CONCISE REPORT

Ankylosing spondylitis in north Jordan: descriptive and analytical study

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Abstract

Objective—A study of ankylosing spondylitis in Jordan, which has been under-investigated in this region.

Methods—Twenty two patients were studied according to standard methodology during a period of four years. Information on HLA, the presence of uveitis, cardiac disease, and peripheral arthritis was recorded. Other variables such as age, sex, employment, and level of disability were also recorded.

Results—The results reflected the characteristics of the illness and the impact of the disease on the patients and their quality of life and were consistent with the findings of other workers in the region.

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Ankylosing spondylitis is the prototype of the spondyloarthropathies. This is a group of disorders that share common clinical, epidemiological, and immunological features. Ankylosing spondylitis is predominantly a disease of the young, typically starting in the second and third decades. The prevalence is approximately 1% in the white population, but 90% carry the HLA-B27 antigen. About 20% of people who carry the HLA-B27 antigen will develop ankylosing spondylitis (AS).¹ The disease is three times more common in men than in women.²

Ankylosing spondylitis is an inflammatory disease of unknown cause that predominantly affects the axial skeleton. Peripheral joints may also be affected. The disease can be associated with extra-articular manifestations, the commonest of which is probably acute anterior uveitis, occurring in up to 40% of British patients.³ Other complications include aortic regurgitation, heart conduction defects, apical pulmonary fibrosis, amyloidosis, osteoporosis, atlantoaxial subluxation, and cauda equina syndrome. Radiologically the disease is characterised by the presence of sacroiliitis and spondylitic changes.

In this first Jordanian study we are aiming at describing and analysing data collected from 22 patients diagnosed with AS in north Jordan over the past four years. The disease has been studied in some Middle Eastern countries, but the relation with HLA-B27 is not well defined in the Arabic population.

Materials and methods

PATIENTS

Twenty two patients diagnosed as having AS by a rheumatologist during the period 1995–99 at Princess Basma Hospital (tertiary referral centre for north Jordan) and the health centre. The latter provides service for patients employed by the two universities in the city. The population in this region is about one million.

METHODS

The diagnosis of AS was based on the modified New York criteria (1984)⁴: (a) a history of inflammatory back pain; (b) limitation of motion of the lumbar spine in both the sagittal and frontal planes; (c) limited chest expansion compared with standard values for subjects matched for age and sex; (d) definite radiographic sacroiliitis.

A detailed history and physical examination showed that all our patients had inflammatory back pain that was worse in the morning and associated with morning stiffness. Lumbar flexion was measured in all patients and ranged from 1 to 2 cm. All patients had limited chest expansion of between 2 and 4 cm. All patients had definite radiological evidence of bilateral sacroiliitis. None of the patients had a present or past history of psoriasis, skin or nail changes, or inflammatory bowel disease. They had no clinical or laboratory evidence of brucellosis (titre <1/40). Although tuberculosis is not uncommon in this region, none of the patients had clinical or radiographic evidence of this disease.

All patients were assessed by a rheumatologist, and the ophthalmology and cardiology departments cooperated closely to confirm or exclude the presence of anterior uveitis and aortic regurgitation, respectively. Echocardiography and HLA-B27 status were routinely tested using the standard serological method and Tarazaki plates.

The following scoring system was adopted to indicate the degree of disability and handicap, which was evaluated clinically and during follow up:

- Grade I: mild disability (predominantly back pain)
- Grade II: moderate disability (may require occasional admission to hospital)
- Grade III: severe disability (requires help with activities of daily living).

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Table 1 Summary of results

<i>Patients with ankylosing spondylitis</i>	<i>Total</i>	<i>Men</i>	<i>Women</i>
Number	22	19	3
Average age (years)	33.8	34.8	29.0
Average duration of symptoms (years)	8.0	8.4	4.0
Aortic regurgitation (No (%))	1/17 (6)	7	0
Anterior uveitis (No (%))	4/18 (22)	27	0
Prevalence of HLA-B27 (No (%))	15/20 (75)	77	67
Peripheral joint disease (No (%))	7/16 (44)	50	—
Disability score (No (%))			
I	13/14 (93)		
II	1/14 (7)		
III	0		

Although detailed questionnaires such as the Arthritis Impact Measurements Scales or the Health Assessment Questionnaire⁵ provide a more accurate evaluation, they would have required additional staff who were not available.

Additional data were collected from the patients themselves while attending the clinics and in some cases from the medical records.

Results

Twenty two patients (19 men, three women) were studied—a male to female ratio of 6.3:1. Table 1 summarises the data collected. The average duration of symptoms was eight years, with a mean follow up period of two years. Definite bilateral radiographic sacroiliitis was recorded without grading in all the patients. Radiological assessment of the spine showed that only one patient, the eldest (aged 56), had radiological evidence of “bamboo spine”. He was diagnosed 10 years previously but had been symptomatic before that time. The other patients had no radiological spinal disease.

Peripheral joint disease was present in 47% of patients, with the knees affected in all those patients. However, other joint disease was also recorded (hip in two patients, shoulder in one, and ankle in one). The employment of an enthesitis score would have been helpful, but it was not practical for this study. The echocardiographic findings showed only one patient with evidence of mild aortic incompetence. Evidence of anterior uveitis was present in four patients (22%). One patient (a 23 year old male student with disease duration of four years) had recurrent eye disease. One patient had a disability score of II, the rest had only chronic back pain (disability score I).

Previous treatment could not be recorded as the patients had been treated by various general practitioners before their referral. While under our care, they were given regular physiotherapy, required non-steroidal anti-inflammatory drugs, and sulfasalazine was prescribed to patients with peripheral arthritis. Corticosteroids (topical and systemic) were given to patients with anterior uveitis.

Discussion

This is the first description of AS in Jordan. North Jordan is a rural area with a community dependent on farming. For most patients diagnosis was delayed owing to a lack of specialist arthritis units. It is known that loss of function and stopping work correlate significantly with the occurrence of peripheral arthritis, anterior

uveitis, “bamboo spine”, and heart disease,⁶ and, therefore, previous manifestations of these diseases were recorded in this study. HLA-B27 positivity was found in 75% of patients, which is higher than a Kuwaiti study showing only 25.7% positivity.⁷ This may indicate a genetic difference within the Middle Eastern population itself as Arabs are no longer a pure race, particularly in the Mediterranean basin. Moreover, the incidence of HLA-B27 is very low 0.5% in the relatively homogeneous United Arab Emirate Arabs.⁸ It is interesting that 92% positivity has been seen in the Iranian population.⁹ Recent elaborate Lebanese work showed a weak association between HLA-B27 and the spondyloarthropathies in Lebanon.¹⁰ This may be due to the low prevalence of HLA-B27 in the Lebanese population (1.4%),¹¹ but no studies were performed to determine the prevalence of HLA-B27 in Jordan. Other populations, such as Japan and Iraq, have a low prevalence of HLA-B27, 1% and 3% respectively, but patients with AS in these countries still have a high prevalence of HLA-B27—80% in Japan, for example.¹⁰

In our study two brothers had AS, one was HLA-B27 positive and the other, HLA-B27 negative, which is an interesting finding. Peripheral arthritis was found in 47% of our patients, and the knees were always affected. A study from Thailand reported 72% of peripheral arthritis,¹² which is high. Discitis was present in about 8% of patients in a British study,¹³ whereas it was absent in our group of patients who all had spinal radiographs. It is also worth noting that there was no coincidental occurrence of Behçet's disease, which supports the lack of association between these diseases.¹⁴ The incidence of Behçet's disease is relatively high in this region.¹⁵

The cardiac manifestations are numerous but we concentrated on the presence of significant aortic regurgitation using two dimensional echocardiography, which can show changes in up to 54% of patients with spondyloarthropathies.¹⁶ None of our patients had clinical cardiac manifestations and only one had mild aortic incompetence that was detected clinically. Doppler echocardiography has been used to show that up to 20% of patients with AS have abnormalities in the left ventricular function.¹⁷

The exact relation between axial disease and uveitis is not clear.¹⁸ However, the uveitis associated with AS and Reiter's syndrome usually occurs in one eye with high tendency to recur in the other.¹⁹ Disability is known to be correlated with spinal mobility measures, disease activity measures, and duration of the illness.²⁰ Our patients had little functional disability and most continued with their work and social activities, which is consistent with the findings of a recent review.²¹

Conclusion

It appears that AS is a mild to moderate disease in this region with few systemic complications. Its major presentation is chronic back pain, associated with HLA-B27 in 75%. Further

work is needed to evaluate respiratory disease and the genetic make up of these patients.

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