

Rheumatoid Arthritis Etiology Pathogenesis Investigations Immunology Latest Management and Prognosis

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Abstract

Introduction: The clinical spectrum of rheumatoid arthritis (RA) presentation is heterogeneous, with wide variation in age of onset, degree of joint involvement and severity. The aim of the present study is to assess the demographic, clinical & seriological features, severity of disease and treatment option used among patients diagnosed with rheumatoid arthritis.

Materials & Method: The present observational study was conducted among 162 patients of rheumatoid arthritis visited to department of general medicine of a tertiary care centre during the period of study. The Clinical history and physical examination of all patients were done. Data was recorded and analyzed using SPSS version 23.0.

Results: The mean age of patients 51.6 years and females were more as compared to males. 54.3% of patients were suffering from severe stage of RA. The most frequently affected joints were the wrist (94.7%), MCP (92.1%), and PIP (93.7%). The sicca symptom (42.6%) and the carpal tunnel syndrome (32.7%) were the most common extra-articular involvement followed by pulmonary involvement (6.5%), vasculitis (2.8%), and the Raynaud's phenomenon (1.9%). The medications, including methotrexate, leflunomide, salazopyrine, and low-dose corticosteroid have been used by 86.4%, 12.9%, 75.3%, and 72.2%, respectively.

Conclusion: The most prevalent type of inflammatory polyarthritis is RA, however due to its variable presentation, it is not always easy to identify at the outset. The different options present today help in early diagnosis and complete management of disease.

Keywords: Clinical Features, Joints, Management, Medications, Rheumatoid Arthritis.

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Introduction

The chronic inflammatory disease rheumatoid arthritis (RA) causes gradual articular destruction as well as a variety of extra-articular symptoms [1]. The most common joints affected by RA are the metacarpophalangeal (MCP), proximal interphalangeal (PIP), wrist, metatarsophalangeal (MTP), and knee joints, though other joints may also be affected. Although the disease's clinical

beginning can vary, it typically starts with symmetrical involvement of the tiny joints, discomfort, morning stiffness, and movement restriction lasting more than an hour. Until the development of disease-modifying antirheumatic medications (DMARDs), RA was thought to be a chronic illness with systemic involvement, severe, debilitating arthritis, and a high rate of morbidity and mortality [2]. Several

ethnic groups exhibit variation in the disease's incidence, severity, and prognosis [3-5]. This variation is influenced by genetic and/or environmental variables, as well as the socioeconomic standing and degree of development of the various nations. Because they have less access to doctors, specialists, and/or medications, people with RA are known to have a severe clinical course and a bad prognosis in developing nations. Studies on RA have shown that the disease may be influenced by various genetic and/or environmental variables in different ethnic groups. These studies demonstrate that RA patients of various ethnic backgrounds may present with various symptoms and results, allowing for the development of various tailored therapeutic approaches. Data on the incidence, clinical course, extra articular symptoms, and consequences of RA are scarce in our nation [6, 7].

The goal of the current study was to assess the demographic, clinical, and serological traits of patients with RA at a tertiary care hospital.

Materials & Methods

The present observational study was conducted at department of General medicine of a tertiary care hospital for a period of one year among patients who reported with complaint of rheumatoid arthritis. Plan was approved by institutional ethical committee of the designated college and hospital. The convenient sampling method was used and all the patients who were diagnosed with rheumatoid arthritis,

above age of 18 years, willing to participate in study were included. The patients having any other comorbidity and does not signed the consent form were excluded from the study. Therefore, the final sample size calculated was found to be of 162 patients. The patients were diagnosed on the basis of 2010 American College of Rheumatology (ACR) and European League Against Rheumatism (EULAR) classification criteria for rheumatoid arthritis.[8] Clinical history and physical examination of all patients were done. Following parameters were recorded in all patients during the examination; demographic data, clinical findings, disease activity (number of sensitive/swollen joints among 28 joints), use of DMARDs, presence of articular and extra articular symptoms, presence of concomitant comorbid diseases, laboratory parameters (including complete blood count, CRP, ESR, RF, anti-CCP antibody) and radiological changes. The data was recorded in Microsoft excel sheets and results were analyzed using SPSS software version 23.0. Results were presented in the form of frequency, percentage and mean \pm SD value using chi square and T test with keeping significance level at p equal to or less than 0.05.

Results

Out of 162 patients 120 were female and 42 were male. The mean \pm SD age of patients were 51.6 ± 2.1 years and mean duration of disease was 10.2 ± 1.6 years. Mean time of onset disease was 3.5 ± 1.1 years as shown in table 1.

Table 1: Showing demographic of patients and characteristic of disease.

Demographic / characteristics		Value
Gender	Male	42 (26%)
	female	120 (74%)
Age (years)		51.6 ± 2.1
Duration of disease (years)		10.2 ± 1.6
Time of onset (years)		3.5 ± 1.1

When patients were divided on the basis of severity of disease it was found that those 88 patients (54.3%) had severe disease (DAS28 $>$ 5.1) and 74 patients (45.6%) had mild disease (DAS28 $<$ 3.2) as shown in table 2

Table 2: Shows distribution of disease according to severity of disease.

Severity of disease	Frequency (%)
Severe stage	88 (54.3)
Mild stage	74 (45.6)

The most frequently affected joints were the wrist (94.7%), MCP (92.1%), and PIP (93.7%). The knee and hip joint involvement rates were 43.6% and 21.7%, respectively. Patients (51.7%) were detected to have tenosynovitis. Involvement of the elbow joint was reported in 9.8% of the patients as shown in table 3.

Table 3: Shows frequency of different joints involved.

Joints involved	Frequency (%)
Wrist	94.7%
Metacarpophalangeal joint	92.1%
Proximal interphalangeal joint	93.7%
Tenosinovit	51.7%
Knees	43.6%
Hip	21.7%
Shoulder	10.5%
Elbow	9.8%
Ankles	6.7%

Clinical and serological symptoms of patients are noted in table 4. Patients (54.8%) had erosion and 25.1% of the patients had deformities. Deformities were commonly observed in the wrist, fingers, elbow, and toes. The sicca symptom (42.6%) and the carpal tunnel syndrome (32.7%) were the most common extra-articular involvement followed by

pulmonary involvement (6.5%), vasculitis (2.8%), and the Raynaud's phenomenon (1.9%). Four patients had rheumatoid nodules (2.7%), two patient had Felty syndrome, and another patient had secondary amyloidosis. Patients (43.2%) were detected to have anemia, 91.2% of the patients had positive RF, and 76.2% patients had positive anti-CCP antibody

Table 4 shows clinical and serological symptoms of patients

Main features	Frequency
Sicca symptoms	42.6%
Carpel tunnel syndrome	32.7%
Vasculitis	2.8%
Raynauds phenomenon	1.9%
Rheumatoid nodule	2.7%
Felty syndrome	1.23%
Secondary amyloidosis	0.62%
Anaemia	43.2%
Erosions	54.8%
Deformity	25.1%
Rheumatoid factor	91.2%
Anti CCP antibody	76.2%

All patients have received at least one DMARD. The medications, including methotrexate, leflunomide, salazopyrine, and low-dose corticosteroid have been used by 140 patients

(86.4%), 21 patients (12.9%), 122 patients (75.3%), and 117 patients (72.2%), respectively. Eight patients have received anti-TNF-alpha therapy (4.93%) as shown in table 5.

Table 5: shows distribution of patients according to treatment option used.

Treatment option	Frequency
Methotrexate	140 (86.4%)
Leflunomide	21 (12.9%)
Salazopyrine	122 (75.3%)
Corticosteroids	117 (72.2%)
Anti-THF-alpha	8 (4.93%)

Discussion

The current study was done among 162 patients who reported during the study period at department of general medicine and were diagnosed with rheumatoid arthritis to find out the clinical and serological features, joint involvement and the management option used in the course of disease. The incidence of erosion and destructive arthropathy was reported to be higher in our patients as compared to studies done by Nai cheng C [9]. In addition to genetic and environmental factors, the data reveals that these patients remained undiagnosed and untreated for several years. Calguneri et al. evaluated extra-articular findings of 526 RA patients followed-up by a single center [6]. The most common extra-articular findings, including the rheumatoid nodules (18.1%) and sicca symptoms (11.4%), were dissimilar to those observed our studies. In another trial conducted in by Bodur H et al, [10] evaluated 562 patients with RA, eye involvement (8%), and subcutaneous nodules (7.5%) were reported as the most common extra-articular findings, and the rate of comorbid diseases was reported as 35.8%. These findings were similar to our results. Positive RF and anti-CCP antibody rates detected in our patients were similar to the results reported in the literature. Positive RF rates are 65%, 62%, and 60% in English, Malaysian and Kuwaiti patients, respectively [11, 12]. All patients have received at least one of the DMARDs. The first choice of therapy was methotrexate (86.4%) like that in the in previous

literature. However, only 12.9% of our patients have received leflunomide, because the general health insurance system in our country restricts usage of the drug. Only eight patients (4.93%) having persistent active disease refractory to conventional DMARD treatment have received anti-TNF-alpha therapy. This rate is 40% and 54% for USA and France, respectively [13]. A variety of clinical presentations of RA observed in different populations and reported in the literature may be associated with genetic and environmental factors. In certain Mediterranean countries, the disease was reported to have a clinical course involving a lower level of articular symptoms, extra-articular involvement, and little radiological damage [14]. While a milder disease and less severe dysfunction was reported in Chinese patients with RA, a better clinical course, and a low incidence of systemic involvement was reported in Russian patients with RA [15]. Compared with English patients, Malaysian RA patients were reported to exhibit different articular and extra-articular symptoms. Pakistani patients had a lower incidence of rheumatoid nodule and hand-foot erosion relative to English patients [16]. A variety of diseases can cause RA. In many populations, it could appear differently clinically. The study cannot be considered representative of the general community because it uses data from RA patients who were monitored by a single centre.

Conclusion

The most prevalent type of inflammatory polyarthritis is RA, however due to its variable presentation, it is not always easy to identify at the outset. More than three swollen joints, a positive squeeze test for MTP or MCP joints, swelling in the MCP or wrist joint, and morning stiffness lasting more than 30 minutes are all indications of an inflammatory arthritis. The outlook for persons who present with RA has substantially improved within one generation as a result of early therapy, the development of very effective targeted medicine, and radiographic approach to management. [17]

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