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Original Article

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Utilization Pattern of Analgesics in Orthopedic in-Patient Department at Tertiary Level Teaching Hospital in Dhaka

Shima Akter Khatun*[1], Sumaiya Ahmed[2], Mosaddek Hossain Mondal[3], Md. Rashel Bin Hossain[4], Kartick Chanda Shaha[5], Shusmita Saha[6]

Abstract

Introduction with Objective: *The aim of this study was to evaluate the utilization pattern of analgesics in orthopedic in-patient department at tertiary level teaching hospital in Dhaka.* ***Materials and Methods:*** *An observational, cross-sectional study was carried out for 6 month from July 2018 to December 2018. Collected data were age, sex, number of the drugs, co-prescribed drugs along with analgesic during the study period. The patients details were recorded in a predegined data collection form and results were analyzed by SPSS Version (20.1).* ***Results:*** *Out of 200 patients, 123 were male and 77 were female. Out of 200 patients, most of the patients belonged to 41-50 years (30%). In this study, 55.5% of patients had received single analgesic. Ketorolac was the most commonly prescribed analgesic (43.49%). During hospitalization, majority of the patients have received parenteral preparation. Gastroprotective agents were frequently prescribed along with analgesics.* ***Conclusion:*** *The percentages of analgesics were found satisfactory. Regular educational interventions to improve prescribing practices among physicians at different levels may further promote rational prescribing.*

Keywords: *Analgesics, Orthopedic in-patient department.*

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***1. Corresponding Author:**
Dr. Shima Akter Khatun
Assosiate Professor(c.c)
Department of Pharmacology
Dhaka National Medical College
Dhaka, Bangladesh.

2. Dr. Sumaiya Ahmed
Honorary Medical Officer
Dhaka Medical College and Hospital, Dhaka, Bangladesh.

3. Dr. Mosaddek Hossain Mondal
Lecturer
Department of Biochemistry
Dhaka National Medical College
Dhaka, Bangladesh.
Email: drmosaddekmondal@gmail.com

4. Md. Rashel Bin Hossain
Monitoring and Reporting Officer
Islamic Relief Bangladesh, Dhaka, Bangladesh.

5. Dr. Kartick Chanda Shaha
Associate Professor (c.c.)
Department of Pharmacology
Dhaka National Medical College
Dhaka, Bangladesh.
Email: kartick_shaha@yahoo.com

6. Dr. Shusmita Saha
Professor (c.c.)
Department of Pharmacology
Dhaka National Medical College
Dhaka, Bangladesh.

Introduction:

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage[1,2]. Analgesics including nonsteroidal anti inflammatory drugs (NSAIDs) are commonly prescribed group of drugs in clinical practice for the management of pain and infllammation[3,4]. NSAIDs are also most widely prescribed class of medications worldwide and commonly used over the counter[5]. These drugs have a wide range of adverse effects. Gastrointestinal toxicity is a major clinical limitation[6,7]. Therefore, periodic evaluation of drug utilization patterns needs to be done to enable suitable modifications in the prescription of drugs to increase the therapeutic benefit and decrease the adverse effects. Prescribing pattern studies are conducted to monitor, evaluate and if necessary, suggest modifications in the prescribing behavior of medical practitioners to make medical care rational and cost effective[8]. Rational use of medicines (RUM) is an issue that has global importance, as it aims at evaluating the accessibility, availability, and correct prescribing of the drugs[9]. In developing countries like Bangladesh, where the financial resources are scarce and affordability of the patients is less, implementation of RUM becomes more important and therefore, the assessment of drug utilization is vital for clinical, economic, and educational purposes[10]. Drug utilization research studies conducted in the in patient settings are effective tools. Prescribing pattern of commonly used analgesics that help in evaluating drug prescribing trends, efficiency, and cost effectiveness of hospital formularies[11,12]. Therefore, this study was conducted to observe and analyze the

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prescribing pattern of analgesics at orthopedic in patient department of tertiary care hospital of Dhaka.

Material and Methods:

An observational, cross sectional study design was adopted for this study. The data was collected from July 2018 to December 2018 at orthopedic in patient department of Dhaka National Medical College Hospital. **Inclusion Criteria were** Patients who received analgesics in orthopedics ward during study period irrespective of age, sex, diagnosis, and treatment. **Exclusion Criteria were** Prescriptions of patients attending orthopedic OPD and those who were admitted in other in patient department.

Collection of Data: A total 200 patients were enrolled during the study. Demographic data comprised age, sex, and addresses were collected from bed head ticket information file. The clinical data were name of analgesics, route of administration, co prescribed drugs were recorded. These data were documented in a predesigned case record form. Analgesics prescribed by physicians of orthopedic department of this hospital were considered in this study.

Statistical Analysis: The data were analysed by SPSS Version (21.0 method).

Results:

Out of 200 patients, 126 were male and 74 were female.

Table I: Sex of the Study populations (n=200)

Sex	Number	Percentage
Male	126	63%
Female	74	37%

Out of 200 patients, most of the patients belonged to 41-50 years (30%)

Table II: Age of the Study population (n=200)

Years	Numbers	Percentage
20-30	40	20%
31-40	50	25%
41-50	60	30%
51-60	26	13%
61-70	24	12%

In our study, most common NSAIDs prescribed to the patients were ketorolac (54.7%) followed by naproxen (24.0%). Other NSAIDs were diclofenac (11.3%), aceclofenac (8.0%), ibuprofen (2.7%), paracetamol (1.3%).

Table III: Commonly used analgesics of the study population (n=200)

Commonly used analgesics	Frequency	percentage
Ketorolac	90	45%
Naproxen	60	30.0%
Diclofenac	25	12.5%
Aceclofenac	13	6.5%
Ibuprofen	7	3.5%
paracetamol	5	2.5%

Most of the patients were co-prescribed NSAIDs with gastroprotective agents (90%) followed by calcium (65%) and vitamins supplements (32.5%) (Table IV).

Table IV: Most common co-prescribed drugs along with NSAID

Co-prescribed drugs	frequency	percentage
Gastroprotective agent	180	90%
Calcium and Vit D	130	65%
Multivitamin	64	32%

Discussion:

The present study was performed on 200 (Two hundred) prescriptions of both sex from indoor patients of the orthopedic department of Dhaka National Medical College Hospital, Dhaka. Although most of studies have shown that more female patients use NSAIDs than male. However present study showed that more males patients (60%) are using NSAIDs than female patients (40%). out of 200 patients. Majority of patients using NSAIDs were between the ranges of 41-50years (30%), 31-40years (25%) and 21-30years (20%). It shows that NSAIDs are used mainly in middle age group. Similar results have been reported in study done by Niyaz Alam et al. (2013)[13]. In the present study the most common NSAIDs prescribed to the admitted patients were ketorolac (54.7%) followed by diclofenac (24.0%). Other NSAIDs naproxen, ketorolac and ibuprofen 2.7%, 8.0% and 9.3% respectively. In a study on orthopedic patients Gor and Saksen (2011) found that diclofenac (65%) was the highest prescribed drug, followed by nimesulide (10%), ibuprofen (6%), piroxicam (5%), etoricoxib (2%) and others (12%)[10]. Globally, NSAIDs are most commonly prescribed drugs for the management of pain and inflammation and the same has been reflected in this study. Despite the wide clinical use of NSAIDs, their gastrointestinal toxicity is the major limitation in clinical use. Hence, they are coprescribed with gastroprotective agents[14]. To manage NSAIDs associated GI adverse effects, a PPI, H2 antagonist or local acting antacids must be co-prescribed with NSAIDs. In the present study 90% of patients were co-prescribed with gastroprotective agents along with NSAIDs, out of which 48% were prescribed with proton pump inhibitors and 36% with H2 receptor antagonist. The other concurrently prescribed drugs include calcium (65%) and multivitamins (32%). Near to similar results were obtained in other studies.

Conclusion:

In this study, NSAIDs were more prevalently used in middle age group of male patients. The ketorolac and naproxen were most frequently prescribed drugs. The monotherapy with single NSAID was preferred mode of therapy via parenteral and oral therapy. NSAIDs are vital for clinical management of wide range of pain and inflammatory condition, but it is mostly accompanied by

gastrointestinal complications. In the present study, the gastro protective agents were widely prescribed for prevention and healing of NSAIDs associated ulcers or other GI complications. The study concluded that the prescription of NSAIDs was found to be rational. However to ensure safe, effective and well balanced therapeutic management of this NSAIDs, both patients and prescribers should be more sensitized regarding the appropriate dose, dosage regimen and overall indications. Education program, counseling program, utilization survey, alertness of community pharmacy regarding OTC drugs can be helpful to minimize harmful effect of the drug to patients.

Conflicts of Interest: None.

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