

**PRESCRIPTION PATTERN IN PATIENTS WITH RHEUMATOID ARTHRITIS IN A
TERTIARY CARE HOSPITAL: A SYSTEMIC REVIEW**

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ABSTRACT

Introduction: Rheumatoid arthritis (RA) is a long-Lasting autoimmune disorder that affects joints. It usually results in warm, swollen, and painful joints. Pain and stiffness often worsen following rest. **Methodology:** The methodology included the plan of work with the literature review and understanding the management, to study the outcomes of the treatment and patient counselling. The study site for this was the inpatient ward of orthopaedics department, Tertiary care hospital. The type of study site was observational study and the patient selection was randomly done. The inclusion criteria being the patients (male and Female) with age group 40-70 years and the exclusion criteria are the pediatric patients greater than 30 years and the pregnant women. The study period is for 3 months with 30 patients. The present study was conducted to find out prescribing pattern of drugs used in Rheumatoid arthritis emergencies in tertiary care hospital. Total 30 patients case sheets were analysed during 3 month study period. **Result and Discussion:** The total percentage of male and female in 30 patients was found to be 76.6% (female) and 23.4% (male). From this chart it is clear that Females are more prone to Rheumatoid Arthritis. Patients with age group from 40-70yrs were included in the study. The patient age group falls in 3 categories i.e; class interval 40-50age, 50-60age, 60-70age. The highest percentage of patients were seen in the second category i.e; age group (50-60) and the lowest percentage in the third category age group (60-70). The most common symptoms was multiple Joint pain in 17 patients (56%) and Swelling was the next common symptom in 16 patients (53%) and the other symptoms include joint pain in 7 patients(23%), Joint tenderness in 1 patient (3%), Stiffness in 12 patients (40%), Deformity in 2 patients (6%), fever in 11 patients (36%). After treatment there is a difference in percentage of the frequency of symptoms i.e; Joint pain (20%), Swelling (40%), Stiffness (6%), Fever (33%). The drugs used In Ra are NSAID, antianaemics, anti-inflammatory & analgesics, Antimetabolite, DMARD, Analgesics, calcium supplements. This chart shows that the most widely used drug in the treatment of RA is Anti Metabolite (18), NSAID (15) Antianaemics (15) Anti inflammatory & analgesics (15), DMARD (14), Analgesics (12), calcium supplements (3). They are various other drugs that are used with Anti RA drugs in the treatment of Rheumatoid arthritis such as Antibiotic, antiemetics, cephalosporin antibiotics, anticonvulsants. **Conclusion:** RA is common disease with widespread focal joint destruction and complications secondary to systemic inflammation. Recent treatment option based on better understanding of disease pathology has led to immense changes in the management of this disease. Drug prescribing pattern depicts that the most commonly prescribed drugs were DMARDS, vitamin-D3 and calcium supplements and analgesics.

KEYWORDS: Rheumatoid arthritis, pain, inflammation, analgesic, calcium supplements, Dmards.

INTRODUCTION

Rheumatoid arthritis (RA) is long-lasting autoimmune disorder that affects joints. It usually results in warm, swollen, and painful joints. Pain and stiffness often worsen following rest. Commonly, the wrist and hands are involved and affected with the same joints typically involved on both sides of the body. Rheumatoid arthritis disease may also affect other different parts of the body and this may result in a low red blood cell

count, inflammation around the lungs, and the heart. Fever and low energy may be also present.^[1] Usually, symptoms come on gradually over weeks to months.^[2]

Causes and Risk Factors

Genetic Predisposition

The specific gene which is associated with rheumatoid arthritis, HLA-DR4, is found in 60% to 70% of

Caucasians with the disease. In contrast, it is only found in 20% of the general population.^[3]

Diet

Regularly drinking sugary sodas is associated with an increased risk of developing rheumatoid arthritis.^[4] Eating a Mediterranean diet which encourages eating vegetables, fruits, beans, and whole grains, does not affect women's risk of developing rheumatoid arthritis.^[5]

Body weight

People who are overweight or obese seem to have a greater risk of developing rheumatoid arthritis.^[6,7] In addition, people who are overweight seem to have worse symptoms than healthy-weight patients.^[8]

Signs and Symptoms

Common Symptoms of Rheumatoid Arthritis are :

- Pain
- Swelling
- Stiffness
- Redness
- Warmth^[9]
- Deformity^[10]
- Fatigue or tiredness
- Feeling ill and weak
- Low- grade fever
- Decreased appetite^[11]
- Morning stiffness considerable with joint pain and stiffness that interferes with physical functions after sleep is hallmark symptom of RA.
- Eye pain and vision problem occurs by inflammation in the eye
- Dry eyes and dry mouth occurs from sicca syndrome

Pharmacological Treatment

Disease Modifying Anti-rheumatic Drugs (DMARDS) :

Table no. 1: DMARDS.

Drug	Mechanism	Type
abatacept	It inhibits the T-cell costimulatory signal	bDMARD
adalimumab	It inhibits the TNF	bDMARD
anakinra	It antagonises IL-1 receptor	bDMARD
azathioprine	It inhibits Purine synthesis	Unknown
chloroquine	It suppresses IL-1, induce apoptosis of inflammatory cells and decreases chemotaxis	Unknown
ciclosporin	calcineurin inhibitor	Unknown
D- penicillamine	It Reduces number of T-lymphocytes etc.	unknown
etanercept	decoy TNF receptor	bDMARD
golimumab	TNF inhibitor	bDMARD
gold salts (sodium	Unknown mechanism	csDMARD

- Pericarditis and chest pain from inflammation of the tissue lining the chest cavity and surrounding the heart.
- Shortness of breath arises from inflammation of the lung.
- Tingling, pain, numbness, or burning sensation in hands and feet from an inflammation affects the nerves.
- Fatigue, muscle pain, kidney problems, rash, weight loss, and other issues arises from vasculitis.
- Rheumatoid arthritis causes anemia in up to 60 percent of people with RA, as well as leukopenia and an enlarged spleen.^[11]

Diagnosis

Imaging

X-rays of the hands and feet are generally performed when multiple joints are affected. In Rheumatoid arthritis, there may be no changes in the early stages of the disease or the x-ray may show osteopenia near the joint, soft tissue and swelling. As the disease advances, there may be occurrence of bony erosions and subluxation. Other medical imaging techniques such as magnetic resonance imaging (MRI) and ultrasound are also used in RA.^[12,13]

Blood tests

When RA is clinically suspected, a physician may test for rheumatoid factor (RF) and anti-citrullinated protein antibodies (ACPAs measured as anti-CCP antibodies).^[15] It is positive in 75-85%, but a negative RF or CCP antibody does not rule out RA, rather, the arthritis is called seronegative, which is in about 15-25% of people with RA.^[16]

aurothiomalate, auranofin)		
hydroxychloroquine	TNF-alpha, induce apoptosis of inflammatory cells and decrease chemotaxis	csDMARD
infliximab	It inhibits TNF	bDMARD
leflunomide	Inhibitor of Pyrimidine synthesis	csDMARD
methotrexate	Inhibits the Purine metabolism	csDMARD
minocycline	It inhibits 5-LO	Unknown
rituximab	chimeric monoclonal antibody against the CD20 on B-cell surface	bDMARD
sulfasalazine	Suppresses the IL-1 and the TNF-alpha, induces apoptosis of inflammatory cells and increases chemotactic factors	csDMARD
tocilizumab	It antagonises the IL-6 receptor	bDMARD
tofacitinib	It is kinase inhibitor	tsDMARD

METHODOLOGY

Plan of work

- Literature review.
- To understand the management.
- To study the outcomes of the treatment.
- Patient counselling.

Study site

- Inpatient ward of orthopaedics department, Tertiary care hospital.

Study design

1. Observational study.
2. Patient selection was random.

Study criteria

Inclusion criteria

1. Patients of age group 40-70 yrs.
2. Patients (in patients) of both genders.
3. Patients with comorbid conditions.

Exclusion criteria

1. Pediatrics and patients > 30years age
2. Pregnant women

Study Period

3 Months.

Sample Size

30 Patients.

RESULTS

Table No. 2: Age groups

A study of 30 patients was conducted with Rheumatoid arthritis as determined by respective diagnosis test and symptoms.

Results based on sex

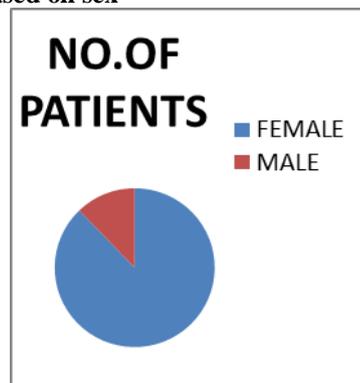


Fig. 1: Pie chart showing number of patients.

Table No. 3: Number of males and females.

Category	Number of Patients	Percentage of Number of Patients
FEMALE	23	76.6
MALE	07	23.4

The total percentage of male and female in 30 patients was found to be 76.6% (female) and 23.4% (male). From this chart it is clear that Females are more prone to Rheumatoid Arthritis.

Category	Number of Patients		Percentage	
	Female	Male	Female	Male
40-50	3	1	10	3.3
50-60	19	6	63.3	20
60-70	1	0	3.3	0

Results based on age group

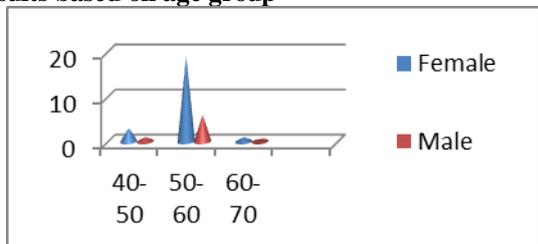


Fig. 2: Column chart showing results based on age group.

Patients with age group from 40-70yrs were included in the study. The patient age group falls in 3 categories i.e; class interval 40-50age, 50-60age, 60-70age. The highest percentage of patients were seen in the second category i.e; age group (50-60) and the lowest percentage in the third category age group (60-70).

Results based on symptoms

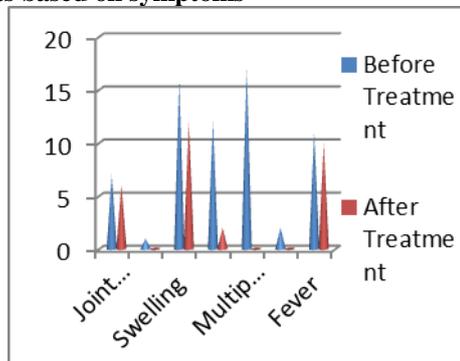


Fig. 3: Column chart showing results based on symptoms.

Table No. 4: Symptoms based results.

Category	Joint pain	Joint Tenderness	Swelling	Stiffness	Multiple Joint Pain	Deformity	Fever
Before Treatment	7	1	16	12	17	2	11
After Treatment	6	0	12	2	0	0	10

The most common symptoms was multiple Joint pain in 17 patients (56%) and Swelling was the next common symptom in 16 patients (53%) and the other symptoms include joint pain in 7 patients(23%), Joint tenderness in 1 patient (3%), Stiffness in 12 patients (40%), Deformity in 2 patients (6%), fever in 11 patients (36%). After treatment there is a difference in percentage of the frequency of symptoms i.e; Joint pain (20%), Swelling (40%), Stiffness (6%), Fever (33%).

Results showing usage of RA drugs

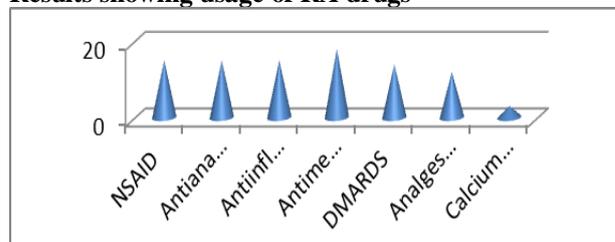


Fig. 4: Column chart showing results based on usage of RA drug.

Table no. 5: Drugs Used in RA.

Prescribed drug	No. Of patients	Percentage of patients
NSAID	15	50%
Antianaemics	15	50%
Anti-inflammatory & Analgesics	15	50%
Antimetabolite	18	60%
DMARD	14	46.6%
Analgesics	12	40%
Calcium Supplements	3	10%

The drugs used In Ra are NSAID, antianaemics, anti-inflammatory & analgesics, Antimetabolite, DMARD, Analgesics, calcium supplements.

Antianaemics (15) Anti inflammatory & analgesics (15), DMARD (14), Analgesics (12), calcium supplements (3).

This chart shows that the most widely used drug in the treatment of RA is Anti Metabolite (18), NSAID (15)

Results showing usage of other Drugs

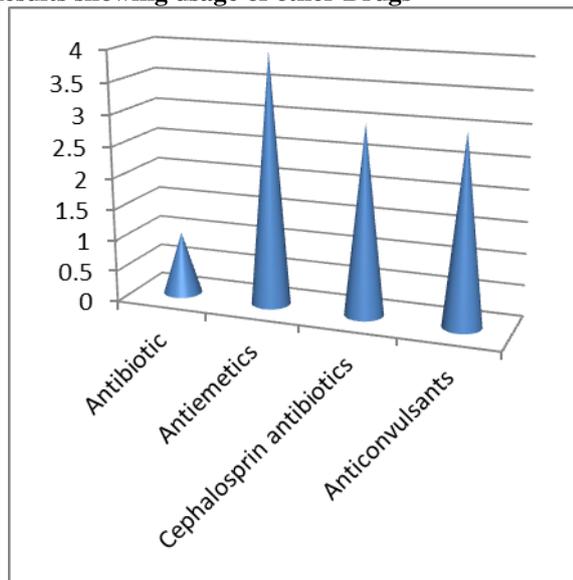


Fig. 5: Column chart showing results based on usage of other drugs.

Table no. 6: Other Drugs.

Prescribed drug	No. of patients
Antibiotic	1
Antiemetics	4
Cephalosporin antibiotics	3
Anticonvulsants	3

They are various other drugs that are used with Anti RA drugs in the treatment of Rheumatoid arthritis such as Antibiotic, antiemetics, cephalosporin antibiotics, anticonvulsants.

DISCUSSION

The present study was conducted to find out prescribing pattern of drugs used in Rheumatoid arthritis emergencies in tertiary care hospital. Total 30 patients case sheets were analysed during 3 month study period. Results pointed out that the frequency of rheumatoid patients emergencies was more in female patients (76.6%) than male patients (23.4%).

In the age group 40-50yrs and 60-70yrs the number of female patients were found significantly less as compared to the number of female patients in the age group 50-60yrs. Also there was significant difference between number of male and female patients in the age group of 40-50 yrs and 50-60yrs.

In the present, it has been found that the rate of NSAID (Hifenac), Antianemics (Becosules), anti inflammatory & analgesics (Myoril), Antimetabolite (folitrax) were high.

NSAID, Antianemics, Anti inflammatory & analgesics, Antimetabolites were prescribed commonly.

The other drugs used were Antibiotics, Antiemetics, cephalosporin antibiotic & anticonvulsants.

CONCLUSION

RA is common disease with widespread focal joint destruction and complications secondary to systemic inflammation. Recent treatment option based on better understanding of disease pathology have led to immense changes in the management of this disease. Drug prescribing pattern depicts that the most commonly prescribed drugs were DMARDS, vitamin-D3 and calcium supplements and analgesics.

In this cohort of patients with diagnosis of RA cared for by either general practitioners or rheumatologists, NSAID were the most commonly prescribed medication, with substantially lower rates of use for DMARD and corticosteroids. Drug discontinuation and medication switching were common.

The aggressive use of DMARD and biologic DMARD therapy has allowed patients to achieve improved function and decreased joint destruction. These medications are not without side effect or long term risks, however. An understanding of these pitfalls will allowed for the optimal patient care in both medical and surgical settings.

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