Demographic, joint involvement, and serological features of patients with rheumatoid arthritis.

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Abstract

Background and objectives: The most prevalent and chronic form of systemic autoimmune disease, rheumatoid arthritis is characterized by persistent inflammation, deteriorating joint function with time, increasing comorbidity, and increased mortality.
The aim of this study was to know the frequency of joints involved, to know the prevalence of seropositive Rheumatoid arthritis, and evaluation of demographic features of the patients with Rheumatoid arthritis.

Methods: A cross-sectional, descriptive study was undertaken on 110 patients at Rizgary teaching hospital in Erbil city. From January 2022 and January 2023. We evaluated and diagnosed the patients. Serological investigations including Anti-cyclic citrullinated peptide and rheumatoid factor were done for all of the patients.

Results: One hundred ten patients 80% were female and 20 % were male. The mean age (SD) was 51.39 (12.6) years, majority of the patients were obese (45.5%). Only 14.5% of the sample were smokers, and rate of illiteracy was 60%. The most common joints involved were metacarpo-pharyngeal joint 73.6% followed by wrist joint 63.6%. Most common comorbid disease was hypertension 29.1% followed by diabetes mellitus, and thyroid disease (15.5%, 10%) respectively. Prevalence of seropositive rheumatoid arthritis was 80.9%. Majority of the patients used methotrexate, while the most common biologic used by the patients was etanercept 12.7%.

Conclusions: Our rheumatoid arthritis patients' demographics, joint involvement, and serological characteristics matched those of some regional and international studies, however we discovered a higher proportion of women and a higher percentage of illiteracy.

Key words: Demographic,Joints,Rheumatoid arthritis,Serological.

Introduction

Rheumatoid arthritis (RA) is the most prevalent and long-lasting systemic autoimmune disease, characterized by persistent inflammation, deteriorating joint function with time, increasing comorbidity, and increased mortality.[1] The risk of RA is influenced by both hereditary and

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environmental triggers.[2] The most common disease symptom is the symmetrical involvement of the small joints of the hands. The patient complained of joint pain, stiffness in the morning, and movement restrictions lasting more than an hour. Other joints may also be affected by RA, despite the fact that the Metacarpophalangeal (MCP), Proximal Interphalangeal (PIP), wrist, Metatarsophalangeal (MTP), and knee joints are usually affected.[3,4] Rheumatoid arthritis (RA) prevalence rates range widely, numerous studies conducted across Europe in various nations have revealed rates between 0.5% and 1.0%.[5] Although RA does not directly pose a threat to life, but it can significantly lower the life quality of patients and place a heavy financial burden on society.[6] Women are more likely than men to have rheumatoid arthritis the ratio is(2:1), and the risk of developing RA rises with advancing age.[7] Prior to the development of Disease-Modifying Antirheumatic Drugs (DMARDs), RA was characterized as a chronic disease with severe, debilitating arthritis and systemic involvement, leading to high rates of morbidity and mortality, functional disability, and decreased quality of life.[8] Different ethnic groups differ from one another in terms of the disease's incidence, severity, and outcome.[9-11] The various socioeconomic and developmental levels, genetic and environmental factors, as well as others, all contribute to this heterogeneity. Due to the lack of access to healthcare professionals, specialists, and/or medications in developing nations, people with RA are recognized to have a severe clinical course and a poor prognosis.[3,4] Different focused therapy approaches are made possible by various symptoms and results. There is limited data on the prevalence of RA in our region. There isn't much information in the literature about the demographics, clinical This research was approved by the ethics and scientific committees of the Kurdistan Higher

features, comorbidity, and outcome of RA in our region. The current study was designed to examine the demographic, clinical (joint involvement), and serological features of RA patients followed-up by a single center in order to satisfy this need. The aim of our study was to know the frequency of joints involved, to know the prevalence of seropositive rheumatoid arthritis and evaluation of demographic features of patients with rheumatoid arthritis.

Patients and methods

One hundred ten patients 80% females and 20 % males were diagnosed with RA according to the American College of Rheumatology/European League against Rheumatism (ACR/EULAR) 2010 criteria [12]. In the rheumatology outpatient clinic at Rizgary teaching Hospital in Erbil city between January 2022 and January 2023. For this cross-sectional study, participants were enrolled. This center handled all of the patients' diagnosis, treatment, and follow-up. Using a unique questionnaire created by the researcher, the patients were interviewed with the purpose of gathering data. One investigator assessed the medical history and physical examination of all patients in outpatient department. During the initial exam, the following variables were noted for each patient: demographic data, educational level, use of DMARDs, joint involvement, existence of comorbid illnesses in conjunction, the following laboratory variables: ESR, RF and anti-CCP antibody.

Inclusion criteria involved all patients who fulfill EULAR/ACR 2010 classification criteria for Rheumatoid arthritis and Patients who are ≥18 years old.

Exclusion criteria involved malignancy, pregnant women, active infection, congestive heart failure and chronic liver disease.

Council of Medical Specialties. The purpose of this study is explained for each patient and

environmental factors. Synovitis and ensuing destructive arthritis are brought on in genetically susceptible people by a chain of events that includes epigenetic changes and a verbal consent is obtained from each one of them.

Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 26). Numerical variables were shown in the form of means and standard deviations (SDs). Frequencies and percentages were used to summarize categorical variables.

Results

The total number of patients was 110. Their mean age (SD) was 51.39 (12.6) years, the median was 52 years, and the age range was 22-73 years. The largest proportion of the sample (31.8%) were aged ≥ 60 years, and 30% were aged 50-59 years. The majority (80%) of the sample were females, and the female: male ratio was 4: 1. The majority (70%) were unemployed, and 60% were either illiterate or just read and write. The majority (96.4%) were married, and 80% were living in urban areas. Only 14.5% of the sample were smokers, the majority were either obese (45.5%) or overweight (30%), and the mean (SD) of ESR was 32.75 (20.71) mm/hr as presented in (Table 1).

Table (1). Socio-demographic characteristics.

	No.	(%)
Age (years)		
< 40	25	(22.7)
40-49	17	(15.5)
50-59	33	(30.0)
≥ 60	35	(31.8)
Mean (SD)	52.0	(12.6)
Gender		
Male	22	(20.0)
Female	88	(80.0)
Occupation		
Employed	26	(23.6)
Unemployed	78	(70.9)
Retired	6	(5.5)
Educational level		
Illiterate and read and write	66	(60.0)
Primary	14	(12.7)
Secondary	18	(16.4)
College	12	(10.9)
Marital status		
Single	4	(3.6
Married	106	(96.4)
Residency		

Urban	88	(80.0)
Rural	22	(20.0)
Smoking		
Smoker	16	(14.5)
Non-smoker	87	(79.1)
Ex-smoker	7	(6.4)
Body mass index (Kg/m^2)		
Normal	27	(24.5)
Overweight	33	(30.0)
≥ 30	50	(45.5)
ESR (mm/hr) Mean (SD)	32.75	(20.71)
Total	110	(100.0)

The most commonly involved joints are as follows: metacarpo-phalangeal joint (73.6%), wrist (63.6%), knee (55.5%), and foot metatarso-phalangeal joint, in addition to the other joints mentioned in (Table 2).

Table (2). Frequency of joint involvement.

	No.	(%) n = 110
Metacarpo-phalangeal joint	81	(73.6)
Wrist	70	(63.6)
Knee	61	(55.5)
Foot metatarso-phalangeal joint	47	(42.7)
Proximal interphalangeal joint	40	(36.4)
Elbow	39	(35.5)
Shoulder	32	(29.1)
Ankle	24	(21.8)
Hip	12	(10.9)
Cervical spine	12	(10.9)
Temporomandibular joint	11	(10.0)

Around one third (29.1%) of patients had hypertension, 15.5% had diabetes, in addition to other diseases mentioned in (Table 3).

Table (3). History of chronic diseases.

	No.	(%)
Hypertension	32	(29.1)
Diabetes	17	(15.5)
Thyroid diseases	11	(10.0)
Dyslipidemia	2	(1.8)
Ischemic heart disease	1	(0.9)

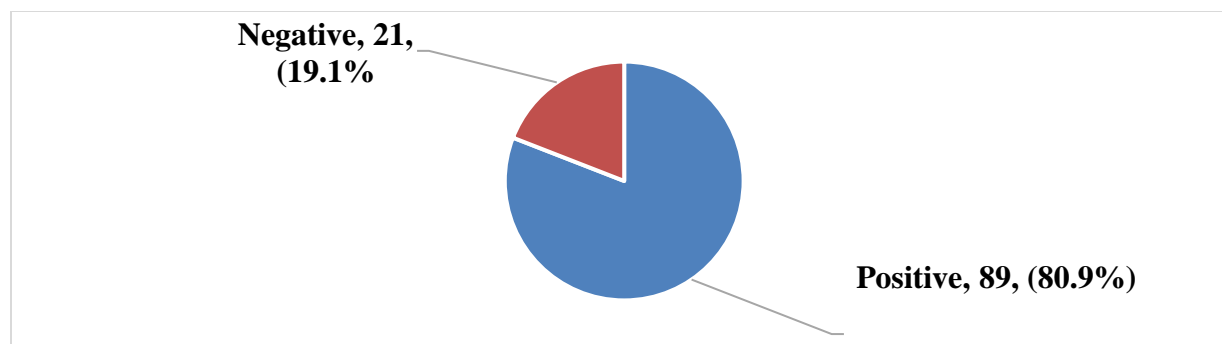The prevalence of seropositive rheumatoid arthritis was 80.9% (Figure 1).

Figure (1). Prevalence of seropositive rheumatoid arthritis.

Around two thirds (64.5%) of patients had positive anti-CCP, 57.3% had positive rheumatoid factor, and 40.9% had both (Table 4).

Table (4). Serological tests positivity.

Serological test	No.	(%) n = 110
Positive Anti-CCP	71	(64.5)
Positive rheumatoid factor	63	(57.3)
Positive both RF and Anti-CCP	45	(40.9)

The most common drugs used in patients' management were methotrexate (79.1%), hydroxychloroquine (47.3%), NSAID (40%), and prednisolone (32.7%), in addition to the other drugs mentioned in (Table 5).

Table (5). Drugs used in patients' management.

	No.	(%) n = 110
Methotrexate	87	(79.1)
Hydroxychloroquine	52	(47.3)
NSAID	44	(40.0)
Prednisolone	36	(32.7)
Leflunamide	19	(17.3)
Salfasalazine	17	(15.5)
Etanercept	14	(12.7)
Humera	5	(4.5)
Remicade	2	(1.8)
Remsima	2	(1.8)
Rituximab	1	(0.9)

Discussion

During this study, the demographic, joint involvement, and serological features of patients with RA were investigated. The patients were followed up in the rheumatology outpatient clinic at Rizgary teaching hospital in Erbil city. The ratio of female: male was 4:1 that is more than what has been reported in Hutchinson D .[13,14] and is similar to the ratio 4:1 in the study done by Namas et al.[15] and comparable to 22:5 ratio in the study done by Mathkhor et al.[16] The endogenous sex hormones, which have complicated effects on the immune system, are likely responsible for this female predominance[17]. Or may be due to that

female patients have frequent visits to rheumatology clinics compared to males in our culture. However, the reason why the condition does not affect men as frequently is still unknown. The smoking rate in this study was 14.5% comparable to the studies done in Basra province by Mathkhor et al. and Namas et al (17%, 11%) respectively. Smoking is one of the well- known factors in the etiology of RA. According to educational level of the patients in this study majority of the patients were illiterate 60%, which is comparable to a study done in Basra province 54.5%. The patients in our study had a mean age of 51.39 years that is similar to the mean age 52.5 years in a study done by Kobak. In this study majority of the patients were either obese (45.5%) or overweight (30%). Most of the patients (70%) in this study were unemployed, while 5.5% were retired. In this study we figured out that the MCP (metacarpophalangeal joint) was the most frequently affected joint 73.6% followed by wrist joint 63.6% .The wrist joint, MCP, and PIP joint involvement in this study were lower than those in a study done in Basra province by Mathkhur et al. while involvement of the knee and ankle were greater than those in a study carried out in Turkey by .Kobak[3;] in this study the prevalence of seropositive rheumatoid arthritis (positive RF or positive anti CCP or positive both) was 80.9% which is close to that reported in the literature. In our study 57.3% of the patients had positive RF comparable to a study conducted by Namas 63.3%. Rates of Positive RF were 65%, 62%, and 60% in English, Malaysian and Kuwaiti patients respectively. most common comorbid diseases among the patients in this study were hypertension 29.1% followed by diabetes mellitus 15.5% and thyroid disease 10%, while dyslipidemia, DM, and thyroid disease in the UAE study were more common. In our study majority of the patients used more than one drug. Among the conventional synthetic disease- modifying antirheumatic drugs(csDMARD) the most common used drug was methotrexate 79.1% similar to a study done by Kobak 81%. Hydroxychloroquine which is an antimalarial drug was the second most common drug used by the patients in this study 47.3%, however 32.7% of our patients in this study used prednisolone which is comparable to 38.3% in a study done by Mathkhur et al. In this study we found that etanercept was the most common biologic DMARD used by the patients in a ratio 12.7% followed by humera 4.5%, while in a study by Mathkhur et al most common biologic was etanercept followed by infliximab.

Conclusion

We can draw the conclusion that our patients with RA were similar to patients from western nations and other researches in terms of demographics, frequency of joint involvement, and serological characteristics, but higher female preponderance and greater illiteracy rates were found.

Conflict of interest

There were no conflicts of interest.

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