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A study on prescribing patterns in the management of arthritis in the department of orthopaedics

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ABSTRACT

Arthritis is an acute or chronic inflammation of joint, often accompanied by pain, swelling and stiffness and resulting from infection, injury. Pain is the most common symptom and is associated with bad functional outcomes. Different kinds of arthritis are, widely spread among the population that make them a clinical problem. Among those osteoarthritis (OA) is a chronic, degenerative disorder of multifactorial aetiology, characterized by loss of articular cartilage and periarticular bone remodelling. OA causes joint pain, typically worse with weight bearing and activity, and stiffness after inactivity. There is no cure, and gradual, although slow, progression is most common. Whereas, Rheumatoid arthritis (RA) is an autoimmune disorder of unknown etiology characterized by symmetric, erosive synovitis and, in some cases, extraarticular involvement.

Keywords: osteoarthritis (OA), rheumatoid arthritis (RA), Prescription pattern analysis, Tertiary care hospital.

INTRODUCTION

Drug utilization research was defined by WHO in 1977 as the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic consequences.

The principal aim of drug utilization research is to facilitate the rational use of drugs in populations. For the individual patient, the rational use of a drug implies the prescription of a well documented drug at an optimal dose, together with the correct information, at an affordable price. Without knowledge of how drugs are being prescribed and used, it is difficult to initiate

a discussion on rational drug use or to suggest measures to improve prescribing habits. Information on the past performance of prescribers is the linchpin of any auditing system. Drug utilization research in itself does not necessarily provide answers, but it contributes to rational drug use in important ways.

Drug utilization research can increase our understanding of how drugs are being used as follows:

- It can be used to estimate the numbers of patients exposed to specified drugs within a given time period. Such estimates may either refer to all drug users, regardless of when they started to use the drug (prevalence), or focus on patients who started to use the drug within the selected period (incidence).
- It can describe the extent of use at a certain moment and/or in a certain area (e.g. in a country, region, community or hospital). Such descriptions are most meaningful when they form part of a continuous evaluation system, i.e. when the patterns are followed over time and trends in drug use can be discerned.
- Researchers can estimate (e.g. on the basis of epidemiological data on a disease) to what extent drugs are properly used, overused or underused.
- It can determine the pattern or profile of drug use and the extent to which alternative drugs are being used to treat particular conditions.
- It can be used to compare the observed patterns of drug use for the treatment of a certain disease with current recommendations or guidelines.
- It can be used in the application of quality indicators to patterns of drug utilization.¹

Periodic evaluation of drug utilization patterns need to be done to enable suitable Modifications in prescription of drugs to increase the therapeutic benefit and decrease the adverse effects. The study of prescribing patterns seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing behaviour of medical practitioners to make medical care rational and cost effective. Drug prescribing studies aim to provide feedback to the prescriber and to create awareness among them about rational use of medicines.²

The term arthritis literally means “joint inflammation,” but it is generally used to refer to a family of more than 100 different conditions that affect the joints and may also affect muscles and other tissues. The most common form of arthritis—degenerative arthritis or osteoarthritis—results from the breakdown of the tissue inside the joints. It affects more than 20 million people in the U.S. The other form inflammatory arthritis—results from swelling in the joints. Rheumatoid arthritis is a common type of inflammatory arthritis.³

Arthritis is an acute or chronic inflammation of joint, often accompanied by pain, swelling and stiffness and resulting from infection, injury. Pain is the most common 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 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.⁴

Among those, Osteoarthritis is most common type of arthritis. Its high prevalence especially in elder patients and high rate of disability make it a leading cause of disability. Where as Rheumatoid arthritis is a chronic multisystem disease of unknown cause. The characteristic feature of RA is persistent inflammatory synovitis.⁵

Osteoarthritis (OA) is widely known as the most frequent musculoskeletal disorder, mainly occurring in the elderly with a radiographic prevalence of nearly 70% in persons over age 65. Disease burden is related to pain occurrence, frequently leading to functional disability ranging from slight limitation of movements to severe impairment of normal daily living activities. Therefore, pain relief plays an important role in the treatment of OA⁶

The prevalence of osteoarthritis in India is very high. Osteoarthritis is a disease in which the cartilage that acts as a cushion between bones in joints begins to exhaust, causing swelling and pain in joints which affect negatively. Person does not move freely. The other synonym of Osteoarthritis is degenerative arthritis or degenerative joint disease. It is common since ancient time. When a person suffers from osteoarthritis, there is a breakdown of the joint's cartilage. When this breakdown and wears away the bones will start rubbing together and this can cause some severe pain as well as limitations in movement and in some cases, person cannot move at all. Numerous factors are responsible for the inception of osteoarthritis. It is widespread in middle to older aged people. Osteoarthritis may first appear without symptoms between 20 and 30 years of age. The symptoms, such as pain and inflammation, become visible in middle age. Till the age of 55 it occurs equally in both sexes. But after 55, women are more prone to this disease. Many studies have demonstrated that age is not a foremost factor to the start of Osteoarthritis. Many medical professionals have found that overweight may be the reason of having this disease. When a person is obese, there are more chances of experiencing some pain in the knees and in most cases; osteoarthritis develops in these areas.⁷

Osteoarthritis is the most common form of arthritis. Among U.S. adults 30 years of age or older, symptomatic disease in the knee occurs in approximately 6% and symptomatic hip osteoarthritis in roughly 3%. Since osteoarthritis is a disease whose prevalence increases with age, it will become even more prevalent in the future as the bulging cohort of baby boomers grows older. 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 than any other disease. Osteoarthritis is the most common reason for total hip and total knee replacement.⁸

OA is the most prevalent of the rheumatic diseases, and is responsible for enormous disability and loss of productivity. Prevalence increases with age, and radiographic data show that OA at some skeletal site occurs in the majority of people over 65 years of age and in nearly everyone over 75 years of age. Despite intense epidemiologic study, the exact prevalence of OA is unknown, owing to the uncertainties and variations of diagnostic definition and reporting mechanisms. Another confounder is that many patients with radio graphically apparent OA do not have symptoms that lead them to medical care. Based on prevalence data from the National Centres for Health Statistics, an estimated 15.8 million adults, or 12% of those between 25 and 74 years of age, have signs and symptoms of OA.⁴ The prevalence of OA increases with age. In

those under age 45, about one-fifth have OA of the hands, while for those aged 75 to 79 years, 85% have OA of the hands. OA of the knee occurs in less than 0.1% of those aged 25 to 34 years, but in 10% to 20% of those aged 65 to 74 years. The overall incidence of hip or knee OA is approximately 200 per 100,000 person-years. The incidence of hip OA is greater in women than in men, whereas the rate for knee OA is similar between genders. In men, rates of knee and hip OA increase with age, but in women rates remain stable. Based on these population data, one-half million symptomatic cases of idiopathic OA are estimated to occur annually in the U.S. white population.⁹

Rheumatoid arthritis (RA) is a devastating inflammatory arthritis affecting up to 1% of the developed world. Without aggressive, early medical treatment with disease-modifying anti-rheumatic drug (DMARDs), severe damage can occur. However, many patients do not end up in this trajectory early enough to benefit maximally from rheumatology care. Recent analysis of Quebec administrative data revealed that of all new-onset or suspected RA cases in the year 2000, only a small proportion (just over one quarter) were referred to relevant specialists. Furthermore, rheumatology referral was delayed especially in patients of older age, lower socioeconomic status, and low proximity to specialty care.¹⁰

Information on rheumatoid arthritis (RA) among Arab populations in the Middle East is very scarce. Studies have suggested that patients with RA living in Arab countries have similar clinical features but less extra articular manifestations, compared to Western countries. These studies were mainly descriptive and noted a general lack of extra articular features and a trend towards being less destructive and erosive compared to disease patterns observed in the west. However, there is a paucity of information regarding disease activity, treatment, and outcomes. Obviously, such information is critical for decision making in health care. Our Centre has had preliminary data showing that patients with RA in the United Arab Emirates (UAE) have active disease, delayed diagnosis, and low DMARD utilization.¹¹

Little is known about the current disease-modifying antirheumatic drug (DMARD) preferences of British rheumatologists. Sulphasalazine was the agent of first choice for British rheumatologists in a previous UK survey, but currently methotrexate is widely regarded as the standard against which other DMARDs should be compared. Several recent surveys, from North America, have shown that combinations of DMARDs are preferred in contemporary practice. Since DMARDs are now used earlier in disease and with the availability of several new DMARDs recently, we set out to investigate current prescribing preferences in the UK. Our motive in doing so was a need to inform and develop an economic model for the treatments of rheumatoid arthritis.¹²

Osteoarthritis represents a major disease burden for elderly patients, health services, and society. Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used to relieve pain in musculoskeletal tissues, but their use comes at the cost of toxicity, with a 2-4% annual incidence of serious gastrointestinal ulcer and complications—four times higher than in non-users. NSAIDs have been applied topically for decades. This route possibly reduces gastrointestinal adverse reactions by maximizing local delivery and minimizing systemic toxicity. Some experimental evidence supports this, but at large joints such as the knee, blood borne delivery may be the predominant mechanism for deep tissues. Pain associated with osteoarthritis may be

peri-articular in origin rather than intracapsular and topical application may act through effects on peripheral and central sensitisation.¹³

Musculoskeletal pain is one of the most common complaints seen by primary care physicians. Pain therapy consists of non-pharmacological and pharmacological parts. 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: traditional non-selective (NSAIDs), and the more selective COX-2 inhibitors (Coxibs). The analgesic effects of the different NSAIDs are more or less identical; however, the Coxibs are associated with a lower risk for upper gastrointestinal side effects. Thus, the Coxibs after their introduction become an alternative to traditional NSAIDs in patients exhibiting risk for upper gastrointestinal bleeding. The national pain guidelines provided by the Swedish Council on Technology Assessment in Health Care supports prescription of Coxibs as a cost-effective option in patients with a gastrointestinal risk. There is still a need for individual analysis regarding the risk of side effects including not only the upper but the entire gastrointestinal tract and the cardiovascular system. The long-term use of NSAIDs warrants, however, an in-depth analysis of benefit vs. risk on an individual basis.¹⁴

A Study by Wolfe *et al.* has shown that rheumatoid arthritis (RA) is associated with substantial long-term morbidity, mortality and healthcare costs. Disease-modifying anti-rheumatic drugs (DMARDs) control disease activity, reduce joint erosions and improve quality of life as well as reduce cardiovascular morbidity associated with RA such as ischemic heart disease. In recent years, there has been a change towards early and more dynamic treatment of RA. Early diagnosis of RA prompted the use of DMARDs in higher doses and often in combination therapy to control the disease activity.¹⁵

The prevalence of chronic disease in modern industrialized nations is increasing, and among these intractable conditions rheumatoid arthritis stands out as a major cause of multiple medical problems. An estimated 1-3% of the population is affected by this disease, while about two-thirds of cases suffer significant social and economic disadvantages.¹⁶

Objectives

The present study of prescribing pattern in the management of Arthritis was carried out in the Department of Orthopaedics at Basaveshwar Teaching and General Hospital (BTGH), Gulbarga with the following objectives

Objective of the study:

- To Study the current trend of prescribing patterns of the drugs used in the management of arthritis at study site.
- To obtain the information on demographic characteristics of the patient selected for analysis
- Collect information on the diagnosis, number of drugs prescribed.
- Analyze the prescriptions for diagnosis, name, dose and duration of prescribed drugs.
- To analyze the type of therapy - Mono therapy or combination therapy.

MATERIALS AND METHODS

Study Site

The study was conducted in the Department of Orthopaedics at Basaveshwar teaching and general hospital (BTGH), Gulbarga.

Study design

It was a prospective observational study.

Study period

The study was conducted for a period of nine months.

Source of data

Data was collected from

1. Case sheets of Inpatients visiting the Department of Orthopaedics.
2. OPD cards of the Outpatients.

Study criteria

Inclusion criteria

1. Arthritis patients at orthopaedic Department at Basaveshwar Teaching and General Hospital, Gulbarga.
2. Patients who are willing to participate in the study.
3. Patients currently diagnosed with arthritis with or without co-morbidities.
4. Patients above the 18 years of age of either sex.

Exclusion criteria

1. Patients who are not willing to participate in the study.
2. Patients below 18 years of age.

Study procedure

Study was conducted in the orthopaedic Department of Basaveshwar teaching and general Hospital. Patients diagnosed with arthritis with or without co-morbidities were enrolled in the study considering the inclusion and exclusion criteria. Informed consent was taken from patient at the time of enrolment in to the study. The prescriptions of patients were analyzed by the following parameters in a specially designed data collection forms.

1. Demographic data of the Patient.
2. Category of the drugs used in the treatment.
3. Type of therapy - Mono therapy or combination therapy.

Ethical Committee Approval

Institutional Ethical Committee Clearance was obtained from M.R Medical College, Gulbarga.

RESULTS

Demographic details

Table 1: Details of Gender distribution of patients.

Gender distribution	Number of Patients	Percentage (%)
Male	53	57.60
Female	39	42.31
Total	92	100

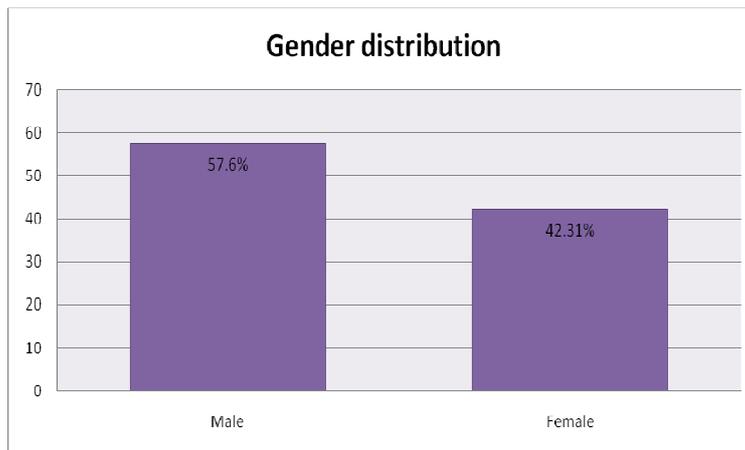


Figure 01: Details of Gender distribution of patients.

Table 1.1: Details of Gender distribution in Osteoarthritis patients

Gender distribution	Number of Patients	Percentage (%)
Male	49	65.33
Female	26	34.66
Total	75	100

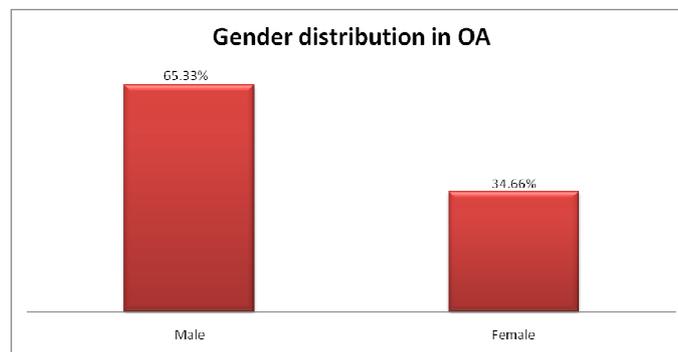


Figure 02 : Details of gender distribution in Osteoarthritis patients.

Table 1.2: Details of Gender distribution in Rheumatoid arthritis patients

Gender distribution	Number of Patients	Percentage (%)
Male	2	13.33
Female	13	86.66
Total	15	100

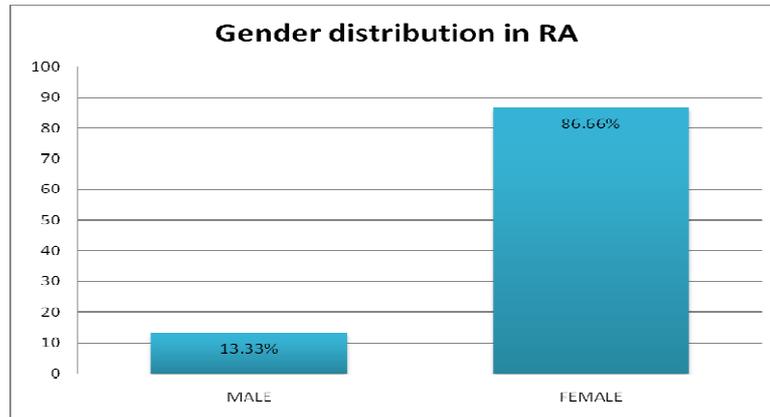


Figure 03: Details of gender distribution in Rheumatoid arthritis patients.

Table 2: Details of Age distribution of patients.

Age distribution (years)	Number of patients	Percentage (%)
20-35	06	6.52
36-50	22	23.91
51-65	54	58.69
66-80	10	10.86
Total	92	100

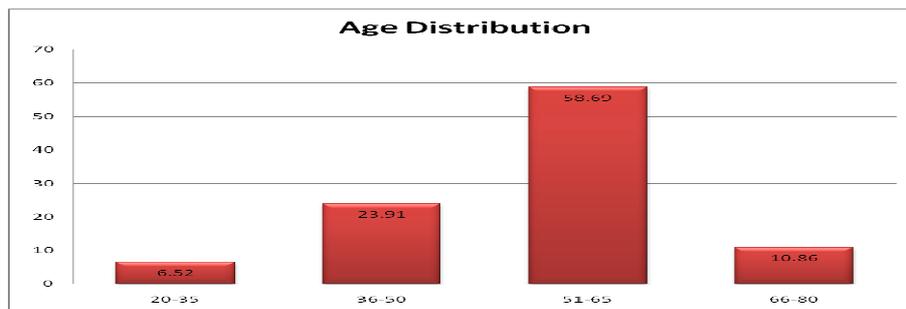


Figure 04 : Details of Age distribution of patients.

Table 2.1: Details of Age distribution of Osteoarthritis patients.

Age distribution (years)	Number of patients	Percentage (%)
20-35	03	4.0
36-50	17	22.66
51-65	45	60.0
66-80	10	13.33
Total	75	100

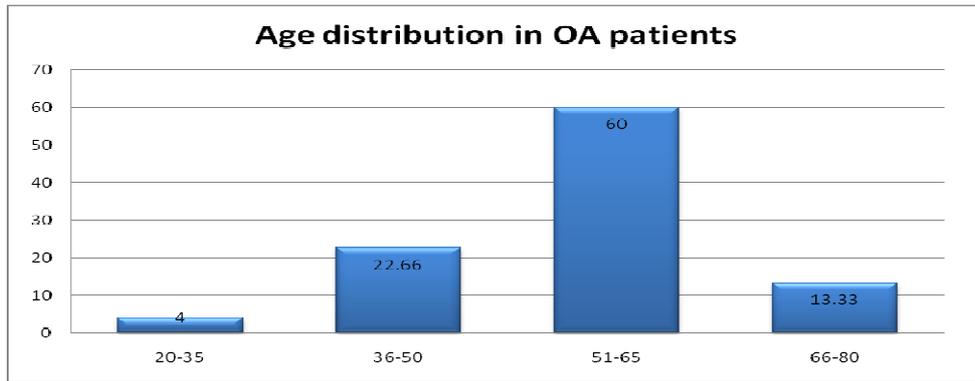


Figure 05 : Details of Age distribution in osteoarthritis patients

Table 2.2: Details of Age distribution of Rheumatoid arthritis patients.

Age distribution (years)	Number of patients	Percentage (%)
20-35	02	13.33
36-50	05	33.33
51-65	08	53.33
66-80	-	-
Total	15	100

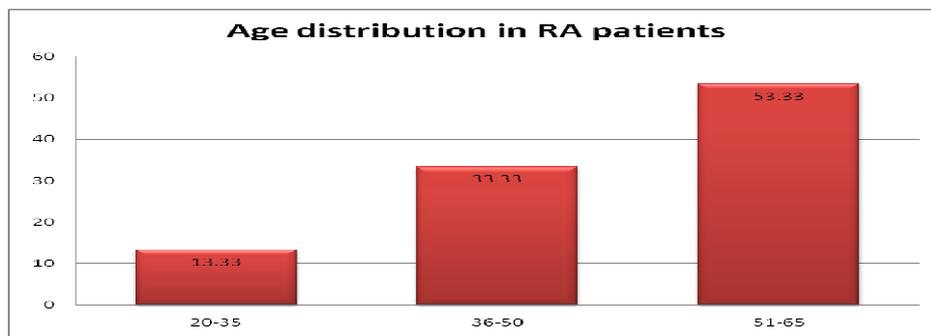


Figure 06: Details of Age distribution in Rheumatoid arthritis patients

Table 3: Details of Drugs prescribed

Drug name	Number of prescriptions	Percentage (%)
Diclofenac	72	37.30
Aceclofenac	09	4.66
Nimesulide	15	7.77
Tramadol	16	8.29
Ibuprofen	02	1.03
Etoricoxib	06	3.10
Paracetamol	40	20.72
Prednisolone	07	3.62
Deflazacort	03	1.55
Indomethacin	01	0.51
Hydroxychloroquine	13	6.73
Methotrexate	08	4.14
Colchicine	01	0.51
Total	193	100

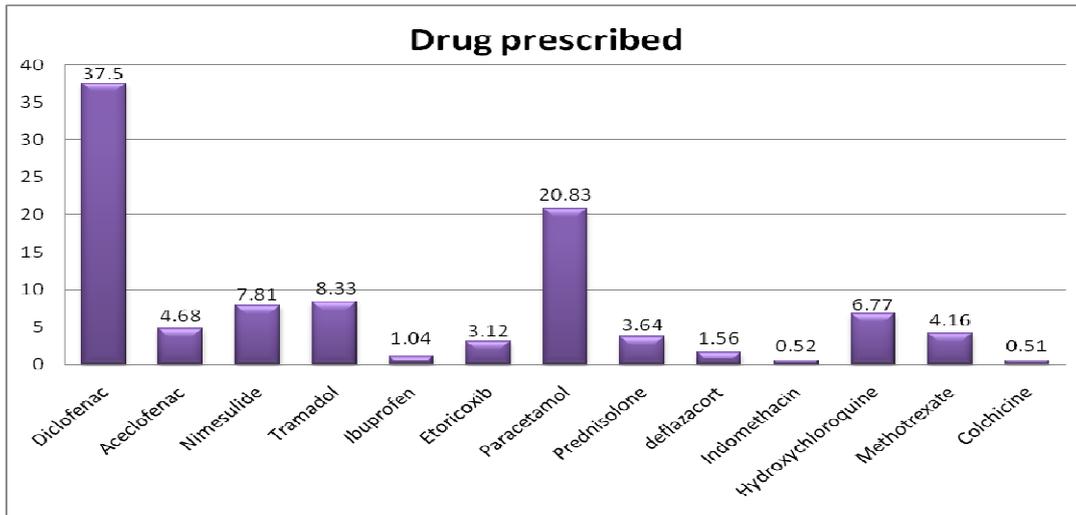


Figure 07 : Details of drug prescribed

Table 3.1: Details of Drug prescribed in Osteoarthritis patients.

Drug name	Number of prescriptions	Percentage (%)
Diclofenac	63	43.15
Aceclofenac	08	5.47
Nimesulide	12	8.21
Tramadol	09	6.16
Ibuprofen	02	1.36
Etoricoxib	06	4.1
Paracetamol	38	25.02
Prednisolone	05	3.42
Deflazacort	02	1.36
Indomethacin	01	0.68
Total	146	100

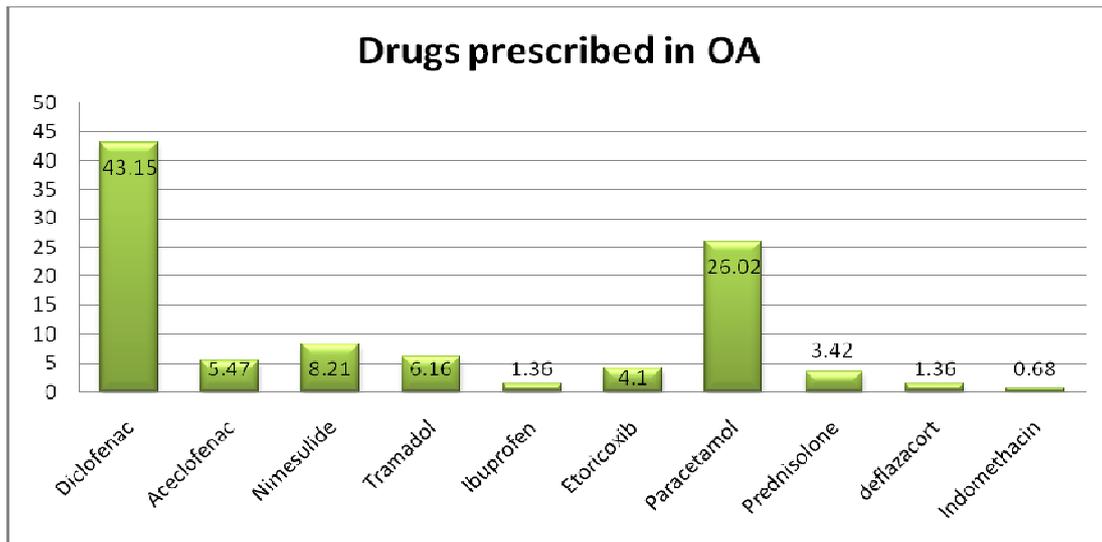


Figure 08 : Details of drug prescribed in Osteoarthritis

Table 3.2: Details of Drug prescribed in Rheumatoid arthritis patients

Drug name	Number of prescriptions	Percentage (%)
Hydroxychloroquine	13	30.23
Methotrexate	08	18.60
Nimesulide	03	6.97
Tramadol	06	13.95
Diclofenac	08	18.60
Triamcinolone	01	2.32
Paracetamol	01	2.32
Prednisolone	02	4.65
Deflazacort	01	2.32
Total	43	100

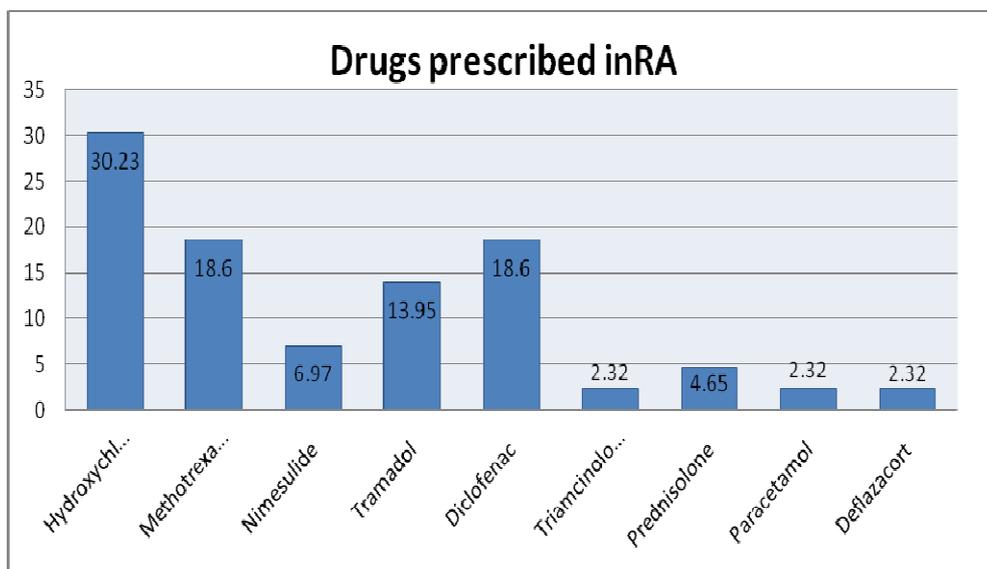


Figure 09 : Details of Drugs prescribed in Rheumatoid arthritis.

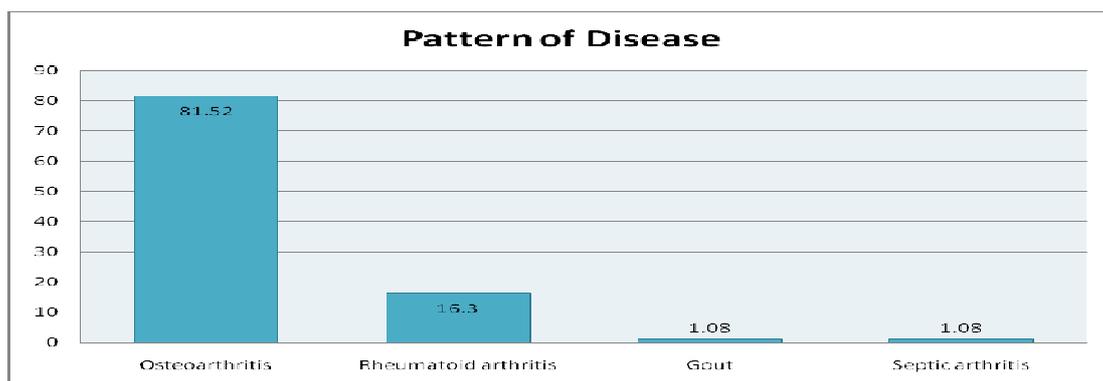


Figure 10 : Details of Disease distribution.

Table 4: Details of Disease distribution

Disease name	Number of patients	Percentage (%)
Osteoarthritis	75	81.52
Rheumatoid arthritis	15	16.30
Gouty arthritis	01	1.08
Septic arthritis	01	1.08
Total	92	100

Table 4.1: Details of Disease distribution in Osteoarthritis patients

Disease name	Number of patients	Percentage (%)
Osteoarthritis of knee	66	88
Osteoarthritis of hip	09	12
Total	75	100

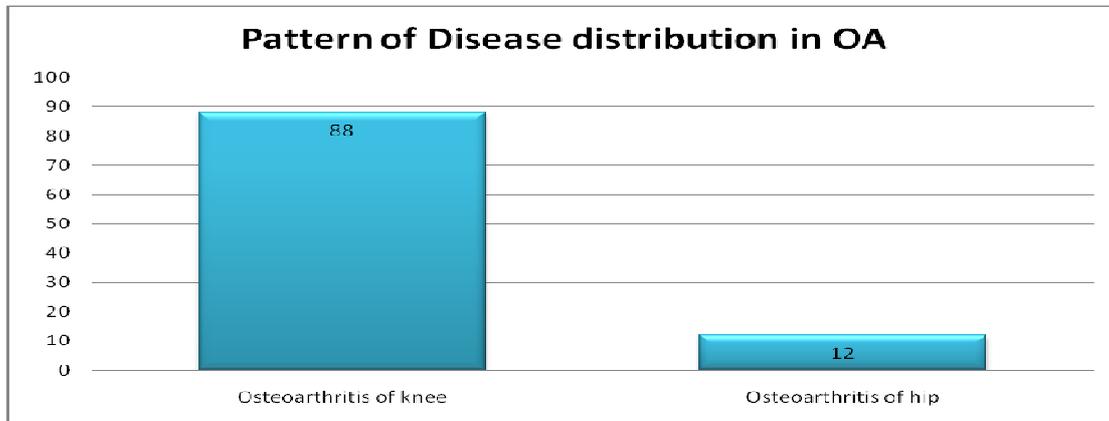


Figure 11: Details of Disease distribution in OA.

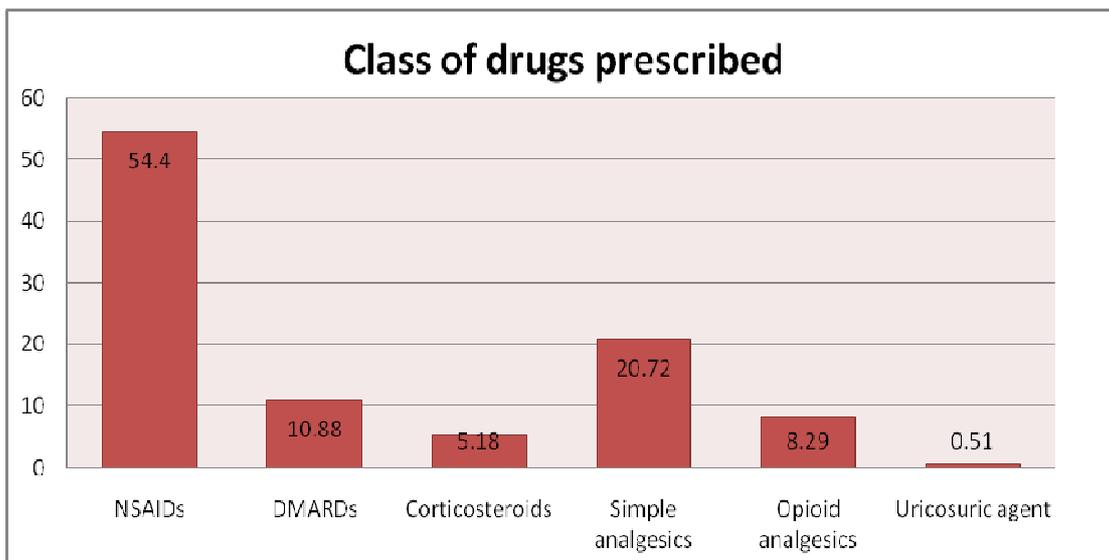


Figure 12: Details of class of drugs prescribed.

Table 5: Class of Drugs prescribed

Class of Drugs	Number of Drugs prescribed	Percentage (%)
NSAIDs	105	54.40
Simple Analgesics	40	20.72
Corticosteroids	10	5.18
DMARDs	21	10.88
Opiod analgesics	16	8.29
Uricosuric agent	01	0.51
Total	193	100

Table 6: Details of Route of administration

Route	Number of prescriptions	Percentage (%)
Oral	155	72.09
Topical	50	23.25
Injectable	10	4.65
Total	215	100

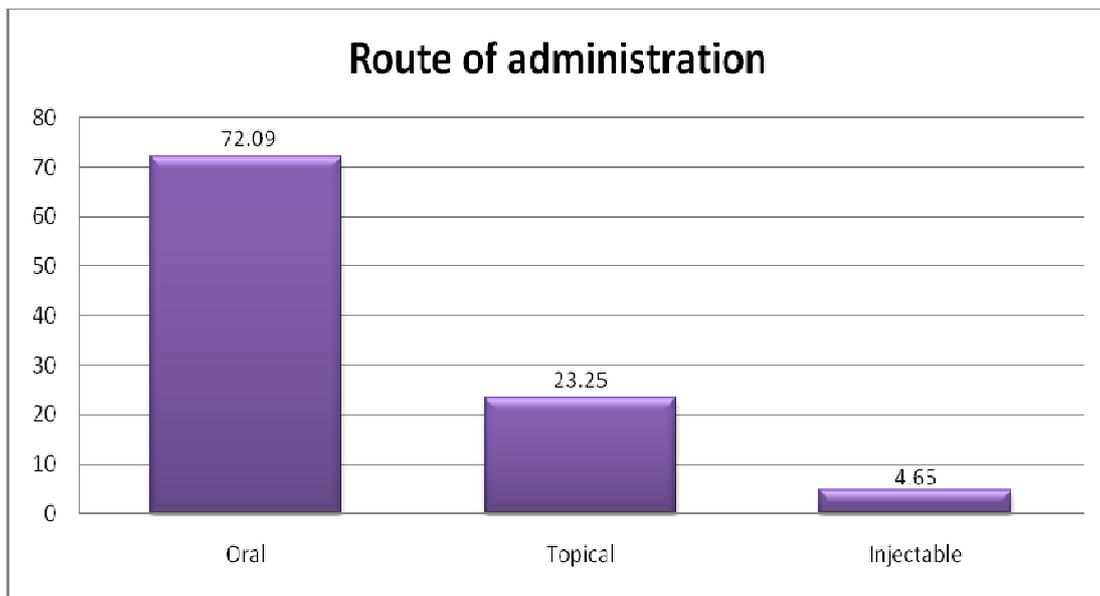


Figure 13: Details of Route of administration

Table 7: Details of approach of management of Arthritis.

Therapy	Number of patients	Percentage (%)
Monotherapy	20	21.73
Combination therapy	72	78.26
Total	92	100

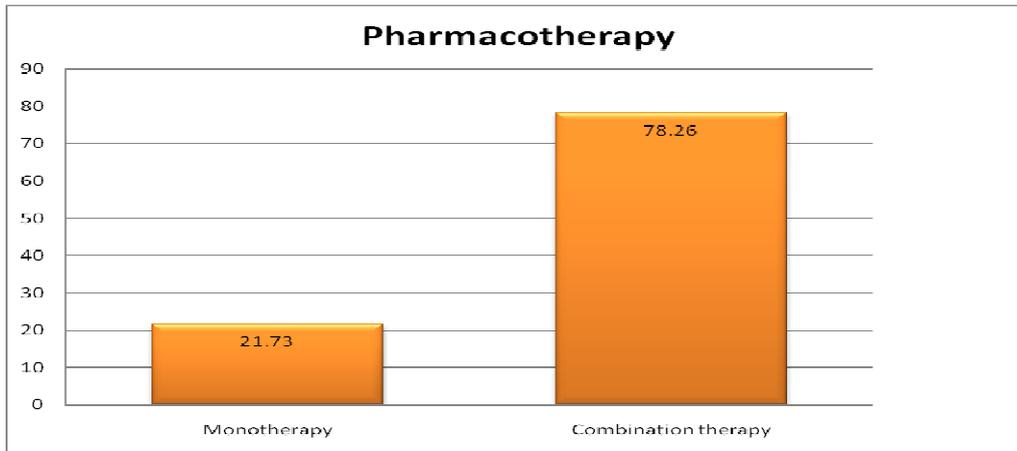


Figure14 : Details of approach to treatment

Table 7.1: Details of class of drugs used in Monotherapy

Monotherapy	Number of patients	Percentage (%)
COX -2 Inhibitor (Diclofenac)	20	100
Total	20	100

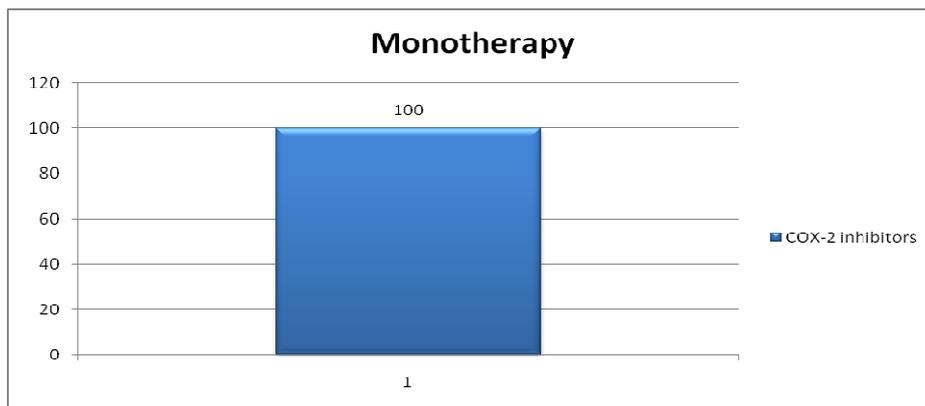


Figure 15: Details of drugs used in Monotherapy

Table 7.2: Details of approach of treatment of patients with Combination therapy

Combination therapy	Number of patients	Percentage (%)
2 Drug	42	58.33
3 Drug	29	40.27
More than 3	01	1.38
Total	72	100

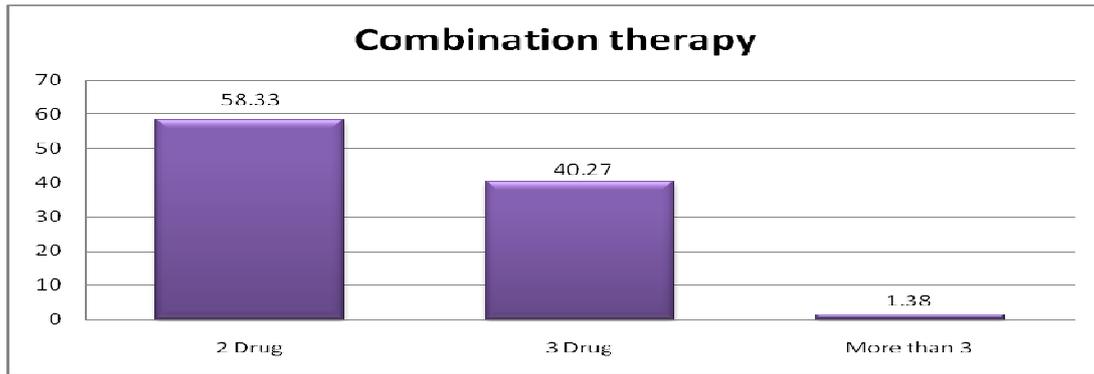


Figure 16: Details of approach of treatment of patients with Combination therapy

Table 7.3: Details of different classes of drugs used in 2 Drug Therapy

2 Drug	Number of patients	Percentage (%)
NSAIDs + Analgesic	27	65.11
DMARD + NSAIDs	02	4.65
NSAIDs + Steroid	02	4.65
NSAIDs + NSAIDs	05	11.62
NSAIDs + Opioid analgesic	40	9.30
Corticosteroid + Analgesic	01	2.32
Opioid analgesic + Analgesic	01	2.32
Total	42	100

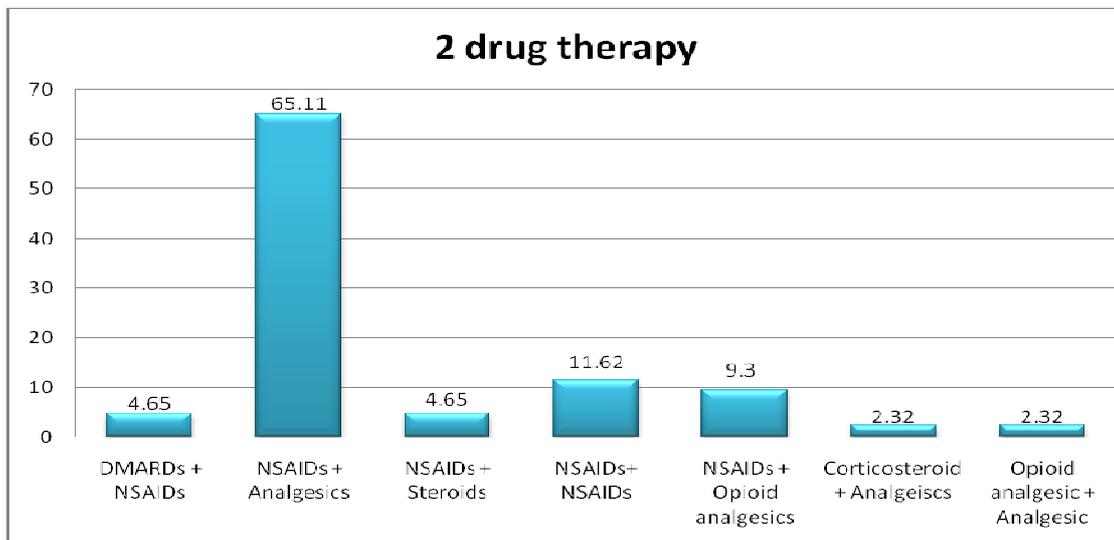


Figure 17: Details of different classes of drugs used in 2 Drug Therapy

Table 7.4: Details of different drugs used in 2 Drug therapy

2 Drug therapy	Number of patients	Percentage
DMARDs + NSAID		
Methotrexate + Nimesulide	01	2.32
Hydroxychloroquine + Diclofenac	01	2.32
NSAIDs + Analgesic		
Diclofenac + Paracetamol	16	37.20
Etorcoxib + Diclofenac	02	4.65
Nimesulide + Paracetamol	05	11.62
Aceclofenac + Paracetamol	05	11.62
Opioid analgesic + NSAIDs		
Tramadol + Diclofenac	04	9.30
NSAIDs + Steroid		
Diclofenac + Deflazacort	01	2.32
Prednisolone + Diclofenac	01	2.32
Prednisolone + Diclofenac	01	2.32
Opioid analgesic + Analgesic		
Tramadol + Paracetamol	01	2.32
NSAIDs + NSAIDs		
Nimesulide + Diclofenac	03	6.97
Ibuprofen + Diclofenac	01	2.32
Corticosteroid + Analgesic		
Prednisolone + Paracetamol	01	2.32
Total	43	100

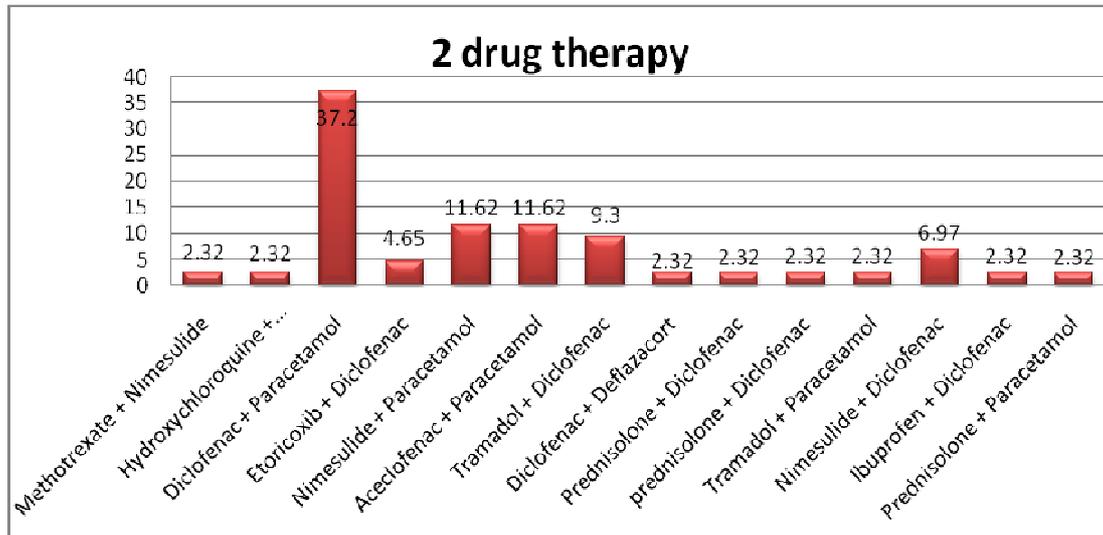


Figure18: Details of different drugs used in the 2 Drug therapy.

Table 7.5: Details of different classes of drugs used in 3 Drug therapy

3 Drug therapy	Number of patients	Percentage (%)
Uricosuric agent + NSAID + Opioid analgesic	01	3.44
DMARDs + NSAID	05	17.24
DMARD + NSAID + Opioid analgesic	02	6.89
DMARDs +Corticosteroids + Opioid analgesic	03	10.34
DMARDs + Opioid analgesics	01	3.44
DMARDs + Analgesics	01	3.44
DMARDs + Corticosteroids + NSAIDs	01	3.44
Corticosteroid + Analgesic + NSAIDs	01	3.44
NSAIDs + Analgesic	10	34.48
NSAIDs + Corticosteroid + Opioid analgesic	02	6.89
NSAIDs + Corticosteroid	01	3.44
NSAIDs + Opioid analgesics + Analgesic	01	3.44
Total	29	100

Table 7.6: Details of different drugs used in 3 Drug therapy

3 Drug therapy	Number of patients	Percentage
Uricosuric agent + NSAIDs + Opioids		
Colchicine + Aceclofenac + Tramadol	01	3.44
DMARDs + NSAIDs		
Hydroxychloroquine + Methotrexate + Diclofenac	04	13.79
Hydroxychloroquine + Diclofenac + Nimesulide	01	3.44
DMARDs + Opioids + NSAIDs		
Hydroxychloroquine + Diclofenac + Tramadol	01	3.44
Hydroxychloroquine + Tramadol + Nimesulide	01	3.44
DMARDs + Steroids + Opioids		
Hydroxychloroquine + Tramadol + Prednisolone	01	3.44
Hydroxychloroquine + Tramadol + Deflazacort	01	3.44
Hydroxychloroquine + Tramadol + Triamcinolone	01	3.44
DMARDs + Opioids		
Hydroxychloroquine + Methotrexate + Tramadol	01	3.44
DMARDs + Analgesics		
Hydroxychloroquine + Methotrexate + Paracetamol	01	3.44
DMARDs + Steroids + NSAIDs		
Methotrexate + Prednisolone + Diclofenac	01	3.44
NSAIDs + Steroids + Analgesics		
Diclofenac + Paracetamol + Deflazacort	01	3.44
NSAIDs + Analgesics		
Etoricoxib + Diclofenac + Paracetamol	03	10.34
Aceclofenac + Diclofenac + Paracetamol	03	10.34
Diclofenac + Nimesulide + Paracetamol	04	13.79
NSAIDs + Steroid + Opioids		
Diclofenac + Prednisolone + Tramadol	02	6.89
NSAIDs +Steroids		
Ibuprofen + Diclofenac + Prednisolone	01	3.44
NSAIDs + Opioids + Analgesics		
Etoricoxib + Tramadol + Paracetamol	01	3.44
Total	29	100

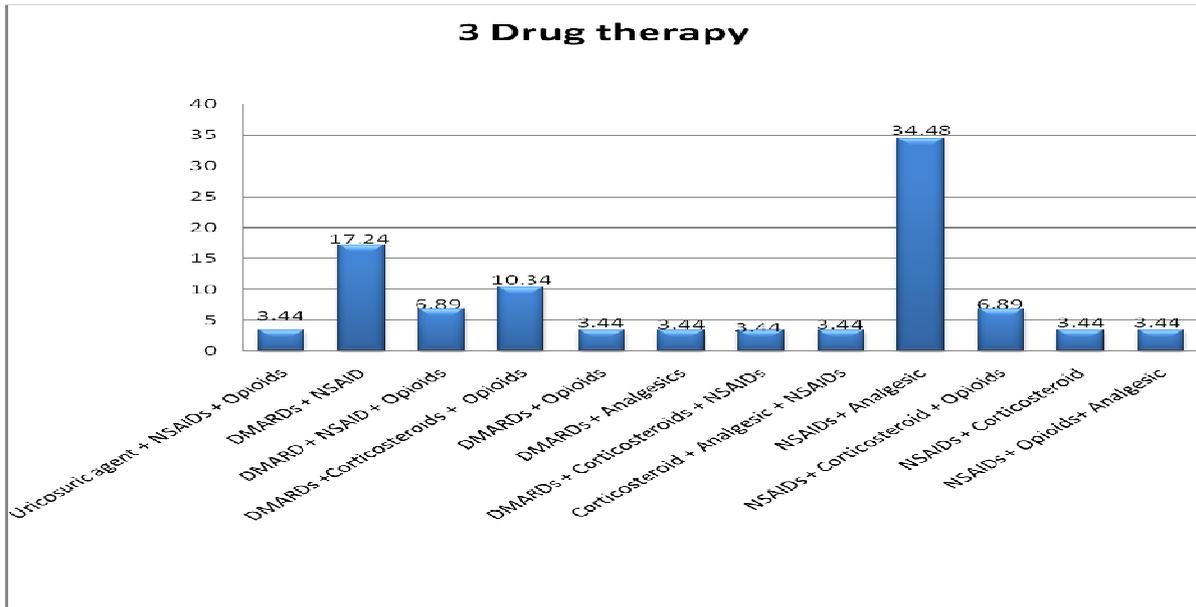


Figure 19: Details of different class of drugs used in 3 drug therapy.

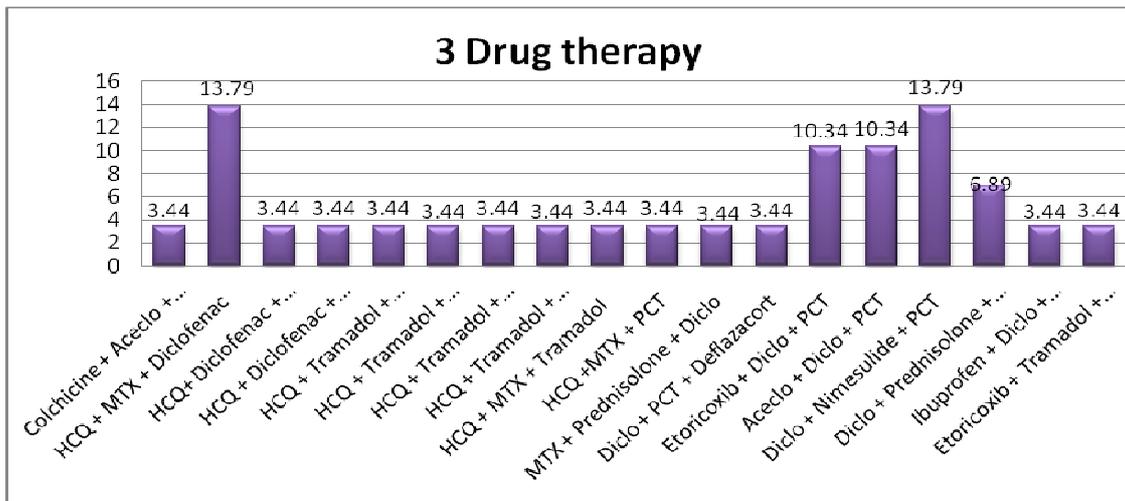


Figure 20: Details of the different drugs used in the 3 Drug therapy.

Table 7.7: Details of different classes of drugs used in more than 3 Drugs therapy.

Drug Combination	Number of Prescriptions	Percentage (%)
NSAIDs + Opioids + Analgesic	01	100
Total	01	100

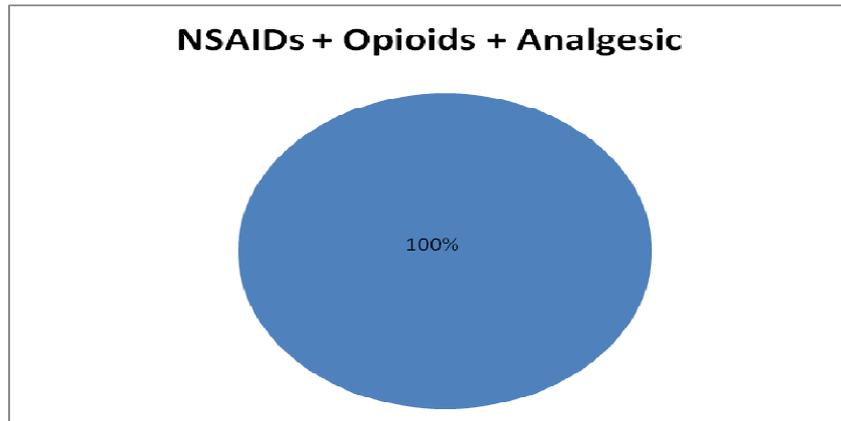


Figure 21: Details of different classes of drugs used in more than 3 Drugs

Table 7.8: Details of different drugs used in more than 3 drug therapy

Drug Combination	Number of Prescriptions	Percentage (%)
NSAIDs + Opioids + Analgesic	01	100
Diclofenac + Indomethacin + Tramadol + Paracetamol		
Total	01	100

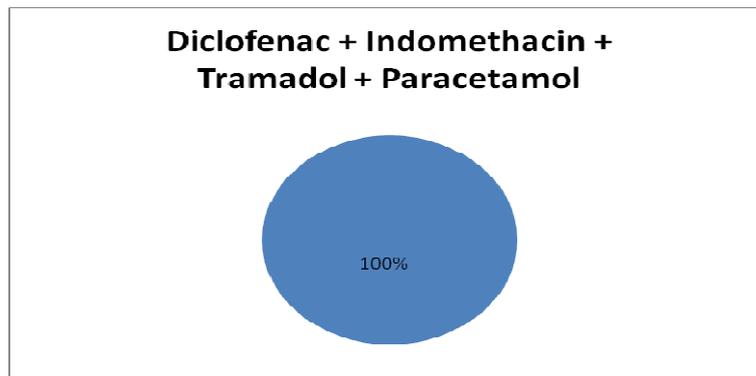


Figure 22: Details of different drugs used in more than 3 Drugs therapy.

DISCUSSION

Demographic profile

Gender

OA was more common in male patients whereas, RA was commonly seen in female patients. Out of 92 patients, 53 (57.60%) patients were males and 39(42.31%) patients were females. As shown in table no.1.

Age

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

Overall drug usage

Table 3 shows the overall drug usage in the study. The results revealed that a total of 193 drugs were prescribed. Out of which, Diclofenac was most prescribed [72(37.30%)] followed by Paracetamol in [40(20.72%)], the results also revealed that Hydroxychloroquine was most prescribed followed by Methotrexate in RA.

Disease distribution

As Shown in table 4 maximum number of patients had Osteoarthritis [75(81.52%)], of which 66 (88%) patients had OA of knee and 9(12%) patients had OA of hip. Followed by 15(16.30%) patients with Rheumatoid arthritis, 1(1.08%) patient with Gout and 1(1.08%) patient with Septic arthritis.

Class of drugs

The results revealed that NSAIDs were the choice of drugs prescribed in 105(54.40%) patients followed by Simple analgesic in 40(20.72%) patients and DMARDs in 21(10.88%) patients as shown in table 5.

Routes of administration

It was observed in the study that 155(72.09%) drugs were prescribed by oral route, followed by 50(23.25%) drugs topically and 10(4.65%) drugs as Injectable. As shown in table 6.

Treatment

During the study more number of patients were treated with combination therapy [72(78.26%)] followed by monotherapy [20(21.73%)]. As shown in table 7.0

- In monotherapy the result showed that 100% prescriptions were belonged to Diclofenac. As in table 7.1. Whereas in Combination therapy more number of patients were treated with 2 drug therapy [42(58.33%)] followed by 29(40.27%) patients with 3 drug therapy and 1(1.38%) patients were treated with more than 3 drugs therapy. The details of approach of treatment of patients with combination therapy were shown in the table 7.2.
- In two drug therapy Out of 42 patients 28(65.11%) patients were prescribed with a combination of NSAIDs + Analgesic, followed by other drug combinations. As shown in table 7.3. The data obtained with regard to the 2 drug therapy was further analyzed to determine the preferred choice of drug. The results of the analysis are shown in the table 7.4. The results revealed that, out of 28(65.11%) patients who were treated with NSAIDs + Analgesic, the combination of Diclofenac + PCT was used in 16(37.20%) patients.
- The results revealed that out of 29 patients treated with 3 drug therapy, 10(34.48%) patients were treated with NSAIDs + Analgesics , followed by other drug combinations as shown in table 7.5.
- Further analysis of the data of the 3 drug therapy is shown in the table 7.6. The results showed that among the 10(34.48%) Prescriptions of NSAIDs+ Analgesic out of that Diclofenac + Nimesulide + Paracetamol were prescribed in maximum number of patients 04 (13.79%).
- Results of the more than 3 drugs therapy are shown in the table 7.7. The results showed that 1(100%) patients was prescribed with NSAIDs + Opioids + Analgesic with this combination of drugs Diclofenac + Indomethacin + Tramadol + Paracetamol

DISCUSSION

Arthritis is an acute or chronic inflammation of joint, often accompanied by pain, swelling and stiffness and resulting from infection, injury. Pain is the most common 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 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.

Periodic evaluation of drug utilization patterns need to be done to enable suitable Modifications in prescription of drugs to increase the therapeutic benefit and decrease the adverse effects. The study of prescribing patterns seeks to monitor, evaluate and if necessary, suggest modifications in the prescribing behaviour of medical practitioners to make medical care rational and cost effective. Drug prescribing studies aim to provide feedback to the prescriber and to create awareness among them about rational use of medicines.

Little is known about the current disease-modifying antirheumatic drug (DMARD) preferences. Sulphasalazine was the agent of first choice, but currently methotrexate is widely regarded as the standard against which other DMARDs should be compared. Several recent surveys have shown that combinations of DMARDs are preferred.

The results showed that out of 92 patients, 53 (57.60%) patients were males and 39(42.31%) patients were females. Whereas, the gender distribution in OA patients shows that out of 75 patients, 49(65.33%) patients were males and 26(34.66%) patients were females. Whereas the gender distribution of RA patients shows that out of 15 patients, 13(86.66%) patients were females and 2(13.33%) patients were male.

The present study also revealed that arthritis is most common in the age group of 51-65 years. Whereas OA & RA was most common in similar age group from 51-65 years. Combination therapy was preferred over monotherapy in the management of both OA & RA

The overall drug usages in this study revealed that a total of 193 drugs were prescribed. Out of which, Diclofenac was most prescribed [72(37.30%)] followed by Paracetamol in [40(20.72%)], Tramadol in [16(8.29%)], Nimesulide in [15(7.77%)], Hydroxychloroquine in [13(6.73%)], Aceclofenac in [9(4.66%)], Methotrexate in [8(4.14%)], Prednisolone in [7(3.62%)], Etoricoxib in [6(3.1%)], Deflazacort in [3(1.55%)], Ibuprofen in [2(1.03%)], Indomethacin in [1(0.51%)] and Colchicine in [1(.51%)] patients.

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

CONCLUSION

The principal aim of drug utilization research is to facilitate the rational use of drugs in populations. For the individual patient, the rational use of a drug implies the prescription of a well documented drug at an optimal dose, together with the correct information, at an affordable price. Without knowledge of how drugs are being prescribed and used, it is difficult to initiate a discussion on rational drug use or to suggest measures to improve prescribing habits. Drug prescribing studies aim to provide feedback to the prescriber and to create awareness among them about rational use of medicines.

The results showed that out of 92 patients, 53 (57.60%) patients were males and 39(42.31%) patients were females. Whereas, the gender distribution in OA patients shows that out of 75 patients, 49(65.33%) patients were males and 26(34.66%) patients were females. Whereas the gender distribution of RA patients shows that out of 15 patients, 13(86.66%) patients were females and 2(13.33%) patients were male.

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So the purpose of the study was to analyze the current prescribing pattern in the management of the arthritis.

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