

PATTERNS OF DISEASE IN RHEUMATOID ARTHRITIS

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SYNOPSIS

70 patient with rheumatoid arthritis were studied from 1980-1985. Females were more affected than males; the mean age of disease was 46.0 years, 45 patients were below 50 years of age. Disease manifestations were mainly articular, the proximal interphalangeal joint and knee being frequently affected. Extra-articular findings were uncommon. 59 patients needed disease modifying, slow-acting drugs such as sodium aurothiomalate and penicillamine. In spite of disease activity, 63 patient were in functional class I.

INTRODUCTION

Rheumatoid arthritis is a chronic illness of unknown aetiology. It is a major cause of musculoskeletal pain in the population and it brings with it social and economic disadvantages (1). An estimated 1—2% population is affected by the disease (2).

This study was undertaken to analyse the disease process in patients attending an outpatient clinic in our unit. It describes the pattern of disease and drug treatment for rheumatoid arthritis patients.

MATERIALS AND METHODS

70 patients with rheumatoid arthritis were treated from 1980—1985. 44 had classical rheumatoid arthritis and 26 definite rheumatoid arthritis according to the American Rheumatism Association (3). The patients were referred to the department by general practitioners, orthopaedic surgeons and physicians from other medical units.

Rheumatological follow-up data included the number of painful or swollen joints and duration of morning stiffness. Clinical activity was measured by erythrocyte sedimentation rate. Full blood counts, liver and renal function tests, C-reactive protein and rheumatoid factor were performed on all patients. Blood and urine tests were done at each visit on patients on second-line therapy. This was to monitor the progress of the disease and possible side-effects. Radiological changes were evaluated according to Steinbrocker's anatomical classes (4). Functional class was determined by the American Rheumatism Association criteria (3).

RESULTS

Age and sex distribution

The age varied from 21—76 years, with a mean age of 46.0 years. Females were more affected than males (64 females, 6 males). 59 patients were Chinese, 7 Indians and 4 Malays. The duration of illness ranged from 6 months to 30 years (mean 6.48 years). The age distribution is shown in Fig. 1.

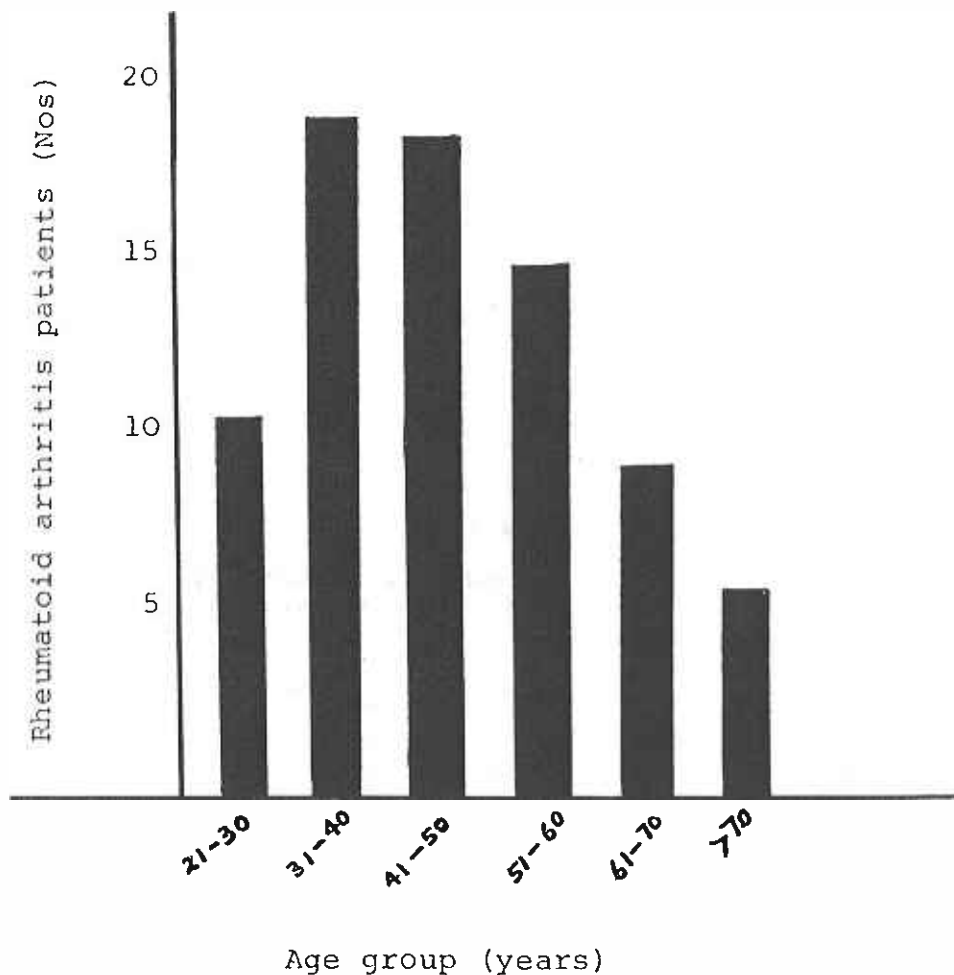


Fig. 1. Age distribution of rheumatoid arthritis patients.

Articular findings

The proximal interphalangeal joint and knee were the most frequent joints involved (Fig. 2). The knee was the first joint to be involved in 23 patients. Temporomandibular joint and hip pain were infrequent, present in 8 and 6 patients respectively.

Extra-articular manifestations

Extra-articular findings were uncommon. 9 patients had symptoms suggestive of carpal tunnel syndrome. None had electromyographic studies. 52 patients had positive rheumatoid factor (latex) test and in 2, subcutaneous nodules were present. Iritis was found in one patient and 2 complained dryness of eyes. No patients had any clinical evidence of pulmonary involvement and amyloidosis was absent.

Drugs

Table 1 outlines the current mode of anti-rheumatic therapy. Non-steroidal anti-inflammatory drugs formed an integral part in the treatment of patients. Polypharmacy was practised. A mean of 4.5 drugs were used. One patient had 12 drugs during the course of her illness. Gastro-intestinal bleeding developed in 3 patients who required hospitalization and gastroscopy.

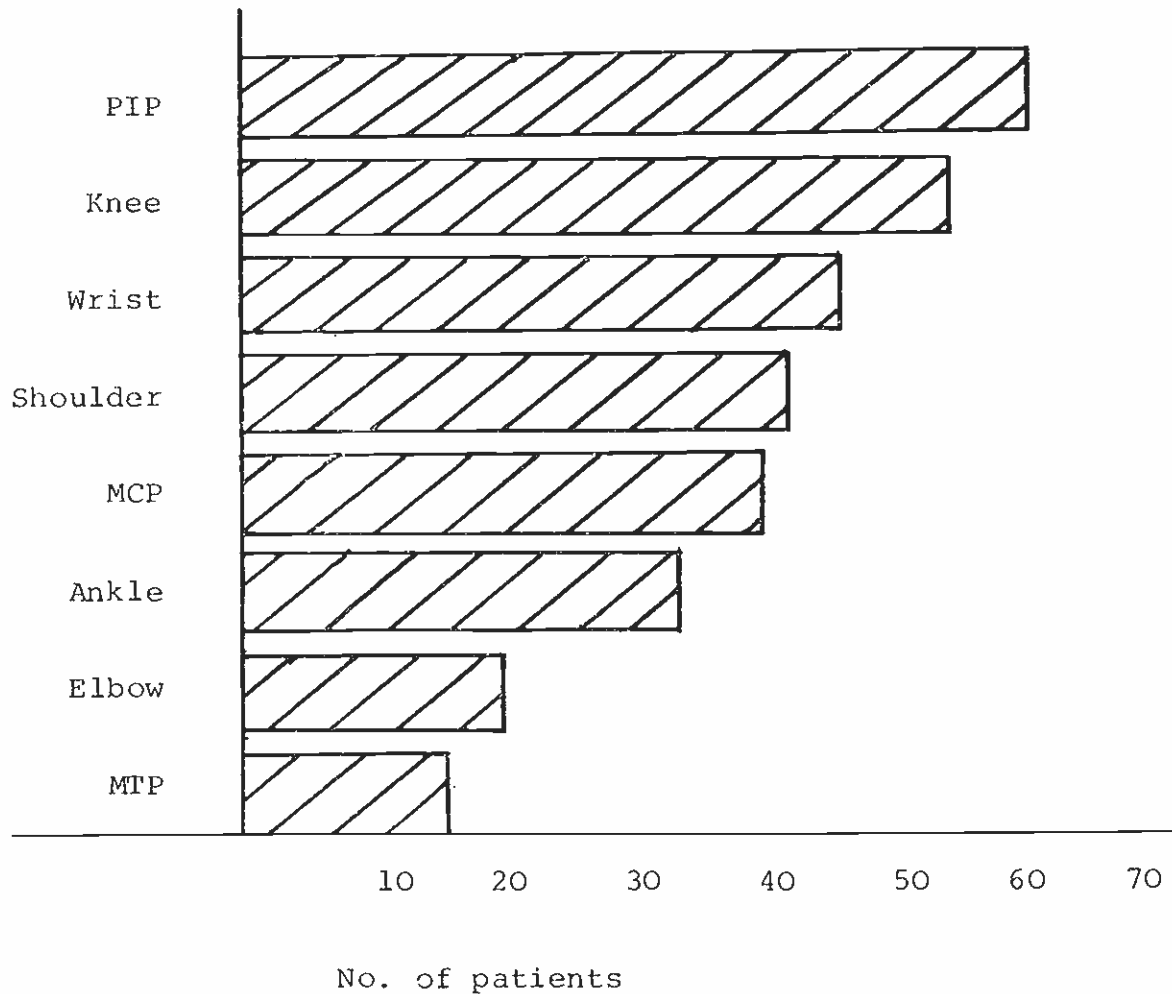


Fig. 2. Pattern of joint involvement.

TABLE 1: PATTERN OF DRUG UTILISATION

Drugs	No. of Patients
NSAID	80
Prednisolone	36
Intra-articular steroids	27
Chinese medication/herbs	30
Acupuncture	30
Disease modifying drugs	59

36 patients had received systemic corticosteroids at doses ranging from 5–15 mg daily. Traditional medicines and acupuncture were adjuncts in the therapy of 30 patients (42.8%).

59 patients required second-line therapy with disease modifying agents (84.2%) and 55 patients were still on the drugs at the time of the study. Rash was the commonest side-effect (Table 2). Adverse effect or lack of efficacy were the two main reasons for withdrawal of these drugs in 21 patients. A drug was deemed ineffective when there is no clinical improvement after 6 months of continuous therapy.

TABLE 2: SIDE-EFFECTS OF DISEASE-MODIFYING DRUGS

Adverse effect	Na aurothiomalate			
	Penicillamine (No.)	Myocrisin (No.)	Auranofin (No.)	Methotrexate (No.)
Rash	3	6	2	0
Proteinuria	1	2	0	0
Nausea	1	0	0	0
GIT upset	0	0	3	0
Leucopenia	0	0	0	1
Mouth ulcers	0	4	0	0

Fig. 3 outlines the use of slow-acting, disease modifying drugs. Gold salts and penicillamine were the most frequently prescribed drugs.

Radiological changes

X-ray examination showed pronounced changes (Stages 3 and 4) in 36 patients (51%). Erosions were present in 49. Nevertheless, 63 patients were in functional class I.

Surgical intervention

10 patient required surgical intervention (Table 3). One patient had an infected hip arthroplasty with sinus formation. Removal of the infected prosthesis and long term antibiotic treatment (6 weeks) resulted in closure of the sinus.

TABLE 3: ORTHOPAEDIC PROCEDURES PERFORMED

Surgical procedure	No. of patients
Synovectomy Knee	4
Wrist	3
Elbow	1
Bilateral total hip replacement	2
Removal of ulnar styloid	2
Excision arthroplasty (Flowers' operation)	1
Arthodesis knee	1

A total of 38 patients developed deformities (54.2%). Despite deformities, 30 patients (42.8%) were in functional class I. Only one patient was severely disabled.

Disease modifying drug usage (%)

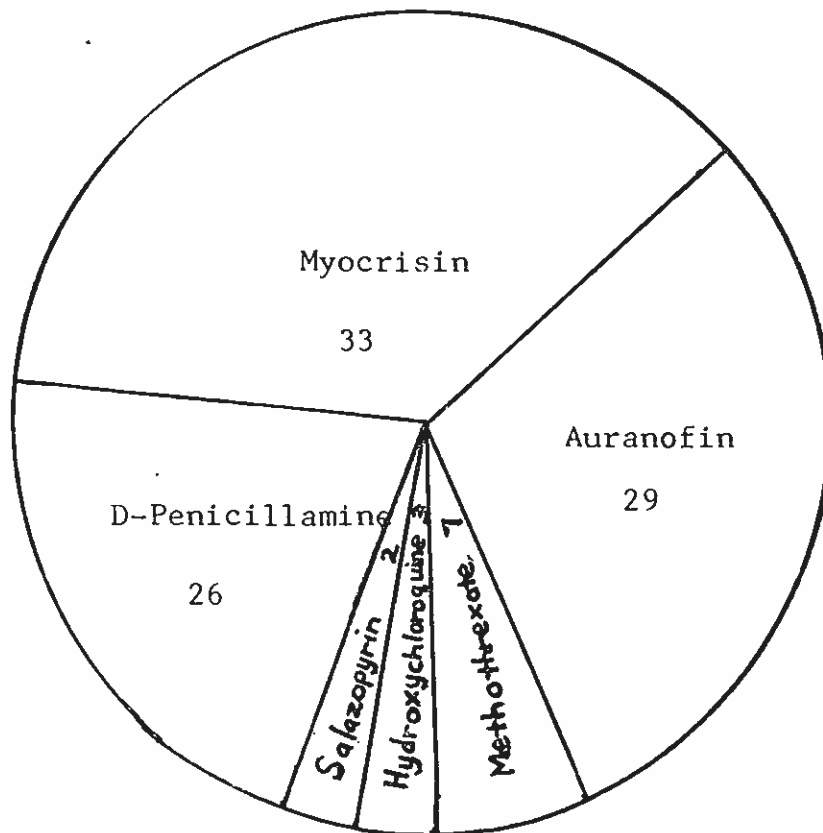


Fig. 3. Prescribing pattern for disease-modifying drugs

DISCUSSION

Our study was similar to epidemiological data on sex distribution in rheumatoid arthritis (5,6), there being greater prevalence in females than in males. However, the age distribution of our patients differed in that the majority were under the age of 50 years (60%) (7).

Extra-articular manifestations were infrequent. Subcutaneous nodules were present in 2 patients although 43 had sero-positive, erosive disease. Amyloidosis, a known complication of rheumatoid arthritis, was absent in our study despite the disease being present for 30 years in one patient. The reported incidence of amyloid varies from 3.3 to 60 per cent (8,9). The lack of extra-articular findings is striking and emphasizes the characteristic articular symptoms as the predominant feature of the disease in our patients.

Non-steroidal anti-inflammatory drugs (NSAID) were prescribed to all patients and polypharmacy was a common practice. Indomethacin was the commonest NSAID prescribed, it being readily available in all government clinics. Systemic corticosteroids were consumed by half of our patients despite its limited value in the long term management of patients. Acupuncture and traditional medications formed part of the armamentarium in the treatment of 30 patients although all denied long term benefit from them. The deep-seated belief in the value of these forms of therapy remains unchallenged.

The vast majority of patients (84.2%) received specific remittive therapy in the form of slow-acting anti-rheumatic drugs, indicating that most patients had severe disease and sodium aurothiomalate, auranofin and D-penicillamine were the 3 most frequently prescribed drugs. The prescribing data reflect the unit policy of choosing gold salts as the first line disease modifying drug. Serious toxic effects that warranted termination of therapy was proteinuria. Auranofin produced no serious side-effects.

Functional capacity was normal in 63 patients (90%) and is not necessarily dependent on existing joint deformities. Only one patient was confined to the wheelchair.

Radiological changes were evident in 50 patients (71.4%) at the time of first visit. Previous studies (10,11) have used radiological progression of arthritic changes as an index of long term outcome in rheumatoid arthritis, but doubt remain as to whether the different radiological methods used in these studies give comparable results or even whether they accurately represent disease activity (2).

Orthopaedic surgery was required in 10 patients, synovectomy being a common operation in our study. However, hip and knee reconstructive surgery have increasingly been reported to be the most frequently performed first operation (13).

In conclusion, our study show that patients with rheumatoid arthritis have severe disease, frequently requiring second-line disease-modifying drugs. This group of patients seen in our unit form the tip of the ice-berg phenomenon in rheumatoid disease. Submerged below the ice-berg are milder cases that do not reach hospital for specialised rheumatological care. An extensive study of the disease in the population and longer follow-up would shed more information on this chronic, painful and disabling disease.

REFERENCES

1. Meenan RF, Yelin EH, Nevitt M, Epstein WV: The impact of chronic disease. A Sociomedical profile of rheumatoid arthritis. *Arthritis Rheum* 1981; 24: 544-9.
2. Hughes GRV. Rheumatoid arthritis. In connective tissue disease. London Blackwell Scientific publications 1977; p 86-129.
3. Ropes MW: Diagnostic criteria for rheumatoid arthritis; 1958 revision by a committee of the American Rheumatism Association. *Ann Rheum Dis* 1959; 18: 49-53.
4. Steinbrocker O, Traeger CH, Batterman RC: Therapeutic criteria in rheumatoid arthritis. *JAMA* 140: 659, 1949.
5. Hochberg MC: Adult & juvenile rheumatoid arthritis: current epidemiological concepts. *Epidemiol Rev* 1981; 3: 27-41.
6. Linos A, Worthington JW, O'Fallon WM, Kurland LT: The epidemiology of rheumatoid arthritis in Rochester, Minnesota. A study of incidence, prevalence and mortality. *Am J Epidemiol* 1980; 111: 87-98.
7. Friesen WT, Hekster YA, Van De Putte LBA, Gribrau FWJ: Cross-sectional study of rheumatoid arthritis treatment in a university hospital. *Ann Rheum Dis*. 1985; 44: 372-378.
8. Rosenberg EF, Baggonstoss AH, Hendi PS: The cause of death in 30 cases of rheumatoid arthritis. *An Intern Med* 1943; 19: 114-115.
9. Teilum G, Lindahl A: Frequency and significance of amyloid changes in rheumatoid arthritis. *Acta Med Scand*. 1954; 149: 449-455.
10. Sharp JT, Lidsky MD, Collins LC, Moreland J: Methods of scoring the progression of radiological changes in rheumatoid arthritis: correlation of radiologic, clinical and laboratory abnormalities. *Arthritis Rheum* 1971; 14: 706-20.
11. Larsen A, Dale K, Eek M: Radiographic evaluation of rheumatoid arthritis and related conditions by standard reference films. *Act Radiol (Diag)* 1977; 18: 481-91.
12. Goton JP: Problem associated with the measurement of radiologic progression of disease in rheumatoid arthritis. *J Rheumatol* 1983; 10: 177-9.
13. Bradlow A, Mowat AG: Comparison of reconstructive orthopaedic surgery in patients with seropositive and seronegative rheumatoid arthritis. *Br J Rheumatology* 1985; 2: 178-186.