

Assessment of Health Related Quality of Life in Rheumatoid Arthritis Patients in Chitradurga

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Abstract: Objectives: The goal of the study was to assess the health related quality of life in Rheumatoid arthritis patients. **Materials and Methods:** A prospective observational study was carried out for a period of six months at orthopaedics department of Basaveshwara Medical College & Hospital, Chitradurga. **Results:** A total of 80 patients were enrolled for the study of which were 22 males and 58 were females. The female patients were more prone to develop diseases as compared to the males. Commonly prescribed class of drug is DMARDs (38%) and the secondary choice is NSAIDs (24.7) followed by Corticosteroid (16.6%), Antacids, (12.2%), vitamins (5%). The health related quality of life is very low in RA patients 25.67 ± 12.98 and there was a significant improvement 51.0 ± 24.81 which is statistically significant with $p \leq 0.03$ (Sig). **Conclusion:** The study revealed that quality of life in RA Patients is poor but the improvement of the health related quality of life is achievable even for severely affected RA patients by the proper therapies.

Keywords: Prevalence, Prescribing pattern, Quality of life

1. Introduction

Rheumatoid Arthritis (RA) is one of the most common rheumatic diseases, accounting for a large percentage of disability in the world. RA is a chronic multi-systemic autoimmune disorder of unknown aetiology which may be remitting, but if uncontrolled may lead to destruction of joints due to erosion of cartilage and bone, leading to deformity.

The Global Burden of Disease 2000 study, published in the World Health Report 2002 states that RA is the 31st leading cause of Years Lived with Disability (YLD) at global level, accounting for 0.8% of total global YLDs. The prevalence of Rheumatoid Arthritis varies between 0.3% to 1% worldwide and approximately 0.75% in India and is more common in women. RA is associated with substantial morbidity and increased mortality. Patients with active RA suffer from significant decline in functional capacity and as many as 40% become work disabled within five years, from onset of symptoms [1]. RA causes chronic inflammatory synovitis. Inadequately controlled RA is associated with joint damage and consequent disability with higher health costs, as well as mortality. The prevalence increases with age and reaches its peak in the population aged 65 year or older [2].

Various risk factors such as smoking, alcohol, and vitamin D deficiency affects the development of RA. Cigarette smoking

elevates the level of the rheumatoid factor (RF) and Anti-cyclic Citrullinated Peptide Antibody (Anti-CCP) which are used as the clinical biomarker in the diagnosis of RA. The occurrence and the severity of RA vary from different ethnic origin groups. Co-morbidities in RA are usually associated with poor progression and even reduce the life expectancy. (3)

The main aim of the study to assess the prescribing pattern of medication used for the management of RA. The twofold goals of treatment are well established i.e., firstly, suppression of pain and inflammation with non-steroidal anti-inflammatory drugs (NSAID) and secondly, induction of re-mission of the disease with disease modifying anti-rheumatoid drugs (DMARDs) if the disease progresses [4].

Drug treatment which comprises DMARDs but also NSAIDS and Glucocorticoids (GC), as well as non-pharmacological measures such as physical, occupational, psychological and therapeutical approaches together may lead to therapeutic success [5].

The physical, emotional, and social impact of RA contributes to poor health-related quality of life analysis of HRQoL surveillance data can identify subgroups with relatively poor perceived health and help to guide interventions to improve their situation and avert more serious consequences [6]. So it's necessary to assess the health related quality of life and drug prescribing studies to provide feedback to the prescriber and to create awareness among them about rational use of medicines.

2. Methodology

Study design: This was a prospective observational study.

Study site: The study was conducted in General orthopaedics department of Basaveshwara Medical College & Hospital, Chitradurga.

Study period: The study was conducted over a period of six months from 2017 to 2018.

Study subjects: All in and out patients who were presented to the General orthopaedics department of the hospital during the study period were enrolled into study. Patient who met the following criteria were enrolled.

Inclusion Criteria:

- Subjects of both in and out patients
- Aged more than 18 years.
- Subjects who are willing to give informed consent

- Subjects of both genders with Rheumatoid arthritis

Exclusion Criteria:

- Patients who are in comatose
- Pregnant and lactating patients
- Subjects who are newly diagnosed with Rheumatoid arthritis

Ethical approval:

The study was approved by the Institutional Ethical Committee of Basaweshwara Medical College Hospital & Research Centre, Chitradurga.

Vide number:

Sources of data:

- Medical records of in-patients
- Interview with patients and/or care takers.

Study procedure:

- The study was started after obtaining the approval from institutional ethical committee (IEC) of SJM college of Pharmacy.
- Patients who satisfied the above study criteria were included in the study after taking the informed consent.
- The study was conducted on patients with hypertension. Patient's demographic details, complaints, history, diagnosis, and prescribed drugs will be collected from the medical records of the patient and will be documented in a suitably designed data collection form. Interview with patients and/or their care takers and health care professionals.
- Details of prescription includes: Brand/generic name, class, dosage, route, frequency and duration and progress chart.

Statistical analysis:

- In pre-test patient will be given a questionnaire and data will be collected and evaluated. After 2 months posttest will be conducted with the same questionnaire, answers are collected and evaluated.
- The data were entered in Microsoft excel and data were analyzed by SPSS software version 16.
- Scoring of questionnaire is based on choose the correct answer /multiple answer questions.
- Categorical data were presented as frequency and percentage and quantitative data were analyzed by central tendency distribution.
- Student t test was used to compare the means of two variables.

3. Results

A. Distribution of subjects according to gender and age

1) Gender distribution

A total of 80 patient's data was collected from in & out patient of orthopaedics department from the hospital. Among the whole 80, 58 were females and 22 were males. This study showed that the prevalence is more in female than in males.

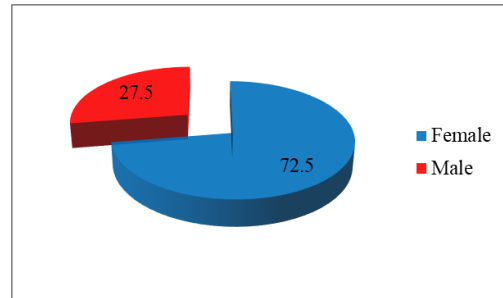


Fig. 1. Gender wise distribution of Rheumatoid arthritis patients

2) Age verses gender

The majority of age groups between 51-60 were 42 females and 12 men. Least age group is 61-70, 2 men and 1 female.

Table 1

Prevalence and pattern of RA in different age groups of the patients (N=80)

Age groups in years	Genders			
	Male	%	Female	%
41-50	8	10	15	18.8
51-60	12	15	42	52.5
61-70	2	2.5	1	1.2

B. Prescription Pattern

The most prescribing drugs given for the treatment of rheumatoid arthritis is Disease Modifiable Anti Rheumatoid Drugs (DMARDs) with a frequency of 149(38%) Followed by NSAIDs, frequency of 97(24.7%) then Corticosteroids, 65(16.6%) Gastric acid suppressents, 48(12.2%) vitamins, 20(5%).

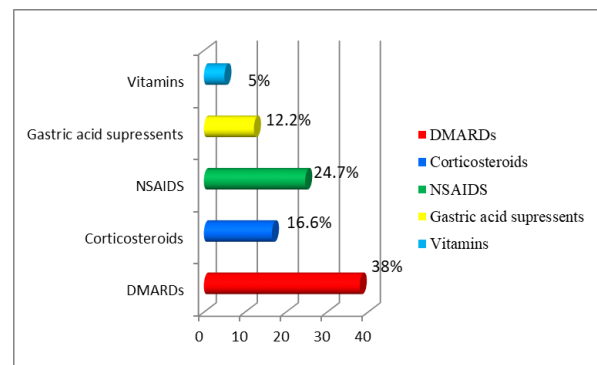


Fig. 2. Prescription pattern of drugs

1) Distribution based on DMARDs

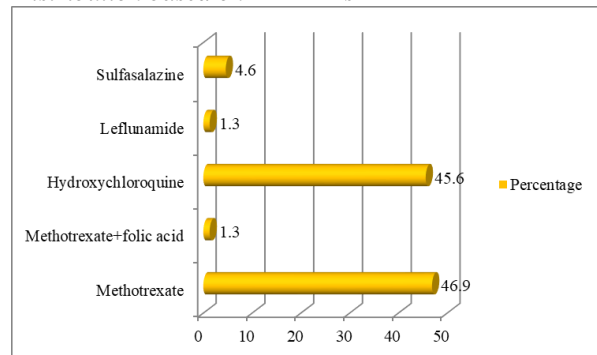


Fig. 3. Distribution based on DMARDs

The most prescribing drugs among the DMARDs are Methotrexate with a frequency of 70 (46.9%) and the least ones were leflunamide (1.3%).

2) *Distribution based on corticosteroids*

Among the the corticosteroids methyl prednisolone is mostly prescribed with a frequency of 53 (81.5) and least one is betamethasone, frequency is found to be 2(3%).

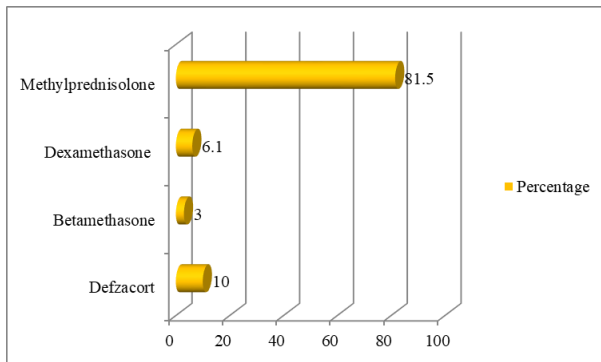


Fig. 4. Distribution based on corticosteroids

3) *Distribution based on NSAIDs*

Mostly prescribed drug on NSAIDs is etoricoxib with a frequency of 37 (38.2%) and the least prescribed one is etodolac (4.2%).

Table 2
 Distribution based on NSAIDs (N=97)

Drugs	Frequency	Percentage
Aceclofenac	9	9.3
Acetoaminofen	10	10.3
Diclofenac	9	9.3
Etodolac	4	4.2
Etoricoxib	37	38.2
Indomethacin	14	14.4
Piroxicam	6	6.1
Tramadol+paracetamol	8	8.2

4) *Distribution based on gastric acid suppressants*

Among the gastric acid suppressants, the most common prescribed is pantoprazole 15(31.2%) and the least one is omeprazole, frequency 4(8.3%).

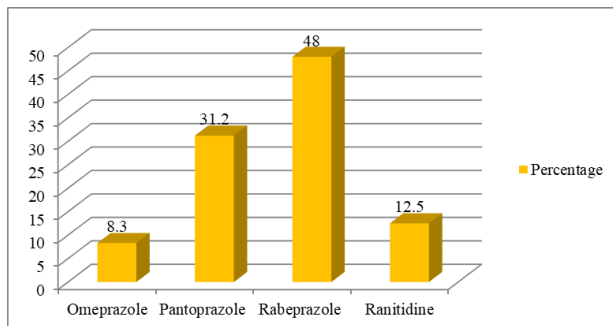


Fig. 5. Distribution based on gastric acid suppressants

5) *Distribution based on vitamins*

Vitamins are necessary for the bone health in RA patients,

the combination of calcium and vitamin d is mostly prescribed 10(50%) and the least one is vit E + levocarnitine with a frequency of 2(10%).

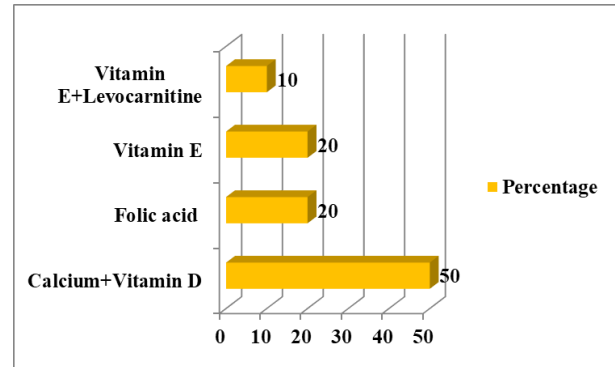


Fig. 6. Distribution based on vitamins

C. *Drug related problems*

1) *Drug interactions*

Total of 61 drug interactions were found out of which 28 (35%) were moderate, 23 were minor (28.7) and 10(12.5%) were major.

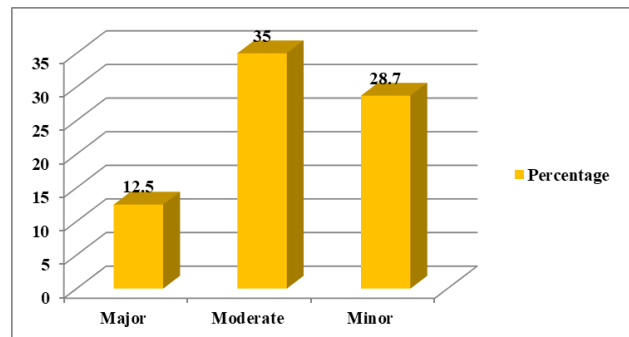


Fig. 7. Drug interactions

D. *Quality of life*

1) *Distribution based on quality of life of the patients*

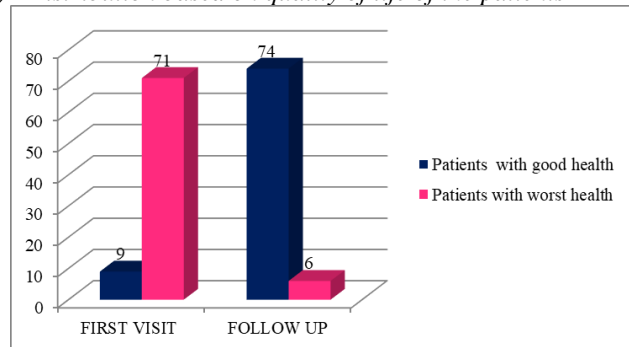


Fig. 8. Distribution based on quality of life of the patients

2) *Paired T-test statistics*

Among 80 patients the mean score of first visit is 25.67 with a std deviation of 12.98 and the std error of mean is 1.4 and in the post test the mean score get increased to 51.0 with a std deviation of 24.81, then the std error of the mean is 2.8. Student

t test is used for analysing the data and the T value is 7.914 and p value is 0.03 which shows statistically significant.

Table 3
Comparison of mean score

Test	Mean score	Std deviation	Std error of mean (SEM)	T value	P value
First visit	25.67	12.98	1.4	7.914	0.03 (Sig)
Follow-up	51.0	24.81	2.8		

4. Discussion

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints and can also cause the inflammation of the tissue around the joints, as well as in the other organs in the body.

The World Health Organization (WHO) defines QoL as ‘a broad ranging concept incorporating the person’s physical health, psychological state, level of independence, social relationships, person’s beliefs and their relationship to salient features of the environment’. QoL can be measured in various ways, and several generic and RA-specific questionnaires have been used. Patients with RA report reduced QoL in several domains, such as physical health, level of independence, environment and personal beliefs, compared with the healthy population. QoL in RA is affected by fatigue, pain, stiffness and impaired physical functioning. In addition, QoL is also influenced by socioeconomic factors such as age, employment, economic status and lifestyle habits.

There are few qualitative studies exploring RA patients’ perceptions of the concept of QoL. One previous study found that the patients’ understanding included not only freedom from disease and good physical functioning but also psychosocial aspects of life.

The study was conducted to assess the health related quality of life in Rheumatoid arthritis patients in chitradurga. This study was to explore the variation of ways in which patients with established RA understand the concept of QoL. In the present study a total 80 patients were included out of which 58 were females and 22 were males. The rheumatoid arthritis is mostly seen in the age group of 51-60 (52.5%). The female patients were more prone to develop diseases as compared to the males.

A similar study conducted by Andrianakos et al., on Prevalence and management of rheumatoid arthritis in the general population of Greece. Among 8740 subjects participated 59 individuals were diagnosed as RA. The prevalence of RA was 0.68%. It was significantly higher in females than males, and increased significantly with age up to and including the 50–59-yr-old group [7].

In our study the commonly prescribed class of drug is DMARDs (38%) second choice is NSAIDs (24.7) followed by Corticosteroid (16.6%), Gastric acid suppressants, (12.2%), vitamins (5%).

Dutta et al conducted a study on Prescription pattern in patients with rheumatoid arthritis in a teaching tertiary care

hospital. Total of 450 prescriptions was analyzed, Total of 1655 drugs were prescribed during the study period. The prescribed drugs were disease modifying anti-rheumatic drugs (DMARDs) 582 (35.18%), vitamin-D3 and calcium supplements 320 (19.34%), analgesics 311 (18.80%), antacids 204 (12.33%), others 238(14.38%) [8].

In our study 61 drug interactions were found out of which 28 (35%) were moderate, 23 were minor (28.7) and 10 (12.5%) were major. Most drug interactions were related to methotrexate.

Farias MR conducted a similar study on Potential drug interactions in patients with rheumatoid arthritis and he concluded that polypharmacy was found in 95.1% of the patients, and 19 potential undesirable interactions were observed between the drugs used by 74 patients (mean of 3.0 ± 1.2 interactions/patient). All potential interactions were related to methotrexate. Omeprazole was the major representative, accounting for 29.3% of the interactions, followed by diclofenac sodium (17.6%), and metamizole sodium (13.2%) [9].

In our study the health related quality of life is very low in RA patients 25.67 ± 12.98 and there was a significant improvement from the pretest score to the post test score 51.0 ± 24.81 which is statistically significant with $p \leq 0.03$ (Sig).

Fausto Salaffi conducted a similar study on the health-related quality of life in rheumatoid arthritis, and he state that chronic inflammatory rheumatic disease have a clearly detrimental effect on the HRQL. There is an impairment in eight health concepts of the SF-36 ($p < 0.0001$) in both component PCS and MCS scores ($p < 0.0001$). Overall, the dimensions typically affected were physical functioning, limitations due to physical function, and bodily pain. The disease with the worst HRQL for those dimensions was RA. The multivariate analyses revealed that the physical component was influenced by a high disease activity and comorbidity. A similar study was conducted by Kerstin Gerhold et al. patients reported lower score of physical and mental health that is they have a poor quality of life then the health related quality of life get improved by the therapies [10].

5. Conclusion

Rheumatoid arthritis is the most common systemic inflammatory disease, and is characterized by symmetrical joint involvement.

According to the analyzed results and from view of literature, the conclusions made are,

- From the present study it can concluded that females are more prone to RA as compared to males.
- Commonly occurs in middle age.
- DMARDs were the most prescribed drug.
- Moderate drug interactions were found most commonly.
- Health related quality of life in RA patients is poor

but it is significantly improved by therapies.

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