

## Employment in ankylosing spondylitis

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**SUMMARY** All patients with ankylosing spondylitis attending our rheumatology clinics were reviewed to assess the effect of their disease on employment. Back movement was measured in three planes, chest expansion determined, and peripheral joint involvement was noted to see whether these correlated with work capability. Sixty patients were reviewed (47 men, 13 women; mean disease duration 24.3 years). Nine were unemployed, but only four of these attributed this condition to ankylosing spondylitis. Although all four had severe neck, back, and hip involvement, this did not differentiate them from other patients who were fully employed. There was no relationship between disease duration and employment. The prospect for continued employment in ankylosing spondylitis is good even when the disease is long standing and severe.

Ankylosing spondylitis (AS), a disease which develops in early adult life, can lead to severe deformity. However, two large reviews of AS published during the 1950s reported that employment could be continued in up to 80% of patients, and life was rarely shortened.<sup>1,2</sup>

Over the past 30 years the management of AS has changed considerably. Radiotherapy is no longer used. Non-steroidal anti-inflammatory drugs and physiotherapy have become the mainstays of medical treatment.<sup>3</sup> Hip arthroplasty has added another valuable dimension to the surgical management of some patients.<sup>4</sup>

Since these changes in therapy there has been only one study looking specifically at employment in AS.<sup>5</sup> This study had similar findings to those of the original reviews,<sup>1,2</sup> but the high mortality rate (42%) and the failure of follow up (22%) make accurate interpretation of their results difficult.

In this study we reviewed a stable population of patients with AS to assess the effect of the disease on their employment. The influence of disease duration and back, neck, and peripheral joint involvement were assessed.

### Patients and methods

All 84 patients with the diagnosis of AS who attended the two rheumatology clinics in Auckland

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between 1977 and 1983 were considered for study. Nine patients could not be contacted (one had died, one refused to participate, two had left the country, and five could not be located).

Full clinical assessment and review of x-rays of all 75 remaining patients yielded 60 (47 men, 13 women) who satisfied the New York criteria for AS.<sup>6</sup> The mean age was 44.2 years (range 25-70) and the mean disease duration was 24.3 years (range 4-45). HLA-B27 was presented in 92.4% of the 53 patients tissue typed.

Patients were seen and examined by two of us (L. E. McG, H. H. H.). A history of clinical and employment details was obtained and a full musculoskeletal examination performed. Back movement was assessed in three planes by the method of Moll and Wright,<sup>7-11</sup> chest expansion measured, and the sites of peripheral joint involvement noted.

Neck movements were divided into four categories of severity (Table 1). The normal ranges of neck

Table 1 Categories used to express the restriction of neck movement

Category	Range of movement
Full	Normal range of movement
Mild	≥two-thirds normal range of movement in all directions
Moderate	≥one-third normal range of movement in all directions
Severe	<one-third normal range of movement in any direction

Table 2 *Employment groups in the AS patients population*

	No. of patients
Full time employment	46
Domestic duties (housewives)	5
Unemployed	
(i) Not attributed to AS	5
(ii) Attributed to AS	4
Total	60

movements were considered to be: flexion 0–45°, extension 0–45°, lateral flexion 0–45°, and rotation 0–60°. <sup>12</sup>

X-rays of the sacroiliac and thoracolumbar spine were reviewed independently by three observers (two rheumatologists and a skeletal radiologist). The majority opinion on the grading of the sacroiliitis was taken in all cases except those where the observers differed by more than one grading, and here the average was used.

The types of employment were divided into five categories. These were heavy manual (e.g., farming, construction), light manual (e.g., electrical fitting, printing), sedentary (e.g., clerical managerial), domestic duties, and professional.

### Results

The employment details of all patients are shown in Table 2. The five women who could perform a full range of domestic duties without assistance were considered to be employed. In all, nine patients were unemployed, but only four attributed their loss of work to AS. Of the remaining five unemployed patients one was a paranoid schizophrenic, another was mentally retarded, a third could not work after injuries sustained in a motor vehicle accident, and two patients had been made redundant when their factories closed.

The majority of patients (32 of the 51 employed) were either in sedentary (19 patients) or light

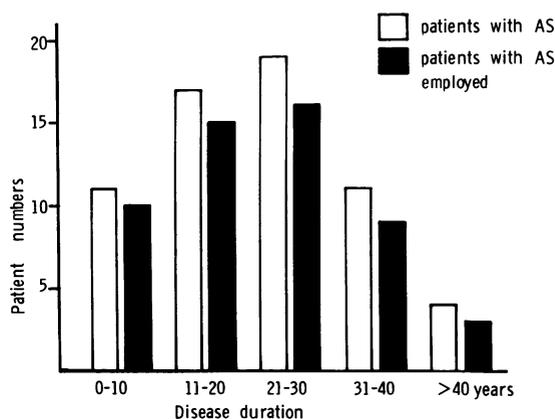


Fig. 1 *Relationship between duration of ankylosing spondylitis and employment.*

manual employment (13 patients). Nine worked in a professional capacity and five performed domestic duties full time. Only five patients had a heavy manual job. A total of five patients stated that they had changed their work because of AS, but none of these had been doing heavy manual jobs. The four unemployed patients who attributed their loss of work to AS had all been on light manual labour.

The relationship between disease severity and work capacity is illustrated in Table 3. Severe neck and/or thoracic involvement did not adversely effect employment. Severe restriction of movement in the lumbar spine or symptomatic hip disease did impair work capability to a greater extent (60% and 73.9% respectively), but the majority of patients were still able to work. However, when the disease was of such severity that hip replacement surgery was required, only two of the five patients could continue to work despite the improvement in hip function the surgery attained in all five cases.

The correlation between the duration of AS and employment is shown in Fig. 1. A constant proportion of patients is employed whatever the duration of AS.

Table 3 *Relationship between disease severity and employment*

	No. of patients	Number employed	%
Patients with AS in study	60	50	83.3
Patients with severe neck involvement	31	25	80.6
Patients with severe thoracic involvement (i.e. chest expansion $\leq$ 2 cm)	19	15	78.9
Patients with severe lumbar involvement (modified Schober's test $\leq$ 2 cm)	20	12	60.0
Patients with hip involvement	23	17	73.9
Patients with hip replacement	5	2	40.0

**Discussion**

This study shows that patients with AS have a very good prospect for continued employment. More than 80% had full-time jobs which they performed without difficulty, a finding similar to that of Blumberg and Ragan<sup>1</sup> and Wilkinson and Bywaters<sup>2</sup> in studies performed during the 1950s. However, unlike these authors we did not find that employment prospects diminished with increasing disease duration.

The unemployed patients could be considered in two groups, those attributing their loss of work to AS and those, the majority, who had lost their jobs for other reasons. If those patients were incapacitated for reasons other than AS, such as paranoid schizophrenia, trauma, and mental retardation, were excluded, the unemployment rate for AS was comparable to that of the normal population of this country.<sup>13</sup>

The types of employment of the AS patients ranged from heavy manual to light domestic duties. The proportion in heavy manual employment was only 10%, but no patients had changed their jobs from heavy manual employment because of their AS.

Work capability was well preserved unless there was marked reduction in lumbar spine mobility or hip surgery had been performed. As only two of the five patients who had hip replacement could continue work, the surgical management of AS was not responsible for the good employment record of the whole group.

We conclude that continued employment for patients with AS is now possible in all but a small minority. Those patients in whom work is not possible have severe hip disease as well as back and neck deformities. Even with these deformities none

of our patients were reduced to a wheel-chair or bed bound existence, while up to 12% of patients in previous reviews<sup>1,2</sup> have been in this state. It is tempting to conclude that this may be the result of the widespread use of non-steroidal anti-inflammatory drugs, better patient education, and physiotherapy.

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