

Original Article***NSAIDs Preferences According to the Diagnosis and Concomitant Use of Other Drugs with NSAIDs in Orthopedics Department***

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Abstract

Objective: The aim of the present study was to investigate the diagnosis, NSAIDs preferences according to the diseases and concomitant use of other drugs with NSAIDs in orthopedics department at tertiary level teaching hospital in Mymensingh.

Methods: A descriptive, cross sectional study was conducted from January 2015 to December 2015 among 300 patients attending at orthopedics outpatient department of the Mymensingh Medical College & Hospital after obtaining requisite consent from the patients. Data were collected through interviewing of the patients and prescription slips. The collected data were entered into the computer and analyzed by using SPSS to assess the diagnosis and current trends of using NSAIDs according to the diagnosis in orthopedics department.

Results: In a pool of 300 patients, low back pain was the highest rate of (52%) disease conditions in Orthopedic OPD. Trauma, fracture, road traffic accident and Osteoporosis (19%) were second highest among the total patients. Aceclofenac was highest prescribed drug in low back pain which was (61.36 %). Indomethacin was highest prescribed drug in frozen shoulder which was (17.64%). Indomethacin was highest prescribed in Osteoarthritis which was (14.11 %). Proton pump inhibitor (44.67%) was most frequently used gastro protective agents. Vitamin B complex (33.33%) was the most frequently used concomitant drug along with NSAIDs.

Conclusion: Non-steroidal anti-inflammatory drugs (NSAIDs) are most commonly used drugs for the management of pain and inflammation. Most of the NSAIDs were prescribed for medical cases for rheumatoid arthritis (RA), osteoarthritis (OA), low back pain (LBP) etc. Indomethacin was the drug of choice in Mymensingh Medical College and Hospital, as it was the hospital supplied drug.

Keywords: NSAIDs, Indomethacin, orthopedic OPD.

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Introduction

Pain is the most common symptom prompting patients to seek medical attention and is reported by more than 80% of individuals who visit their primary care provider. Despite the frequency of pain symptoms, individuals often do not obtain satisfactory relief of pain. This has led to recent initiatives in health care to make pain the fifth vital sign, thus making pain assessment equally important as obtaining a patient's temperature, pulse, blood pressure, and respiratory rate¹. According to International Association for the Study of Pain, it is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". Furthermore "Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life"². Non-steroidal anti-inflammatory drugs (NSAIDs) are most commonly used drugs for years for management of pain and inflammation with good efficacy and represent most widely prescribed class of medications in the world and are used as over the counter drugs. They work by interfering with cyclooxygenase [COX] pathway, which involves the conversion of arachidonic acid by the enzyme COX to prostaglandins. COX is available in two isoforms i.e. COX-1 and COX-2^{3,4}. With variety of NSAIDs that are presently available, it is difficult at times to select a particular NSAID on a rational basis alone but on empiricism. These are increasingly used for variety of indications like rheumatoid arthritis (RA), osteoarthritis (OA), low back pain (LBP) etc. Inappropriate drug prescribing according to diagnosis is a global problem, particularly

in developing and transitional countries. Irrational drug use leads to reduction in the quality of drug therapy, wastage of resources, increased treatment cost, increased risk for adverse drug reactions and emergence of drug resistance⁵. Gastrointestinal complications associated with NSAID use include: dyspepsia, gastrointestinal bleeding, peptic ulcers and perforations of the upper gastrointestinal tract^{6,7}.

Materials & Method

A descriptive, cross sectional study was conducted from January 2015 to December 2015 among 300 patients attending at orthopedics outpatient department of the Mymensingh Medical College & Hospital after obtaining requisite consent from the patients. Data were collected through interviewing of the patients. The study was approved by the institutional ethical committee. There are no violations of moral and ethical norms during preparing this research. Purposive sampling was adopted for collecting data. The interviews were held directly in the corridor of Orthopedic Outpatient Department. Prescriptions slips were taken from the patients and the relevant information was entered into the predesigned proforma. The collected data were entered into the computer and analyzed by using SPSS (version 20.1).

Result

The age structures of those patients have been categorized in years into four groups. Overall, 11 (4%) patients were in 2-15 years old while 76 (25%) patients were in 16-30 years old. 142 (47%) patients belong to 31-50 years age group and 71 (24%) are in 50+ (plus) years old. (Table 1)

Table 1: Age distribution of the study population (n=100)

Age in years	Number	Percentage
2-15	11	3.66 %
16-30	76	25.34 %
31-50	142	47.34 %
50+	71	23.66 %

Total number of patients both male and female were 300. Male patients (53%) were more than the female patients (47%) at the orthopedic outpatient department. (Figure 1)

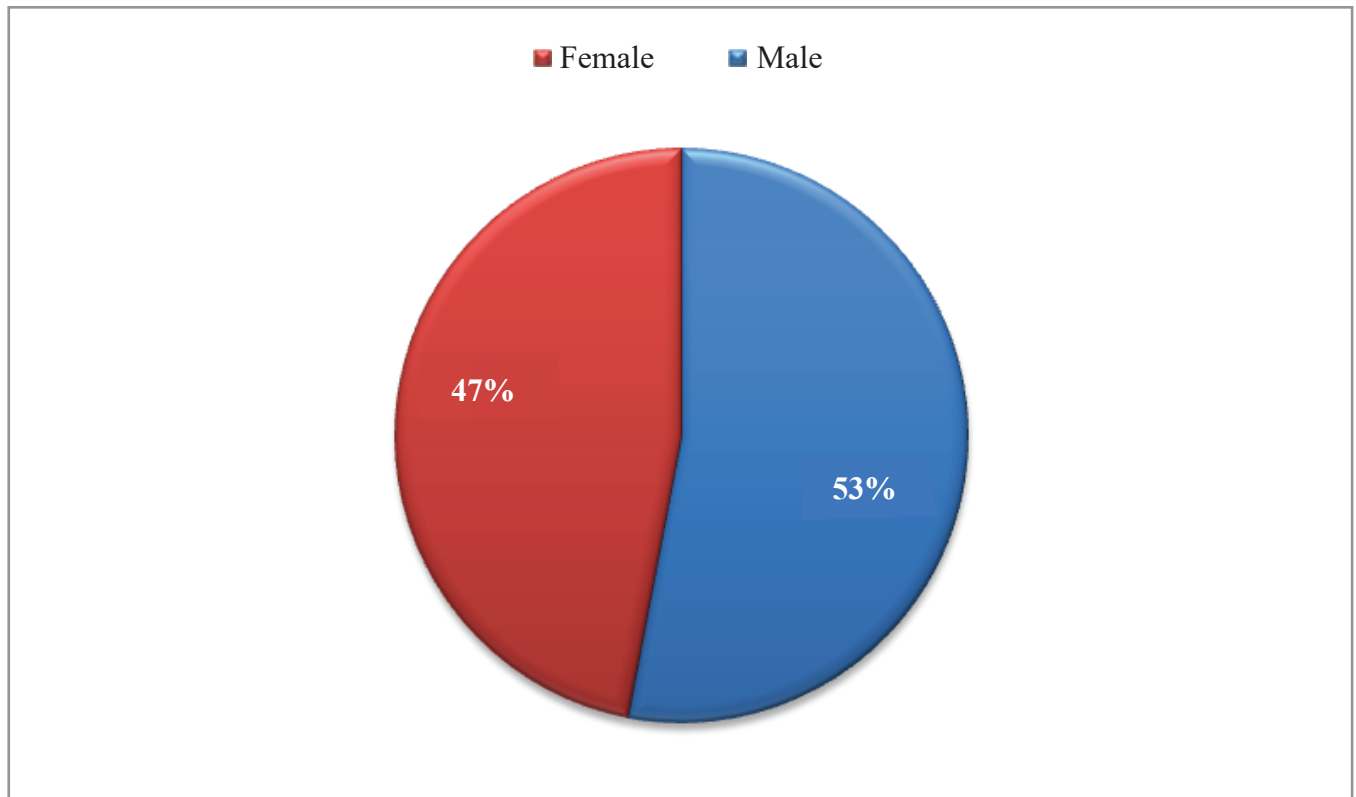


Figure 1: Pie Chart Showing Sex of the Patients

Low back pain was the highest rate of (52%) disease conditions in Orthopedic OPD. Trauma, fracture, road traffic accident and Osteoporosis (19%) were second highest among the total patients. Osteoarthritis was third highest disease. While frozen shoulder (14%) was less prevalent among them. (Table 2)

Table 2: Type of disease condition in orthopedic outpatient department N=300

Type of Disease	Frequency	Percentage
Low back pain	157	52.34%
Frozen shoulder	41	13.66%
Osteoarthritis	44	14.66%
Trauma/Fracture/Road Traffic Accident/ Osteoporosis	58	19.33%
Total (N)	300	100%

According to the Table 3, Indomethacin was highest prescribed drug in Low back pain which was 50.53% whereas Indomethacin less prescribed in Osteoarthritis which was 14.11%. Aceclofenac was highest prescribed drug in low back pain which was 61.36% and lowest prescribed drug in frozen shoulder which was 6.81%. Sulindac was highest prescribed drug in low back pain 45% and lowest prescribed drug in frozen shoulder which was 10%. Naproxen was highest prescribed drug in low back pain which was 44.44 %

and lowest prescribed drug in other condition which was 11.12%. Ibuprofen was highest prescribed drug in low back pain which was 46.15% and lowest prescribed drug in frozen shoulder which was 15.38%. Ketorolac was highest prescribed drug in low back pain which was 54.83% and lowest prescribed drug in frozen shoulder which was 6.45%. Etoricoxib was highest prescribed drug in low back pain which was 43.47% and lowest prescribed drug in frozen shoulder which was 17.39%.

Table 3: NSAIDs preferences according to the diseases N=300

NSAIDs	LBP	FS	OA	Others
Indomethacin	43 (50.53%)	15 (17.64%)	12 (14.11%)	15 (17.64%)
Aceclofenac	54 (61.36%)	6 (6.81%)	12 (13.63%)	16 (18.88%)
Sulindac	9 (45%)	2 (10%)	5 (25%)	4 (20%)
Naproxen	12 (44.44%)	8 (29.62%)	4 (14.81%)	3 (11.12%)
Ibuprofen	12 (46.15%)	4 (15.38%)	6 (23.07%)	4 (15.38%)
Ketorolac	17 (54.83%)	2 (6.45%)	3 (9.67%)	9 (23.03%)
Etoricoxib	10 (43.47%)	4 (17.39%)	-	9 (39%)

* LBP-Low back pain, FS-Frozen shoulder, OA-Osteoarthritis and Others are Trauma/Fracture/Road Traffic Accident/ Osteoporosis.

Out of 300 patients only 240 were provided gastro-protective agents, while 60 (20%) were not prescribed any gastro-protective agents with NSAIDs. PPI (44.67%) was most frequently used gastro protective agents. (Table 4)

Table 4: Use of gastro-protective agents along with NSAIDs N=300

Gastro -protective agents	Frequency	Percentage
Acid Neutralizing agent	16	5.33%
PPI	134	44.67%
H ₂ blocker	30	10%
Acid Neutralizing agent & PPI	60	20%
None	60	20%
Total (N)	300	100%

Other drugs such as Vitamin B complex, Vitamin D, Muscle relaxant, Glustan sulphate and both Vitamin B & D were prescribed to 252 patients out of 300. Vitamin B complex 33.33% was the most frequently used concomitant drug along with NSAIDs .

Table 5: Concomitant use of other drugs with NSAIDs N=300

Other drugs	Frequency	Percentage
Vitamin B complex	100	33.33%
Vitamin D	82	27.33%
Muscle relaxant	23	7.67%
Glustan sulphate	17	5.67%
Vitamin B & D	30	10%
None	48	16%
Total	300	100

Discussion

All together a total of 300 prescriptions were collected during the study period. This study showed male patients were more than the female patients which were 53% and 47% respectively. Similar results were obtained in the study conducted by Sharma et al. 2006 and Mahadi et al. 2012^{8,9}. The present study showed that orthopedic outpatients were prescribed NSAIDs due to low back pain, frozen shoulder, Osteoarthritis and other clinical conditions such as trauma/fracture/road traffic accident/ Osteoporosis. Low back pain is the highest prevalent disease in the orthopedic (OPD) which was 52.34%. The patients of trauma, fracture, road traffic accident and osteoporosis were about 19%, Osteoarthritis that was about 15%, frozen shoulder that was about 14%. Rahman et al. (2007) conducted a study on medical outpatient and surgical outpatient department in 3 hospitals, Dhaka Medical College (DMCH), Bangabandhu Sheikh Mujib Medical University (BSMMU) and a private medical college hospital. They found that the prevalence of low back pain was 50% in DMC, 40% in BSMMU and 53% in private hospital which is quite similar to this study². On the other hand, Mahadi et al. (2012) found that the prevalence of LBP 15.6% and gout 3.9% which is quite

different from this research⁹. Maximum number of patients were prescribed gastro-protective with NSAIDs while only 20% were not prescribed any gastro-protective agent with NSAIDs. This was similar with Singh and others who found that maximum number of patients were prescribed gastro-protective agent with NSAIDs Singh et al¹⁰. The most commonly prescribed gastro-protective with NSAIDs was PPI 45% to minimize the adverse effect of NSAIDs. Singh et al¹⁰ also showed that PPI was the highest number of prescribed gastro-protective agent with NSAIDs which was closely reflected in this study¹⁰. Vitamin B complex was the mostly prescribed other drugs to the patients 33% who are suffering from low back pain. Singh et al¹⁰. also showed in their study that multivitamins were prescribed to about 16% patients.

Conclusion

Non-steroidal anti-inflammatory drugs (NSAIDs) are most commonly used drugs for the management of pain and inflammation. Most of the NSAIDs were prescribed for medical cases for rheumatoid arthritis (RA), osteoarthritis (OA), low back pain (LBP) etc. several types of NSAIDs such as Indomethacine, Aceclofenac, ketorolac, Etoricoxib, Ibuprofen, Sulindac, and Naproxen were commonly prescribed

drug in pain management in orthopedic OPD. Aceclofenac was highest prescribed drug in low back pain. Indomethacin was highest prescribed drug in frozen shoulder and osteoarthritis patients. Indomethacin was the drug of choice in Mymensingh Medical College Hospital as it the hospital supplied drug, cost effective. Proton pump inhibitor 44.67% was most frequently used gastro protective agents. Vitamin B complex 33.33% was the most frequently used concomitant drug along with NSAIDs.

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