharj. **Materials and Methods:** This study included review the electronic medical records of outpatients who received at least one of the NSAIDs between January 1, 2018, and June 30, 2018, in a public hospital in Al-Kharj. **Results:** The most commonly prescribe NSAIDs was diclofenac (61.23%) followed by ibuprofen (36.12%). About half of the patients receiving NSAIDs were <30 years old (50.17%) and about 72.25% of them were <40 years old. Only diclofenac was prescribed as a topical form (gel, cream, or ointment). More than 71% of diclofenac prescriptions were included a topical dosage form. **Conclusion:** The study showed that non-aspirin NSAIDs prescribing rate was high, particularly diclofenac and ibuprofen. It is important to increase the awareness of health-care providers to increase the efficacy and decrease the adverse effects of these medications.

Key words: Frequency, Nonsteroidal anti-inflammatory drugs, Prescribing pattern

INTRODUCTION

Nonsteroidal anti-inflammatory drugs (NSAIDs) are used as antipyretic, anti-inflammatory, and analgesic agents.^[1] They are among the most commonly prescribed medicines throughout the world. It is estimated that in the USA, NSAIDs accounted for approximately 12.1% of prescriptions in 2010.^[2] Including over-the-counter use, >30 billion doses of NSAIDs are consumed annually in the United States alone.^[3] While these medications have potential adverse effects, they are broadly sold in the pharmacies. They are often prescribed without a defined diagnosis and without a defined therapeutic goal, resulting in unnecessary costs.^[4]

Long-term NSAIDs use is associated with many serious cardiovascular, gastrointestinal, renal, and other side effects.^[5] Al-Azayzih *et al.* stated that these drugs are associated with numerous adverse effects including renal toxicity, gastrointestinal bleeding, and ulcer mainly among elderly patients.^[6] Asiri *et al.* conducted a questionnaire among Saudi population and reported that more than 65% of the participants agreed that they have taken NSAIDs and that

6.7% of them taking it regularly.^[7] They also said that the frequency of taking NSAIDs without a medical prescription was 45.5%.^[7] It should be noted that aspirin is not considered NSAIDs if it is prescribed in a low dose.^[8]

It is important to know how these drugs are being prescribed and used to initiate a discussion on rational drug use and to suggest measures to change physicians' prescribing habits.^[9] Hence, this study aims to explore the frequency of prescribing NSAIDs in a public hospital in Al-Kharj.

MATERIALS AND METHODS

This study included review the electronic medical records of outpatients who received at least one of the NSAIDs between January 1, 2018, and June 30, 2018, in a public hospital

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in Al-Kharj. The exclusion criteria included the inpatient perceptions and prescriptions that did not include one of the NSAIDs. Aspirin was excluded because it is considered NSAIDs only if it is prescribed in a high-dose aspirin (<https://www.nhs.uk/conditions/nsaids/>).

The study was approved by the ethical committee with a log No. 20-131E. The data include number and percentage of prescribed NSAIDs, the age and gender of the patients, and the dosage forms of the prescribed NSAIDs.

The data were collected using Microsoft Excel spreadsheet and the descriptive data were represented as a frequencies and percentages.

RESULTS

During the study period, 2677 patients received NSAIDs other than aspirin. The most commonly prescribe NSAIDs was diclofenac (61.23%) followed by ibuprofen (36.12%). The frequency of prescribing NSAIDs is shown in Table 1.

About half of the patients receiving NSAIDs were <30 years old (50.17%) and about 72.25% of them were <40 years old. Diclofenac was prescribed mainly for patients between 20 and 29 years old (28.62%) followed by 30–39 years old (22.15%). Ibuprofen was prescribed mainly for patients <19 years old (33.82%) followed by patients 20–29 years old (27.30%). Meloxicam was prescribed mainly for patients more than 29 years old (92.42%). The age of patients receiving NSAIDs is shown in Table 2.

Table 1: Frequency of prescribing NSAIDs

NSAIDs	Number	Percentage
Diclofenac	1639	61.23
Ibuprofen	967	36.12
Meloxicam	66	2.47
Indomethacin	3	0.11
Naproxen	2	0.07
Total	2677	100

NSAIDs: Nonsteroidal anti-inflammatory drugs

Table 2: Age of patients receiving NSAIDs

NSAIDs	<19	20–29	30–39	40–49	50–59	More than 59
Diclofenac (Diclofenac®) (%)	277 (16.90)	469 (28.62)	363 (22.15)	226 (13.79)	170 (10.37)	134 (8.17)
Ibuprofen (Ibuprofen®) (%)	327 (33.82)	264 (27.30)	212 (21.92)	102 (10.55)	40 (4.14)	22 (2.27)
Meloxicam (Meloxicam®) (%)	1 (1.52)	4 (6.06)	15 (22.73)	12 (18.18)	22 (33.33)	12 (18.18)
Indomethacin (Indocid®) (%)	1 (33.33)	0 (0.00)	1 (33.33)	0 (0.00)	0 (0.00)	1 (33.33)
Naproxen (Naprox®) (%)	0 (0.00)	0 (0.00)	0 (0.00)	2 (100.00)	0 (0.00)	0 (0.00)
Total	606 (22.64)	737 (27.53)	591 (22.08)	342 (12.77)	232 (8.67)	169 (6.31)

NSAIDs: Nonsteroidal anti-inflammatory drugs

Diclofenac and ibuprofen were prescribed mainly for male patients. Only 39.96% of the diclofenac prescriptions and 24.23% of the ibuprofen prescriptions were for female patients. On the other hand, meloxicam was prescribed mainly for female patients (78.79%). Gender of patients receiving NSAIDs is shown in Table 3.

Only diclofenac was prescribed as a topical form (gel, cream, or ointment). More than 71% of diclofenac prescriptions were included a topical dosage form. All of the prescriptions of meloxicam, indomethacin, and naproxen were prescribed as a solid dosage forms (tablet or capsule). Ibuprofen was prescribed mainly as a tablet (76.94%) followed by syrup dosage form (23.06%). Dosage forms of the prescribed NSAIDs are shown in Table 4.

DISCUSSION

The most commonly prescribe NSAIDs in the present study was diclofenac followed by ibuprofen. Diclofenac was prescribed as solid dosage forms or as topical dosage form. The other NSAIDs (meloxicam, indomethacin, and naproxen) were prescribed only as a solid dosage forms.

Al-Azayzih *et al.* stated that among elderly patients, diclofenac sodium was the most commonly prescribed non-aspirin NSAID (25.1%) followed by ibuprofen (3.1%).^[6] Asiri *et al.* reported that the most commonly consumed NSAID in their study was ibuprofen (45.2%).^[7] In addition, Hwong *et al.* reported that among the patients who received NSAIDs in primary care in Malaysia, diclofenac was the most commonly prescribed NSAID (40.5%).^[10]

Bahreini and Koneri stated that in their study, aceclofenac was the most commonly prescribed NSAID (15.1%) followed by diclofenac (13.06%).^[11] Moreover, Awodele *et al.* reported that in the outpatient pharmacy setting of a university teaching hospital in Nigeria, diclofenac potassium was the most commonly prescribed non-aspirin NSAID (23.2%) and that the tablet/capsule formulations were the major forms by which the NSAIDs were prescribed (97.9%).^[12]

Farheen *et al.* stated that diclofenac was the most commonly prescribed NSAIDs for patients with acute musculoskeletal

Table 3: Gender of patients receiving NSAIDs

NSAIDs	Male (%)	Female (%)
Diclofenac	984 (60.04)	655 (39.96)
Ibuprofen	636 (65.77)	331 (24.23)
Meloxicam	14 (21.21)	52 (78.79)
Indomethacin	1 (33.33)	2 (66.67)
Naproxen	0 (0.00)	2 (100.00)
Total	1635 (61.08)	1042 (38.92)

NSAIDs: Nonsteroidal anti-inflammatory drugs

Table 4: Dosage forms of prescribed NSAIDs

NSAIDs	Tablet or capsule	Gel, cream, or ointment	Syrup	Others
Diclofenac (Diclofenac®)	460 (28.06)	1171 (71.45)	0 (0.00)	8 (0.49)
Ibuprofen (Ibuprofen®)	744 (76.94)	0 (0.00)	223 (23.06)	0 (0.00)
Meloxicam (Meloxicam®)	66 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)
Indomethacin (Indocid®)	3 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)
Naproxen (Naprox®)	2 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)
Total	1275 (47.63)	1171 (43.74)	223 (8.33)	8 (0.30)

NSAIDs: Nonsteroidal anti-inflammatory drugs

pain (70.7%) and they also stated that selective cyclooxygenase-2 inhibitors were not prescribed to any patient.^[9] Latha *et al.* reported that in orthopedic outpatient department at a tertiary care hospital, the NSAIDs commonly prescribed were aceclofenac 45%, diclofenac 24%, and etodolac 20%.^[13]

In the present study, most of diclofenac prescriptions were included a topical dosage form; this is rational because diclofenac is the only NSAID that is available topically. Diclofenac gel is used in ankle sprains, acute tenosynovitis, soft-tissue injuries, and blunt traumas and also used to reduce phlogistic signals and maintain quality of wound repair.^[14-17]

CONCLUSION

The study showed that non-aspirin NSAID prescribing rate was high, particularly diclofenac and ibuprofen. It is important to increase the awareness of health-care providers to increase the efficacy and decrease the adverse effects of these medications. Moreover, it is important to know the prescribing pattern of NSAIDs to decrease the unnecessary use of these medications and to ensure that the patients use these medications appropriately.

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