Original research article

Evaluation of prescription pattern and quality of life among osteoarthritis patients in a tertiary care hospital

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Abstract

Background: Osteoarthritis (OA) is a chronic, degenerative joints disorder of multiple aetiology. The main issue experienced by the patients is the occurrence of pain, which causes functional disability that ranges from mild to moderate.

Objectives: The aim was to study the prescribing pattern of the drugs used in the management of osteoarthritis.

Methods: A total of 250 patients diagnosed osteoarthritis patients were enrolled in this study. Prescription pattern of all patients were analysed using the following indicators: Percentage (%) of drugs prescribed, average number of drugs received by the patient, percentage of drugs given parenterally/orally.

Results: After evaluation of the prescription it was seen that OA more prevalent in females and usually occur at age of above 30-60 years. NSAIDs, Supplements, calcium and PPIs were also abundant among other classes. Acetaminophen was most common among NSAIDs.

Conclusion: Proper counselling by a clinical pharmacist on the non-pharmacological measures may help in the improvement of symptoms among the OA patients.

Keywords: Prescription pattern, NSAIDs, acetaminophen, osteoarthritis

Introduction

Osteoarthritis is a primary localized degenerative disorder of multi-factorial etiology characterized by loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis and a range of biochemical and morphological alternatives of the synovial membrane and joint capsule. Late-stage osteoarthritis shows softening ulceration and focal disintegration of the articular cartilage [1]. Osteoarthritis is estimated to be the leading cause of lower extremity disability amongst older adults with a postulated lifetime risk for osteoarthritis of knee being approximately 40% in men and about 47% in women. The risks are higher in obese individuals [2-3]. Risk factors contribute to the appearance of the disease, such as gender, age, trauma, overuse and genetic conditions. The main tissues affected by osteoarthritis are the synovium, bone and hyaline cartilage [4].It is a joint disease that begins with cartilage degeneration and gradually affects periarticular soft tissues and the subchondral bone, producing chronic inflammation with synovitis, osteophytosis, loss of joint space, bone remodelling and ultimately, it progresses to severe and irreversible joint destruction [5].

Prescription writing can be depicted as an art, since it reflects the directions given by the prescriber to the patients or their representatives [6].Therefore; a prescription written by a physician is a reflection of his perspective towards the particular disease and the role of drug in its treatment. It also provides an apprehension into the essence of the health care delivery system. Examining and monitoring of prescriptions and drug utilization studies can actually analyze the recent trend of prescription pattern which will further help to identify the problems and provide feedback to prescribers. Defining drug prescription and utilization pattern provides advantageous feedback to prescribers in order to improve their prescribing behaviour [7]. Prescription pattern monitoring studies (PPMS) are drug utilization studies with the main focus on prescribing, dispensing and administering of drugs.

Aims &Objectives: The main objective of this study was to analyze the current trend of prescribing patterns of the drugs used in the management of OA at study site.

Materials and Methods

The present retrospective observational study was conducted in the department of orthopaedics for a period of 1 year at a tertiary care hospital. All newly diagnosed patients of OA receiving treatment attending the OPD of orthopaedics for complains of OA were included in the study. During the period, a total 250 patients of OA were found to be attending orthopaedic department OPD.

Data from the patient are recorded in case record form and were analyzed for prescription pattern of drug.

Inclusion Criteria
- Patients>18 years of age with either sex.
- Patients diagnosed as OA receiving NSAID along with antiulcer drugs.
- Patients who are willing to participate in the study.

Exclusion Criteria
- Patients with history of gastrointestinal, renal, liver disease or any psychiatric illness.
- Patients with surgical indications for the management of OA.
- Patients who are not willing to participate in the study.

The case record included demographic data, relevant medical history, including complementary alternative medicine (CAM) therapy, and comorbidities. The prescription pattern was analyzed using the following indicators: Percentage (%) of drugs prescribed, average number of drugs received by the patient, percentage of drugs given parenterally/ orally.

Statistical analysis: Statistical analysis was done by using SPSS version 20.Initially the variables were checked for normal distribution. Later, the data were presented in frequency distribution tables in the case of categorical variables and mean and standard deviation in the case of numerical variables. P value <0.05 to be considered as statistically significant.

Results

A total of 250 patients diagnosed with osteoarthritis were enrolled and analysed in the study.

Majority of the OA patients (62%) were 31-60 years of age group, slightly female predominance (54%) was observed. 56% subjects residing at rural areas and 46% belong to middle socio-economic class. Most of them 64% was married [table: 1].

Table 1: Socio-demographic details of Osteoarthritispatients

Socio-demographic variables		Number (n=250)	Percentage
Age group	<30 years	30	12%
	31-60 years	155	62%
	>60 years	65	26%
Gender	Male	115	46%
	Female	135	54%
Residential status	Rural	110	44%
	Urban	140	56%
Socio-economic class	Lower	50	20%
	Middle	115	46%
	Upper	85	34%
Marital status	Married	160	64%
	Unmarried	90	36%

Out of the total 250 patients, n=170 (68%) had OA of the knee, followed by n=50(20%) patients with OA of the hip. The details are summarized in table 2.

Table 2: Distribution of patients based on the joints involved in osteoarthritis

| Affected Site	Frequency (n)	Percentage (%)
Knee	170	68%
Hip	50	20%
Shoulder	30	12%

Details of the class of drugs prescribed among OA patients: The results revealed NSAIDs as the drug class of choice as it was prescribed n=306(35.01%) times among 250 prescriptions, followed by antacids n=211(24.14 %) and calcium supplements n=182 (20.82 %). Details of the class of drugs prescribed are shown in table 3.

Table 3: Details of the class of drugs prescribed among OA patients

Class of drug	Frequency (n)	Percentage (%)
NSAIDs	306	35.1%
Gastro protective agents	211	24.14%
Calcium supplements	182	20.82%
Opioids	97	11.9%
SYSADOA	36	4.11%
Vitamin supplements	29	3.31%
Muscle relaxants	13	1.48%

*SYSADOA: Symptomatic Slow Acting Drugs for Osteoarthritis

Most common NSAIDs was acetaminophen (50.8%) followed by diclofenac (41.5%).Detailsof the common type of NSAIDs prescribed are shown in fig. 1.
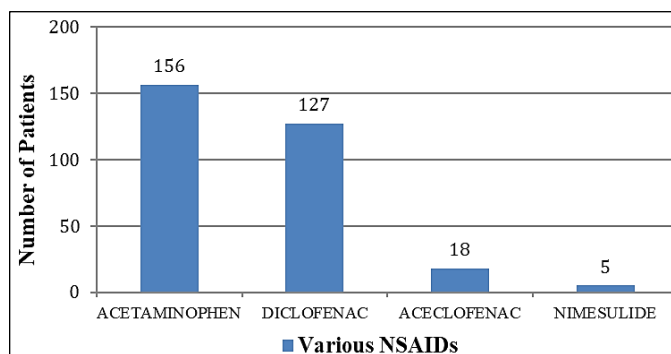
Fig1: Distribution of the most commonly prescribed NSAIDs

Subgroup analysis the gastro protective agents the pantoprazole (n=124) as the most commonly prescribed agent followed by antacids (n=35), ranitidine (n=22), omeprazole (n=18), other (n=12). The Calcium was prescribed in a combination of Vitamin D3 (n=139) followed by Calcium alone, which was prescribed (n=43) times. Tramadol (n=97) was the only opioid used in the study population. There were only two agents prescribed in the class of SYSADOA. All the vitamin supplements were given in the combination as the multivitamin complex. Among the muscle relaxant, baclofen (n=11) was most commonly prescribed followed by metaxalone (n=2).

Discussion

The management of osteoarthritis is complex and relies on a combination of pharmacological and non-pharmacological approaches including drug treatment, for most of the patients; management of arthritis relies mainly on optimization of pharmacotherapy. Unfortunately, there are many reports of extra medication because of pain. This misuse leads to intoxication and occurrence of adverse drug reactions, hospitalizations, and additional treatment and from there to increase in treatment cost. The treatment options have primarily focused on alleviating the pain associated with this condition.

Present study showed that OA was more prevalent in females than male, similar to the study conducted by Owino BO, et al.[8]. The reasons for this feminine predominance in auto-immune diseases are not clear, though genetic (X-linked) factors and hormonal relation have been attributed.

In the current study majority of the patients belonging to the age group of 31-60 years, concordance with the Mittal, et al.[9] also found that the majority of patients belonged to the same age group.

In our study knee joint was the most commonly affected site in osteoarthritis, our results comparable withthe other studies conducted by Ullal et al.[10] and Jadhav et al.[11].

NSAIDs was the most commonly prescribed drug in the management of osteoarthritis in the present study, in agreement with the Shankar PR, et al.[12].Despite the disturbing statistics of the adverse effects of oral NSAIDs (excluding paracetamol) and their limited disease-modifying efficacy, these drugs were the most preferred.

In our study, among NSAIDs Acetaminophen was the most common prescribed agent for OA, consistent finding reported by Ahmad M, et al.[13] and Richard CM, et al.[14].

EULAR recommends paracetamol (up to 4g/day) as the first-choice oral analgesic agent for the long-term management of knee, hand, and hip OA owing to its GI safety[15].Analgesic efficacy of paracetamol is comparable to that of ibuprofen and naproxen with lesser incidence of ADRs and better tolerability.

Non-drug therapies measures physiotherapy-ultrasonic massage, lifestyle management like exercise, weight reduction in obese individuals was found to have significant improvement in the physical symptoms of OA.

Conclusion

We have concluded that osteoarthritis affects females more often than males, and the knee joint as the most commonly affected joint. NSAIDs were the most common agents used for the treatment of OA. The majority of the patients who received NSAIDs were co-prescribed with gastro protective. There were very few prescriptions of non-drug therapy, such as exercise and physiotherapy. Thus, instead of having multiple drug therapy, one should also guide the patient regarding the non-pharmacological treatment approaches and its benefits.

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