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**RESEARCH ARTICLE****PATTERN OF DRUG PRESCRIBING IN OSTEOARTHRITIS PATIENTS ATTENDING ORTHOPAEDIC OUTPATIENT DEPARTMENT OF A TERTIARY CARE HOSPITAL****Sam Anbu Sahayam J\*, Kulandaiammal M, Prakash M**

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**ABSTRACT**

Arthritis is a disease with acute or chronic inflammation of joint, often accompanied by pain, swelling and stiffness and resulting from infection or injury. Pain is the most common symptom and is accompanied by deformity or disability. There are many types of arthritis, of these osteoarthritis (OA) is a chronic, degenerative disorder of multiple aetiology, characterized by loss of articular cartilage and periarthritis bone remodelling. OA causes joint pain, typically worse with weight bearing and activity, and joint stiffness even at rest. There is no permanent cure, and gradual, although slow progression is most common.

**Keywords:** Osteoarthritis (OA), Tertiary care hospital.**DOI:** <http://dx.doi.org/10.22270/jddt.v6i5.1312>**URI:** <http://jddtonline.info/index.php/jddt/article/view/1312>**INTRODUCTION**

Drug utilization research was defined as the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences<sup>1</sup>.

The primary aim of drug utilization research is to facilitate the rational use of drugs in patients. Drug utilization research in itself does not necessarily provide answers, but it contributes to rational drug use in many ways. It can be used to estimate the numbers of patients exposed to a specific drug within a period of time. This refers to all drug users, regardless of when they started to use the drug, or focus on patients who started to use the drug within the selected period.

It describes the use of drugs at a certain time and in a certain area. Such descriptions are most important when they form part of a continuous evaluation system and when the patterns are followed over a time period and trends in drug use can be discerned. It can be used to estimate whether the drugs are used properly or not. It can also determine various patterns of drug use and the extent to which alternative drugs are being available for a particular illness. This study can be used in the application of quality indicators to patterns of drug utilization.

Regular evaluation of such drug utilization patterns need to be done to enable necessary modifications in drug prescribing to increase the therapeutic benefit and also to reduce the adverse effects. This type of study will help to monitor, evaluate and modify the behavior

of medical practitioners to make medical treatment rational and cost effective.

Arthritis is an acute or chronic inflammation of joint, often accompanied by pain, swelling and stiffness resulting from infection or injury. Pain is the commonest symptom and is associated with bad functional outcomes and poor quality of life. Different kinds of arthritis are, widely spread among the population that make them a clinical problem with social, psychological and economic burden. The management of arthritis 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 overuse of drugs because of pain. This misuse leads to toxicity, 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. Among those, Osteoarthritis is most common type of arthritis.

It is prevalent in older individuals and high rate of disability making it a leading cause of disability<sup>2</sup>. Disease burden is related to pain, leading to functional disability ranging from slight limitation of movements to severe impairment of normal day to day activities. Therefore, pain relief plays an important role in the treatment of Osteoarthritis..

The symptoms of osteoarthritis are mainly due to cartilage destruction and presents with swelling and

pain in the joints even at rest. Patients may not be able to even move freely. The cartilage destruction is evident on X-ray as joint space narrowing manifesting with severe pain as well as limitations in movement and in some cases there will be stiffness of joints too. The symptoms, such as pain and inflammation, become visible in middle age. Obesity also plays a major role and that too knee joints are most affected as it is a weight bearing joint. Because of its prevalence and the frequent disability that accompanies disease in the knee and hip, osteoarthritis accounts for more trouble with climbing stairs and walking. Pain associated with osteoarthritis may be peri-articular in origin rather than intracapsular.

Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used to relieve pain in musculoskeletal tissues, but their long term use leads to gastrointestinal ulceration and complications. NSAIDs have also been applied topically to reduce gastrointestinal adverse reactions by minimizing systemic toxicity<sup>3</sup>

The non-steroidal anti-inflammatory agents (NSAIDs) have become increasingly popular as a second-line therapy. Today, there are a variety of NSAIDs available for prescription. The analgesic effects of the different NSAIDs are more or less identical; however, the Cox II inhibitors are associated with a lower risk for upper gastrointestinal side effects<sup>4</sup>. Thus, the Cox II inhibitors after their introduction become an alternative to traditional NSAIDs in patients exhibiting risk for upper gastrointestinal bleeding and peptic ulcer.

### AIM & Objectives

Aim of this research is to study the recent trends in pattern of drug prescribing in osteoarthritis patients in orthopedic outpatient department.

## MATERIALS AND METHODS

### Study Centre:

Department of Orthopaedics and Traumatology, Govt. Stanley Medical College Hospital, Chennai.

### Study Design:

Prospective, Observational study.

### Study Duration:

2 months.

### Study Population:

It covers prescriptions of patients attending the Orthopedic OPD.

### Sample size:

100 prescriptions of osteoarthritis patients are used.

### Inclusion Criteria:

- (1) Age above 18 years of age.
- (2) Both males & females.
- (3) Patients treated for osteoarthritis that is managed conservatively.
- (4) Patients who are willing to participate in the study.

- (5) Patients treated with oral formulation.
- (6) Patients treated with injectable formulation.
- (7) Patients treated with fixed dose combinations.

### Exclusion Criteria:

- (1) Patients below 18 years of age.
- (2) Patients who are not willing to participate in the study.
- (3) Patients with osteoarthritis with surgical indications.
- (4) Patients with past H/O gastrointestinal diseases.
- (5) Patients with past H/O renal disease.
- (6) Patients with past H/O liver disease.

### Study Procedure

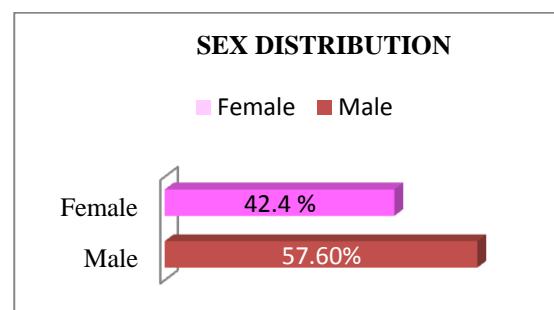
This study was conducted in Department of Orthopaedics and Traumatology, Govt. Stanley Hospital after obtaining approval from the Institutional Ethics Committee. This was a hospital based, Prospective, Observational study reviewing 100 prescriptions of osteoarthritis patients. Patients diagnosed with osteoarthritis were enrolled in the study considering the inclusion and exclusion criteria.

The following parameters were recorded.

- ❖ Age
- ❖ Gender
- ❖ Diagnosis
- ❖ Number of drugs prescribed
- ❖ Type of therapy- monotherapy or combination therapy

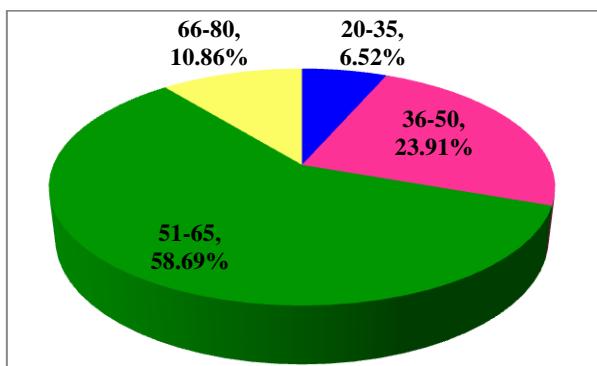
## RESULTS:

### Demographic details:



**Figure 1: Details of Gender distribution of patients**

OA was more common in male patients. Out of 92 patients, 53 (57.6 %) patients were males and 39(42.4 %) patients were females. As shown in figure 1.

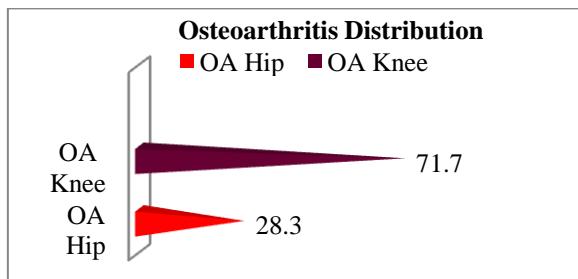


**Figure 2: Age distribution of patients**

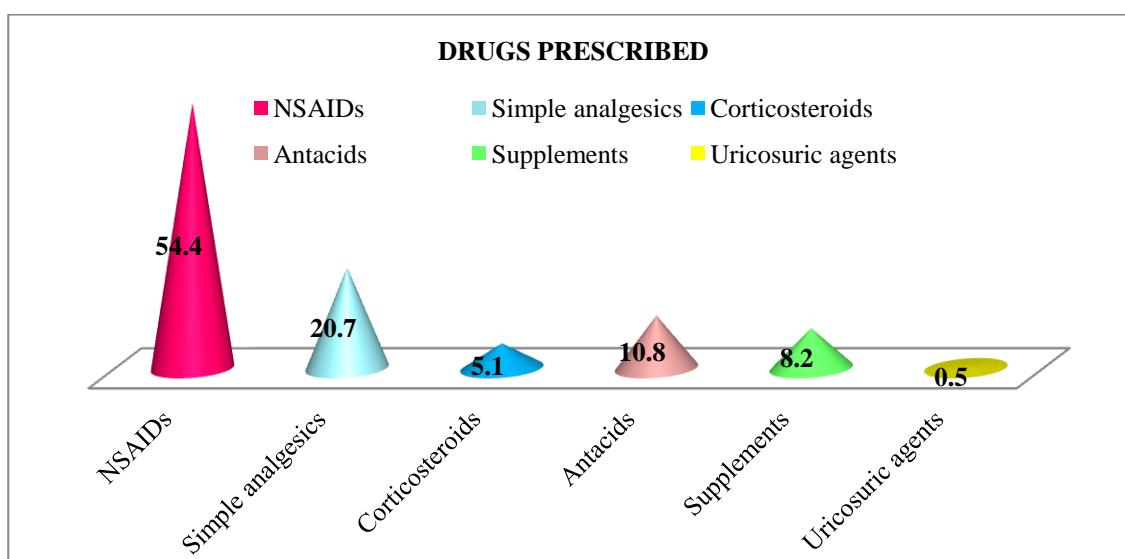
In this study the results revealed that, OA was more prevalent in the age group of 51-65 years [54(58.69%)] as shown in figure 2.

#### Distribution of Osteoarthritis patients:

As shown in figure 3, maximum number of patients had Osteoarthritis is 92 of which 66 (71.7%) patients had OA of knee and 26(28.3%) patients had OA of hip.



**Figure 3: Details of Disease distribution.**



**Figure 4: Details of class of drugs prescribed**

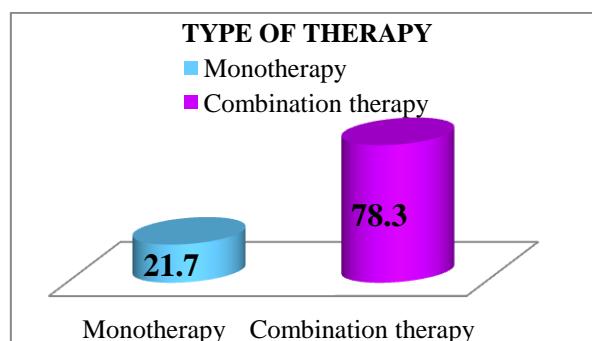
The results revealed that NSAIDs were the choice of drugs prescribed in 105(54.4 %) patients followed by Simple analgesic in 40 (20.7 %) patients and antacids in 21(10.88 %) patients as shown in figure 4.

#### DISCUSSION

Arthritis is an acute or chronic inflammation of joint accompanied by pain, swelling and stiffness resulting either from infection or injury. The management of osteoarthritis is complex and includes the combination of pharmacological and non-pharmacological approaches.

This may lead to toxicity and occurrence of adverse drug reactions, hospitalizations and increase in cost of treatment. All the treatment options have primarily focused on relieving the pain associated with this illness. So periodic evaluation of drug utilization patterns needs to be done at regular intervals to enable suitable modifications in drug prescribing to increase the therapeutic benefit and to reduce the adverse effects. This study of pattern of drug prescribing seeks to monitor, evaluate and modify the prescribing behavior of medical practitioners to make medical treatment to be rational and cost effective.

Drug prescribing studies aim to provide feedback to the prescriber and to create awareness among them about



**Figure 5: Details of therapy**

Monotherapy was 20 patients (21.7%) compared to 72 patients (78.3%) in combination therapy as shown in figure 5.

the rational use of medicines. The results of this study showed that out of 92 patients, 53 (57.60%) patients were males and 39(42.4%) patients were females (vide figure 1).

In this study the results revealed that, OA was more prevalent in the age group of 51-65 years [54(58.69%)] as shown in figure 2. As Shown in figure 3, maximum number of patients had Osteoarthritis is 92 of which 66 (71.7%) patients had OA of knee and 26(28.3%) patients had OA of hip. The results revealed that NSAIDs were the choice of drugs prescribed in 105(54.4 %) patients followed by Simple analgesic in 40 (20.7 %) patients and antacids in

Monotherapy was 20 patients (21.7%) compared to 72 patients (78.3%) in combination therapy as shown in figure 5.

The ACR guidelines suggest the use of simple analgesic like Paracetamol in the relief of mild-to moderate joint pain<sup>5</sup>, but our study reveals that there was a limited use of Paracetamol in the management of OA, instead of that diclofenac was the first preferred drug by the orthopaedicians.

## CONCLUSION

The primary aim of drug utilization study is to facilitate the rational use of drugs which implies the prescription of an appropriate drug at an optimal dose, with correct information and at an affordable price. Without knowing how drugs are being prescribed and used, it is very difficult to assess the rational use of drugs or to suggest measures to improve prescribing pattern.

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