TÜBİTAK

Turkish Journal of Medical Sciences

http://journals.tubitak.gov.tr/medical/

Research Article

Turk J Med Sci
(2014) 44: 595-600
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doi:10.3906/sag-1305-135

Clinical and demographic findings of patients with rheumatoid arthritis and ankylosing spondylitis treated in a tertiary care center in Turkey

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Received: 31.05.2013 • **Accepted:** 23.09.2013 • **Published Online:** 27.05.2014 • **Printed:** 26.06.2014

Background/aim: Rheumatoid arthritis (RA) and ankylosing spondylitis (AS) are 2 common rheumatic diseases that are frequent causes of disability. In this descriptive study, demographic, clinical, and laboratory findings of patients with RA and AS being followed in a tertiary care center in Turkey were reported.

Materials and methods: The patient data of 45 RA and 45 AS cases were collected retrospectively from electronic medical records. Demographic findings, clinical and laboratory assessments of disease activity, drugs used for the treatment, and effect on quality of life of patients with RA and AS were analyzed.

Results: In RA patients, 27% had mild, 44% had moderate, and 29% had severe disease and 25% of the patients had satisfactory functional state. In AS patients, the mean Bath Ankylosing Spondylitis Disease Activity Index score was 4.6 ± 2.3 and 64% had active disease. Sixteen percent of the patients with AS reported satisfactory functional state. In RA cases, the highest percentage of patients were treated with biological agents. In AS cases, 24% of patients were treated with NSAIDs and 22% received biological agents.

Conclusion: In our tertiary care center, the majority of patients with RA and AS had active disease with unsatisfactory functional states.

Key words: Rheumatoid arthritis, ankylosing spondylitis, demographics

1. Introduction

Rheumatoid arthritis (RA) and ankylosing spondylitis (AS) are 2 common rheumatic diseases that are frequent causes of disability. RA affects almost 1% of the population worldwide and is more prominent in women than men with a ratio of 3.6 to 1.7 (1). The American College of Rheumatology/European League Against Rheumatism (ACR/EULAR) 2010 classification criteria for rheumatoid arthritis represent an improvement in the diagnostic approach to the disease and promote the goal of early intervention to improve outcomes (2).

AS, the prototype disease in the spectrum of spondyloarthritides, has a prevalence of 0.5% in the general population with a male-to-female ratio of 2:1 to 3:1 (3).

In a recent study conducted in western Turkey, the prevalence rate was 0.12% for AS and 0.32% for RA (4).

This study analyzed the demographic data, clinical and laboratory parameters of disease activity, and drugs used in the treatment of RA and AS patients being followed in a tertiary care center in Turkey.

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2. Materials and methods

2.1. Study design and patients

This was a retrospective study done on patients with RA and AS, seen between January 2012 to April 2013 in a university hospital's Department of Physical Medicine and Rehabilitation. The study was approved by the institutional ethics committee. The patients' data were collected from electronic medical records. The routine clinical forms used by the Department of Physical Medicine and Rehabilitation for RA and AS patients were included in the data collection. The medical records of a total of 90 patients (45 with each diagnosis) were included in this study. Incomplete data or forms of AS or RA patients were excluded.

2.2. Rheumatoid arthritis

The 2010 ACR/EULAR classification criteria for RA were used for the diagnosis of RA (2). The RA forms included age, sex, duration of the disease, drugs used for the treatment of RA, clinical parameters of disease activity including morning stiffness, visual analog scale (VAS) scores, number of tender joints, number of swollen joints, and Disease Activity Score 28 (DAS28) (5). Other assessments included patient global assessment score

(GAS) and physician GAS (6), RA health assessment questionnaire (RA-HAQ), and RA quality of life scale (RA-QoL) (7). A score of DAS28 of <3.2 was accepted as mild RA, scores between 3.2 and 5.1 as moderate RA, and scores of >5.1 as severe RA (8). A HAQ cut-off value of ≥1.5 is accepted as signifying an unsatisfactory functional state (9).

The laboratory assessment of disease activity included erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP).

2.3. Ankylosing spondylitis

The modified New York criteria were used for the diagnosis of AS (10). The AS forms included age, sex, duration of the disease, drugs used for the treatment of AS, and clinical parameters of disease activity including VAS, Schober test, and chest expansion values. Other assessments included the Bath Ankylosing Spondylitis Functional Index (BASFI) (11), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) (12), patient GAS (13), physician GAS (13), AS-HAQ (14), and AS-QoL (13). The laboratory assessment of disease activity included ESR and CRP levels. A BASDAI score of ≥4 was accepted as signifying active disease (9).

2.4. Statistical analysis

Nominal data were expressed as mean ± standard deviation (SD). Categorical variables were presented as numbers and percentages.

3. Results

Demographic characteristics of the patients with RA (n = 45) and AS (n = 45) are shown in Table 1. The male-to-female ratio was 1:3.5 for RA patients and 3.1:1.4 for AS patients. The mean age for the patients followed with the diagnosis of RA was much higher (53.67 ± 11.6 years, median: 51 years) compared to patients with AS (34.13 ± 10.21 years, median: 31 years). The mean duration of the disease for RA patients was 6.12 ± 6.4 years, the median was 4 years, and the range was 1 month to 30 years. For the patients with AS, the mean duration of the disease was 6.1 ± 5.2 years, the median was 5 years, and the range was 1 month to 20 years.

3.1. Rheumatoid arthritis

Clinical disease activity for RA was assessed using patient reported morning stiffness (in minutes), VAS, tender joints and swollen joints on physical examination, and laboratory findings including ESR and CRP. DAS28 scores were calculated as described previously (5) (Table 2).

The mean duration of morning stiffness was 13.84 ± 28.9 min (median: 1 min, range: 0–120 min). On physical examination, the mean number of tender joints was 8.4 ± 8.6 (median: 6, range: 0–28) and the mean number of swollen joints was 1.9 ± 2.7 (median: 1, range: 0–13). In patients with RA, the mean ESR was 27.82 ± 11.9 mm/h and the median was 21.5 mm/h, and 25 patients (56%) had ESR values of over 20 mm/h at the time of data collection. The mean CRP level was 10.32 ± 12.3 mg/L and the median was 5 mg/L, and 20 patients (44%) had CRP of >5 mg/L at the time of data collection. The mean DAS28 score was 4.3 ± 1.6 (median: 4.4, range: 1.52–7.78) (Table 2). According to the DAS28, 27% of RA patients had mild disease, 44% had moderate, and 29% had severe.

3.2. Ankylosing spondylitis

Clinical disease activity for AS was assessed on physical examination using chest expansion measurement, Schober test, VAS, and BASDAI, and physical functioning state was assessed by BASFI scores as described previously (11,12).

The mean chest expansion was 5.33 ± 1.8 cm (median: 5 cm, range: 1.5–9.0 cm). The mean Schober test result was 4.7 ± 1.5 cm (median: 4.5 cm, range: 1–8 cm). The mean BASDAI score was 4.6 ± 2.3 (median: 4.6, range: 0.8–9.0), and 64% of patients had active disease based on BASDAI scores. The mean BASFI score was 3.29 ± 2.9 (median: 2.5, range: 0–12.1). In patients with AS, the mean ESR was

Table 1. Demographic findings of patients with rheumatoid arthritis (RA) and ankylosing spondylitis (AS).

	RA	AS
N	45	45
Sex (M/F)	10/35	31/14
Age (years) Mean ± SD (median)	53.67 ± 11.6 (51)	34.13 ± 10.21 (31)
Duration (years) Mean ± SD (median)	6.12 ± 6.4 (4)	6.11 ± 5.2 (5)

N: Number of patients, M: number of males, F: number of females.

Table 2. Clinical and laboratory disease activity measurements of patients with RA.

	Mean ± SD	Median	Range
Morning stiffness (min)	13.84 ± 28.9	1	0–120
Tender joints (N)	8.4 ± 8.6	6	0–28
Swollen joints (N)	1.85 ± 2.7	1	0–13
ESR (mm/h)*	27.82 ± 11.9	21.5	2–64
CRP (mg/L)*	10.32 ± 12.3	5	1.1–48.7
DAS28	4.3 ± 1.6	4.4	1.52–7.78

N: Number, *: based on the last values at the time of data collection.

16.54 ± 18.6 mm/h and the median was 9 mm/h, and 7 patients (16%) had ESR values of >20 mm/h at the time of data collection. The mean CRP level was 10.07 ± 19.9 mg/L and the median was 3 mg/L, and 7 patients (16%) had CRP of >5 mg/L at the time of data collection (Table 3).

3.3. Physician and patient GAS

The severity of disease for both RA and AS was evaluated using physician GAS and patient GAS as described elsewhere (6,12,13) (Table 4). For RA, the mean physician GAS was 4.11 ± 2.9 (median: 5, range: 0–8) and the mean patient GAS was 4.64 ± 2.4 (median: 5, range: 0–10), and for AS, the physician GAS was 4.8 ± 2.8 (median: 5, range: 0–10) and the mean patient GAS was 4.9 ± 3.1 (median: 5, range: 0–10).

3.4. HAQ and QoL

The quality of life for RA and AS patients was evaluated using HAQ and QoL scales (Table 4). For patients with RA, the mean HAQ score was 13.04 ± 12.9 (median: 10, range:

Table 3. Clinical and laboratory disease activity measurements of patients with AS.

	Mean ± SD	Median	Range
Chest expansion (cm)	5.33 ± 1.8	5	1.5–9.0
Schober (cm)	4.7 ± 1.5	4.5	1–8
BASDAI	4.6 ± 2.3	4.6	0.8–9.0
BASFI	3.29 ± 2.9	2.5	0–12.1
ESR (mm/h)*	16.54 ± 18.6	9	1–70
CRP (mg/L)*	10.07± 19.9	3	0.4–98.7

*: Based on the last values at the time of data collection.

Table 4. Evaluation of the severity of the disease by patients and physicians and its effect on quality of life in patients with RA and AS.

	RA*	AS*
Physician GAS	4.11 ± 2.9 (5)	4.8 ± 2.8 (5)
Patient GAS	4.64 ± 2.4 (5)	4.9 ± 3.1 (5)
HAQ	13.04 ± 12.9 (10)	3.64 ± 2.2 (3)
QoL	14.13 ± 9.1 (10)	8.91 ± 5.3 (10)

*: Values given as Mean ± SD (median), GAS: global assessment score, HAQ: health assessment questionnaire, QoL: quality of life scale.

0–51) and the mean QoL score was 14.13 ± 9.1 (median: 15, range: 0–30). In RA patients, 25% had a HAQ score of <1.5 (satisfactory functional state).

For patients with AS, the mean HAQ score was 3.64 ± 2.2 (median: 3, range: 0–11) and the mean QoL score was 8.91 ± 5.3 (median: 10, range: 0–18). In AS patients, 16% had a HAQ score of <1.5 (satisfactory functional state).

3.5. Treatment

The drugs used in patients with RA are listed in Table 5. A high percentage (31.1%) of patients with RA were only on nonsteroidal antiinflammatory drugs (NSAIDs). Only a small percentage was taking a single disease-modifying antirheumatic drug (DMARD), whereas 13.3% were taking combined DMARDs. However, the highest percentage of patients (35.6%) were treated with biological agents.

For AS patients, the treatment regimens used are shown in Table 6. Twenty-four percent of patients with AS were treated with NSAIDs and another 24% with an NSAID-sulfasalazine combination. About 22% of patients with AS were receiving biological agents and 13% were not on any medication at the time of data collection.

4. Discussion

In this study, the clinical and laboratory characteristics of the 2 most common rheumatic diseases, namely RA and AS, were analyzed. There are a few studies reported from Turkey about the clinical characteristics of RA and AS (15–19). Since the sample size of this study is small, rather than being an epidemiologic study, it represents the data of a small sample of patients in an urban area of Turkey treated in a tertiary care center and forms a descriptive study.

In this study, the male-to-female ratio for RA was 1:3.5 and for AS was 3.1:1.4, both very similar to the reported epidemiologic studies worldwide (1,3). In our cross-sectional study, the mean age of patients with RA was much higher (53.67 ± 11.6 years) compared to patients with AS (34.13 ± 10.21 years), and this is consistent with the natural course of the disease and the fact that RA presents much later compared to AS in adult populations (8).

The activity of the disease can be assessed by using different measures including the DAS28 for RA and the

Table 5. Drugs used in treatment of patients with RA.

	N	%
No drugs	4	8.9
NSAIDs*	14	31.1
Single DMARD**	1	2.2
Combined DMARDs	6	13.3
Biological agents	16	35.6
Biologic agent-DMARD combination	4	8.9

*: Nonsteroidal antiinflammatory drugs, **: disease-modifying antirheumatic drugs.

Table 6. Drugs used in treatment of patients with AS.

	N	%
No drugs	6	13.3
NSAIDs*	11	24.4
Sulfasalazine	4	8.9
NSAID-sulfasalazine combination	11	24.4
Biological agent	10	22.2
Others	3	6.7

*: Nonsteroidal antiinflammatory drugs.

BASFI and BASDAI for AS, and the functional state of the disease can be assessed with the HAQ for both.

In our study, the percentage of patients with a DAS28 score of >3.2 (moderate to severe disease) was 73%. This percentage is very similar to that of a study done in Turkey with 562 patients (73.9%) in 2008 (19). According to the HAQ scoring, which is used to evaluate the functional state of the patients with RA, only 25% were functionally satisfactory. This finding was in parallel to DAS28 scoring in our study.

In patients with AS, according to the BASDAI, 64% of patients had active disease. This percentage is similar to that in a previous study done in Turkey (19). In AS patients, only 16% of the patients had a HAQ score of <1.5 (satisfactory functional state). Although AS patients seem to have less severe disease activity and better functional states compared to RA patients, it still seems to be quite severe disease in most cases in our study. Since this study was done in a tertiary care center with referrals of the most severe cases, this high percentage of severe disease affecting the functional state of the majority of patients is not surprising.

The treatment regimen used in RA in this cross-sectional study at the time of data collection included NSAIDs, DMARDs, biologic agents, and various combinations of these. In RA, the most common treatment used was biological agents at a rate of 35.6%, followed by NSAIDs alone. The use of combined DMARDs was 6 times more common compared to the use of a single DMARD. Previous studies show that the most common treatment prescribed is DMARDs, at a rate of 72%–93% (19,20). The discrepancy between our data and the data in the literature may be due to biological agents being more widely available in our country in the past 10 years. Another finding noted was that the percentage of patients on NSAIDs alone seems to be quite high, which may be due to the fact that the patients who are on NSAIDs are more frequently referred to our tertiary center due to inadequate control of the disease with NSAIDs alone.

In our study, the most common treatments prescribed for AS patients included NSAIDs alone and the NSAID-sulfasalazine combination (24.4% each). In contrast to a previous study in Turkey (19), none of our patients were on methotrexate treatment since recent studies have shown that it is ineffective in modifying the course of the disease (21). The second most common treatment regimen was biological agents at 22.2%. About 13% of the patients were not on any medications due to either noncompliance/patient preference or due to inactive disease.

In conclusion, in our tertiary care center, the majority of patients with RA and AS had active disease with unsatisfactory functional state. Investigating the reasons for the high rate of active disease in a tertiary care center is worthwhile, and this would be helpful in defining new and better strategies in the control of these diseases.

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