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A Retrospective Study on Clinical Characteristics of Rheumatoid Arthritis Patients

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ABSTRACT

To study the clinical characteristics of rheumatoid arthritis (RA) patients attending the rheumatology unit in a private hospital. The demographic characteristics, laboratory parameters, comorbidities, articular manifestations and pattern of prescriptions were studied from the case records . A total of 75 RA patients were studied. Female preponderance was observed and the ratio was found to be 3:1. The frequent laboratory measurements were found to be erythrocyte sedimentation rate (ESR), hemoglobin (Hb), and other hematological parameters. The articular manifestations were found to be knee, wrist, ankle, shoulder and elbow joints. The most common comorbidity was found to be hypertension and diabetes mellitus. The prescription pattern revealed the disease modifying antirheumatic drugs (DMARDs) as the first line drugs followed by steroids and non –steroidal anti-inflammatory drugs (NSAIDs). The first line DMARD was found to be methotrexate. The tendency of polypharmacy was more and the most combination was DMARD with a steroid and NSAID. The trend reveals aggressive therapy among rheumatologists. Frequent monitoring of adverse drug reactions like hepatic abnormalities for DMARDs and bone densitometry for oral glucocorticoids and drug interactions could further improve the quality of life of RA patients.

Key words: Rheumatoid, CArthritis, DMARD, NSAID, Glucocorticoids, Pharmacy

INTRODUCTION

Rheumatoid arthritis (RA) affects 0.75-1% of the Indian population and the aetiopathogenesis involves genetic factors, development of autoantibodies and synovial inflammation (Neena *et al.*, 2013) Early therapeutic intervention improves the therapeutic outcome dramatically and detection of antibodies and imaging technologies are insisted at these stages. The therapeutic principles involve early initiation of disease modifying antirheumatic drugs (DMARDs) and systematic evaluation of disease activity.

The first line drugs for RA treatment are disease modifying antirheumatic drugs (DMARDs) and methotrexate was available from 1950 and has a long clinical experience. It is used as monotherapy or combination therapy. Biologics are introduced who are non-responders for DMARDs and they are costlier and have similar adverse effect profile. The usage of non –steroidal anti-inflammatory drugs (NSAIDs) had changed in the last decade and cyclooxygenase-2 inhibitors are preferred for long-term use. Glucocorticoids are used for rapid relief from synovitis and combat RA flares.

Studies pertaining to clinical characteristics of Indian RA patients are sparse and studies in this area could be useful in improving quality of life in these patients. In this communication, we report our observations on the clinical characteristics of RA patients attending the rheumatology unit.

MATERIALS AND METHODS

The study was ethically approved and the ethics clearance number is 13/111. The study was conducted in PSG hospitals, rheumatology unit. The data was collected retrospectively over a period of 1 year from September 2012 and August 2012. The case records were verified retrospectively and the

information was recorded on age, gender, associated illnesses (hypertension, diabetes mellitus, and other disorders), articular manifestations (pattern of joints affected), laboratory measurements and study of prescriptions, which included DMARDS, steroids, NSAIDs and the type of combinations.

RESULTS

Data of 75 RA patients were included in the study. No patient was excluded from the analysis. There were 17 (22.67%) males and 58 (77.33%) females (F: M = 3.4:1) and the mean age of the study population was 48.1 ± 12.9. The calculated BMI for women were 24.2 and for men it was 25.4. The mean systolic blood pressure was found to be 124.45 ± 16.57 and mean diastolic pressure was found to be 75.40 ± 12 and the mean pulse pressure was 92.03 ± 18.11. (Table 1)

The patients' initial visit to the rheumatology unit was 3.05 ± 1.83 months. The creatinine levels were 0.71 ± 0.25, the serum glutamic oxaloacetic transferase or aspartate aminotransferase (SGOT or AST) levels were 20.04 ± 11.49 and serum glutamatic pyruvic transaminase or alanine aminotransferase (SGPT or ALT) levels were 19.91 ± 14.62 units / liter. The mean duration of the disease was 4.36 ± 3.81years. (Table 1)

The associated symptoms were morning stiffness, fatigue, joint swelling, joint deformity and difficulty in daily activities like walking, standing, sitting, and polyarthralgia. The duration of morning stiffness was 51.42 ± 33.98 minutes. The number of tender and small joints affected was 13.87 ± 8.94. Most of the patients were at the active stage of the disease, functional class 2-4. The articular manifestations recorded as pattern of joint involvement were mostly knee and wrist. The type of joints affected were metacarpophalangeal (MCP), interphalangeal (IPJ) in case of wrist and in case of elbow it was ulnar joint (UL) followed by ankle and shoulder. Radiographic examination for wrist, knee, elbow, spine and shoulder were done for some of the patients. (Table 1)

Half of the study population had done rheumatoid factor (RF) test and most of them were RF positive. The hematological parameters revealed slight anemic condition. The most prominent comorbidities were hypertension and diabetes mellitus, followed by thyroid disorders, asthma, cerebral disease and renal failure. (Table 1)

Most of the patients had previous treatments with DMARDs stopped due to symptomatic relief and some were on Ayurvedic therapy. The first line DMARD was found to be methotrexate and was administered as monotherapy or combination therapy with other DMARDs like leflunomide, hydroxychloroquine and sulfasalazine. The widely used steroid was prednisolone, followed by deflazocort and NSAID was etoricoxib. The very common prescription pattern was DMARD with a steroid and NSAID. The only biologic therapy found was rituximab and only one patient had been prescribed. In most of the prescriptions H2 blockers such as famotidine or proton pump inhibitors such as rabeprazole were prescribed. All the methotrexate prescriptions had folic acid as adjunct and most of the patients had calcitriol in the prescription. The prescription pattern revealed polypharmacy with DMARDs, steroids, NSAIDs, calcium salts, calcitriol, antihypertensives, antidepressants and antidiabetics. The adverse reactions reported were sleep disturbance and some of the patients skipped medication. (Table 1)

DISCUSSION

This study is designed to obtain information about the clinical characteristics and prescription trends of RA patients attending the rheumatology unit. The study was retrospective and suffers the limitation of this type of investigation. Nevertheless, the results highlight the trends of clinical and prescription patterns. This is a tertiary care based hospital study.

The demographic profile revealed female preponderance similar to previous studies and the case reports does not reveal information about the socio-economic status of the patients. In western countries smoking and alcohol consumption is highlighted as important trigger of RA and previous studies had shown low prevalence of such triggers in Indian female RA patients. The lag time in reaching the rheumatology care is not recorded. Some of the reports revealed the trial for alternative therapies and the present study we found stopping of allopathic

Table 1: Demographic and clinical characteristics of Rheumatoid arthritis patients

Number of patients studied (N)	75
Mean age	48.1 ± 12.9
Female	58 (77.33%)
Male	17 (22.67%)
Female: Male ratio	3.41:1
Mean duration of disease (years)	4.36 ± 3.81
Patients initial visit to rheumatology unit (months)	3.05 ± 1.83
Mean hemoglobin (g%)	12.06 ± 2.20
RBC count (million cells / cu.mm)	4.58 ± 0.37
ESR (mm/hr)	52.57 ± 15.57
RF positive cases	20
RF negative cases	9
Clinical characteristics	
Mean BMI (Female)	24.2
Mean BMI (Male)	25.4
Mean Systolic blood pressure	124.45 ± 16.57
Mean Diastolic blood pressure	75.40 ± 12
Mean Pulse pressure	92.03 ± 18.11
Serum Creatinine (mg/dl)	0.71 ± 0.25
SGOT (U/L)	20.04 ± 11.49
SGPT (U/L)	19.91 ± 14.62
Duration of morning stiffness (minutes)	51.42 ± 33.98
Articular manifestations (Pattern of Joint involvement)	
Knee	57.35%
Wrist	51.87%
Ankle	35.99%
Shoulder	15.96%
Elbow	14.63
Prescription pattern	
1DMARD ONLY (Methotrexate, Leflunomide, Hydroxychloroquine and Sulfasalazine)	24.16
2 DMARDS	6.65
ONLY 1STEROID (Prednisolone)	6.65
ONLY 1NSAID (Etoricoxib)	1.33
1 STEROIDS+ 1NSAID	1.33
ONLY BIOLOGICS (Rituxinab)	1.33
BIOLOGICS+1STEROID	1.33
1 DMARD +1 NSAID	1.33
2 DMARDS + 1NSAID	1.33
1 DMARD+1STEROID+1NSAID	41.23
2 DMARDS+ 1STEROID + 1NSAID	13.33
Comorbidity	
Hypertension	8 (11%)
Diabetes mellitus	8 (11%)
Hypothyroidism	2 (2.66%)
Bronchial asthma	1 (1.33%)
Cerebrovascular accident	1(1.33%)
Renal failure	1(1.33%)

drugs and trying *Ayurvedic* therapy, which may be due to adverse effects or unsatisfactory with the current treatment profile. The body mass index shows the marginal weight increase in these patients (Tembe *et al*., 2008). The articular manifestations of the present study highlights the presence of multiple joint involvement and synovitis in wrist, knee, ankle and shoulder were found to be common. The frequent complaints of the RA patients were morning stiffness, fatigue, disability in joint movements and fever.

Comorbidity profiles play a vital role in deciding the therapy and effectiveness of the treatment. The most common comorbid conditions were hypertension and diabetes mellitus. This is similar to previous studies. The systolic pressure was found to be higher than normal and diastolic pressure was increased to a moderate extent and the creatinine levels were normal (Al-Bishri *et al*., 2013)

In the current study most of the prescriptions had DMARDs and their combinations, which prevents joint damage and suitable for patients with active inflammation. The frequently used DMARD was methotrexate and other drugs of this category were leflunomide, hydroxychloroquine and sulfasalazine. This selection may be due to cost effectiveness and folic acid supplementation could alleviate the hepatotoxicity and gastrointestinal disturbances of methotrexate. Methotrexate has several mechanisms in treating RA and is preferred due to its anti-inflammatory effect through adenosine pathway. Apart from this, other drugs of this class are also having the similar adverse effect profile. Liver functions tests in the current study shows normal levels of hepatic transaminases and this assessment decides the treatment (Georg *et al*., 2008). The usage of steroids at night time may be to provide relief from morning stiffness, which is the characteristic feature of RA (Cornelia *et al*., 2010). NSAID found in the present study is etoricoxib is gastrofriendly and provides prompt relief from joint pain (Clarke, 2007). Prescription pattern reveals the trend of polypharmacy and this may be due to existing comorbidies, and expectation of immediate relief by the patients. Careful monitoring of disease remission status and adverse events could improve the quality of life and therapeutic outcome of the disease.

To conclude the present study shows the most common complaints, frequently used drug combinations in RA patients. The higher use of DMARDs and their combinations reveal intensive therapy and use of NSAIDs and steroids for symptomatic relief. Chronic use of these drugs warrants the need for assessment of disease remission and frequent adverse effect monitoring.

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