

**A Study on Clinical Profile of Rheumatoid Arthritis Patients Attending Orthopedic OPD in a Tertiary Care Hospital**S. Senthil<sup>1\*</sup>, R. Muthusamy<sup>2</sup>, G. Thiyagarajan<sup>3</sup><sup>1,2,3</sup>Assistant Professor, Department of Orthopedics, Government Medical College, Krishnagiri

Received: 25-12-2023 / Revised: 23-01-2024 / Accepted: 26-02-2024

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Conflict of interest: Nil

**Abstract:**

**Introduction:** Rheumatoid arthritis (RA) is a chronic multisystem disease of unknown cause. The characteristic feature of RA is persistent inflammatory synovitis usually involving the peripheral joints in a symmetric fashion. The hallmark of the disease is cartilage damage and bone destruction. The extra articular manifestations also depend upon the duration of the disease. If the duration is more the severity is also more. EAM are also associated with excessive mortality, since they affect major organs. The aim of the study is to identify and analyze the common presenting complaints of rheumatoid arthritis patients and to assess the various joint involvements and its relation with the duration of the disease and to assess advantageous effects of disease modifying anti rheumatic drugs.

**Materials and Methods:** Patients with symptoms suggestive of Rheumatoid arthritis who represented Orthopedics OPD at Government Medical College hospital Krishnagiri for period of one year were included in this study. A total number of 100 patients who presented with typical clinical features based on the Modified American College of rheumatology criteria and already diagnosed to have RA were included in the study.

**Results:** A total number of hundred patients were included in this study in the age group ranging from 18-74years. Fatigability, Loss of weight and Fever were observed in 91%, 41% & 52% of patients respectively. All patients showed involvement of PIP& MCP joints. The next common joint involved was wrist in 82% of patients extra articular manifestations (EAM) were found in 41%of patients studied. Among the EAM, anemia was the predominant manifestation and seen in 22% of patients. Majority of the patients with EAM were seropositive. And seropositive patients presented with joint damage earlier than seronegative patients. DMARD is required in 85% of patients to overcome the symptoms.

**Conclusion:** Morbidity associated with RA remains highly prevalent. The disease has female preponderance with a significant proportion having positive family history. Most common joints involved are the MCP and the wrists and the most common deformity we found ulnar deviation of digits. There are significant proportions of patients who present with high disease activity. Anemia, thrombocytosis and extra articular manifestations are common. Most of the patients are on DMARDs with methotrexate being the most commonly used drug.

**Keywords:** Rheumatoid arthritis, clinical presentation, DMARDS.

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**Introduction**

Rheumatoid arthritis (RA) is a chronic multisystem disease of unknown cause. The characteristic feature of RA is persistent inflammatory synovitis usually involving the peripheral joints in a symmetric fashion. The hallmark of the disease is cartilage damage and bone destruction<sup>1</sup>.

Rheumatoid arthritis is the most common inflammatory arthritis, affecting 0.5% to 1% of general population worldwide. Because of its prevalence and ready accessibility of joint samples for laboratory investigation, rheumatoid arthritis has served as a useful model for the study of all inflammatory and immune mediated disease. Rheumatoid arthritis patients can present with variety of clinical features, various articular and

extra articular involvement. They may result in various complications which can impair the physical function in these patients. Pain in affected joints, aggravated by movement, is the most common manifestation of established RA. Generalized stiffness is frequent and is usually greatest after periods of inactivity.

Rheumatoid arthritis does not involve the same type of joints in all patients. In general the number and severity of articular features vary with the duration and severity of the disease. Articular manifestations (AM) can severely affect the functional quality of an individual due to various deformities, such as “Z” deformity, Swan neck deformity boutonniere deformity and hallux valgus

[1]. The Extra articular manifestations (EAM) may be due to formation of immune complexes. EAM includes the involvement of skin, eye, serosa, lung, heart, kidney, nervous system. The extra articular manifestations also depend upon the duration of the disease. If the duration is more the severity is also more. EAM are also associated with excessive mortality, since they affect major organs.

In two-third of the patients, RA begins insidiously with constitutional symptoms such as fever, loss of appetite, fatigability and generalized weakness. This also makes the patients to abstain from day-to-day routine activities.

The aim of the study is to identify and analyze the common presenting complaints of rheumatoid arthritis patients and to assess the various joint involvement and it's relation with the duration of the disease and to assess advantageous effects of disease modifying anti rheumatic drugs.

### Materials and Methods

Patients with symptoms suggestive of Rheumatoid arthritis who represented Orthopedics OPD at Government Medical College hospital Krishnagiri for period of one year were included in this study. A total number of 100 patients who presented with typical clinical features based on the Modified American College of rheumatology criteria and already diagnosed to have RA were included in the study. Patients with mono articular involvement, patients below 16 years, patients who did not fulfill the ACR criteria were excluded.

Patients who fulfilled the four of the seven criteria defined by the American College of Rheumatology (Modified ACR criteria) were included in the study. Detailed History of clinical features also obtained from the patients. The RA patients thus selected were screened for various common clinical features, articular and extra articular manifestations

using a structured Proforma designed for this study. These patients were clinically examined for evidence of articular and extra articular manifestations like skin, skeletal, eye, serosal vascular, nervous and respiratory system involvement. The patients on DMARDs also were included in the study to know the efficacy of these drugs in controlling the symptoms. All required hematological investigation were done. At the end of the study the proportion of articular and extra articular manifestations in 100 Rheumatoid arthritis patients screened were calculated and expressed as percentage. The severity and frequency of these articular and extra articular manifestations were correlated with the duration of the illness and serological status.

### Results

A total number of hundred patients were included in this study in the age group ranging from 18-74 years. Most common age group was above 40 years with 68 patients in that age group. The mean age is being 41.6. Female patients were more common with 82 patients being female and rest 18 was male. We did rheumatoid factor test and in our study population 63 patients were RF positive and rest 37 patients were RF negative among RA factor positive cases 56 were female and 7 were male.

Fever is the most common clinical symptom in 91 patients followed by loss of weight in 41 patients and fatigue in 52 patients. The common articular manifestations observed were as follows: Arthritis changes involving hands particularly PIP and MCP was seen in all patients followed by wrist involvement in 82 patients. Elbow joint was next common site followed by ankle joint. Foot involvement, particularly MTP and PIP were involved in 37 patients. Hip, Knee and cervical joints were involved in few patients.

**Table 1: Articular Manifestations**

S.No	Joints involved	Percentage
a)	Cervical Joint	3 %
b)	Elbow	48 %
c)	Wrist	82%
d)	Hands(PIP&MCP)	100%
e)	Hip	7%
f)	Knee	7%
g)	Ankle	45%
h)	Foot (MTP&PIP)	37%

We also evaluated the extra articular manifestations in our study population. With anemia being most common seen in 20% of patients followed by nodules, eye involvement and secondary sjogren in 4 patients each. Serosal and cardiac involvement was there in 2 patients each. Lung involvement, neural involvement and vasculitis were seen in 1 patient each.

**Table 2: Extra Articular Manifestations (EAM)**

S. No.	EAM	Percentage
a)	Anemia	-20%
b)	Rheumatoid Nodules	- 4%
c)	Eye Involvement	- 4%
d)	Serosal Involvement	- 2%
e)	Lung	- 1%
f)	Cardiac Involvement	- 2%
g)	Vasculitis	-1%
h)	Secondary Sjogren's	- 4%
i)	Neural	-1%

We further evaluated the duration of extra articular manifestation and 10 females had such manifestation for more than five years and one male and 8 female had extra articular manifestation for 2 to 5 years while 1 male and 14 female had extra articular manifestation for less than 2 years. As a whole 2 male and 32 female had extra articular manifestation.

Higher portions of the participants, 77% and 57%, were taking methotrexate and folic acid, respectively, and few of the participants, were on prednisolone

#### Discussion

Rheumatoid arthritis is still a global health concern as it causes joint damage as well as long-term disability. In this study three common symptoms such as Weight Loss, Fatigability and Fever were studied. 41 % of patients manifested with loss of weight and they have showed improvement in weight after starting the treatment. Fatigability was observed in 91% of the patients. In our OPD, majority of the RA patients presented with joint pain along with fatigue, which has incapacitated them from day to day activities. Fever was present in 52% of patients diagnosed to have RA for the first time. Fever was also present when the patient gets acute attack of RA.

The commonest joints involved are proximal interphalangeal joints (PIP) and metacarpophalangeal (MCP) joints. They are almost affected in all patients presented with RA. For example, a study conducted in south India (Chandrasekar, Radhakrishnan et al) [24], the involvement of PIP is 85%, MCP is 68% which shows the predilection for those joints in RA. The next common joint involved in wrist which was involved in 82% of RA patients.

The cervical joints are involved in three patients and among them one patient had it in the form of Atlanto axial subluxation. In a study conducted by D Chellapandian, C Rajendran Panchapakesa et al, showed 42% involvement of cervical spine [25]. 20% of them had Atlanto axial subluxation [24,25]. The patient in this study was presented with gradual onset of quadriplegia. The other patients had cervical spine tenderness and limited mobility of cervical joint.

Multiple joint involvements apart from upper limb joints are usually associated with chronic duration of the disease. The involvement of large joints occurred late,

In this study 22% of patients were manifested with anemia and 6 % of them were seronegative, whereas 16% cases were sero positive. Normochromic Normocytic anemia was seen in 12 %. In various studies the manifestation of anemia was in the range of 25-35%. [9,11,24] Hypochromic microcytic anemia was observed in 10%. Hemoglobin levels arranged from 7.5 – 8.5%.

Usually, rheumatoid nodules occur in 20 % to 30% of RA patients [9,10]. In this study 4% of cases diagnosed to have rheumatoid nodules. Among them 3 were Sero positive and one was Sero Negative. They were seen over the elbow.

Secondary SJOGREN's can develop in 10-15% of long-term rheumatoid patients [19]. In this study secondary Sjogren's was observed in 4% of patients. In this study, 4 patients showed evidence of Scleritis and episcleritis.

Pleural involvement is normally seen in 20% of patients. In this study one patient showed pleural effusion and pericardial effusion was seen in one patient [15]. Interstitial lung disease was found in one patient who presented with dyspnea and on examination had bilateral rales. Radiography showed Reticulonodular pattern and confirmed by HRCT. Pulmonary function test showed restrictive pattern.

Mitral valve prolapse and mild mitral regurgitation was seen in one patient and aortic regurgitation was seen in one patient. And it was confirmed with echocardiography. Incidence of vasculitis is 1%. In this study one patient showed vasculitis feature and he was presented with cutaneous ulcer in the legs. It is usually seen in males. In this study one patient presented with insidious onset of quadriplegia due to the compression of spinal cord, because of atlantoaxial subluxation.

In this study, 85% of patients required disease modifying anti rheumatic drugs (DMARD) to control their symptoms and all of them had the disease for more than a year except for 3% of

patients in whom the duration is less than 1 year. In a study conducted by Goldbach-Mansky R, Lipsky PE et al, it is shown that early institution of DMARDs is highly beneficial for patients with RA even at their first visit to rheumatologist [26]. Fifteen percentages of patients were not on DMARDs and the duration of the disease in them was less than a year. Patients who were on DMARD had a good pain relief and it has improved the functional quality of life in those patients.

### Conclusion

RA is predominant among elderly populations and females. Knee and wrist joint involvement are the predominant joint involvement in the RA subjects. Disease duration, family complaints, and ESR are linked with disease severity. This study's findings call for interventions towards prevention or early diagnosis of RA among high-risk populations to enhance good management.

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