ANKYLOSING SPONDYLITIS IN SINGAPOREAN CHINESE – A CLINICAL PROFILE

W H Koh, H S Howe, M L Boey

ABSTRACT

The clinical characteristics of 38 local Chinese ankylosing spondylitis patients were studied by interview, clinical examination and review of casenotes. The sex ratio was 3.2:1 in favour of males. The average duration from onset of symptoms till diagnosis of disease was 7.25 years. Peripheral joint involvement occurred in 71% of the patients. Extra-articular complications were uncommon; only three patients had a history of uveitis and one patient had biopsy proven IgA nephropathy. 26.3% of patients had significant disability due to the disease. Early diagnosis of the disease should be made as it may improve the prognosis of the patients.

Keywords: *ankylosing spondylitis, extra-articular complications, peripheral arthritis*

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INTRODUCTION

Ankylosing Spondylitis (AS) is a chronic inflammatory disease with a predilection for the axial skeleton and may be associated with systemic complications. The disease is rare before puberty, the onset being usually in young adulthood[1]. Males are more frequently affected than females[2,3]. Thus far, no studies have been done to characterise the clinical features of the local AS patients. This clinical study analyses the Chinese AS patients in our department.

MATERIALS AND METHODS

Thirty-eight local Chinese patients seen in our department from April till November 1992 were entered into the study. All the patients satisfied the New York criteria of definite AS[4]. Clinical history was taken and physical examination was performed on all patients and their casenotes and radiographic films were reviewed. The chest expansion was measured at the level of the fourth intercostal space and the difference in thoracic circumference between maximal inspiration and expiration was determined. The average of two readings was taken.

The finger-floor distance was measured from the tip of the fingers to the floor when the patient was fully flexed at the thoracolumbar spine with the knees straight and together. Patient's morbidity was assessed by asking them whether the disease had ever resulted in sleep disturbance and if there was any disability in terms of activities of daily living (ADL) and work. Disability was graded into four categories: a) None; b) Some – if there had been inconveniences to ADL or work; c) Significant – if they had to change their job or modify their lifestyle significantly; d) Marked – if patient was unable to work, needed help with ADL or was bedridden.

RESULTS

There were 29 male and 9 female patients, the sex ratio being 3.2:1 with a male predominance. Table I lists the ranges and means of patients' ages, age of onset of disease, disease duration, age at diagnosis, and time from onset of disease till diagnosis. The site of initial symptom at onset of disease varies as shown in Table II. Two patients did not give a history of spinal symptoms. Of the remaining 36 patients, the backache began insidiously in the majority (Table III). Most patients reported improvement of backache with exercise and aggravation with prolonged rest (Table III), which was characteristic of inflammatory spinal disease. Rest relieved the backpain, at least initially, in 11 patients. Morning stiffness was absent in six patients whilst 11 patients had stiffness for more than two hours in the morning.

Table IV shows the peripheral joints affected during the course of the patients' disease and the total number of patients who had centrifugal joint involvement. Over half the patients

Table I – Patients' biodata

	Range (years)	Mean (years)
Age	19.5 to 60	33.5
Age of onset of disease	10.0 to 43	22.4
Disease duration	0.75 to 39	10.4
Age at diagnosis	17.0 to 57	29.8
Onset of disease till diagnosis	0.25 to 36	7.25

Table II – Site of initial symptom at onset of disease

Site	No. of patients	%
Back	20	52.6
Peripheral joints	12	31.6
Buttocks	5	13.2
Heel	1	2.6
Total	38	100

Table III – Characteristics of backache

Back pain	No. of patients	%
Onset: Insidious	31	86.1
Sudden	5	13.9
Improved with exercise	26	72.2
Worse with prolonged rest	27	75.0
Relieved by rest	11	30.6
Morning stiffness: Nil	6	16.7
< 2 hours	19	52.8
> 2 hours	7	19.4
Whole day	4	11.1

Department of Rheumatology and Immunology
Tan Tock Seng Hospital
345 Jalan Tan Tock Seng
Singapore 1130

W H Koh, MBBS, MRCP
Registrar

H S Howe, MBBS, M Med (Int Med), FAMS
Consultant Physician

M L Boey, MBBS, M Med (Int Med), FAMS
Consultant Physician

Correspondence to: Dr W H Koh

(55.3%) had a history of bilateral buttock pain, usually alternating in side. Eighteen patients had experienced chest wall pains while 10 had a history of heel pain and 10 had previous Achilles tendinitis.

Extra-articular manifestations were few, only 3 had previous history of iritis and one had biopsy proven IgA nephropathy. None had cardiovascular and respiratory complications attributable to AS. Four patients had a definite family history of AS whilst five had first degree relatives with a history of backache and stiffness suggestive of spondyloarthropathy. Another five patients had first degree relatives with a history of arthritis including osteoarthritis and gout.

The results of the clinical examination are shown in Table V and VI. Twenty patients had significant limitation of chest expansion to 2.5 cm or less. All 22 patients who had HLA B27 typing done were tested positive.

Table IV – Incidence of peripheral joint involvement

Joint	No. of patients (n=27)	% (71)
Knees	19	50.0
Hips	18	47.4
Shoulders	14	36.8
Ankles	8	21.0
Metatarsophalangeal	3	7.9
Elbows	2	5.3
Proximal Interphalangeal	2	5.3

Table V – Incidence of skeletal deformity and limitation of spinal movement

Spinal	No. of patients (n=21)	% (71)
Kyphosis	18	47.4
Loss of lumbar lordois	9	23.7
Scoliosis	2	5.3
Limitation of cervical spine movement	18	47.4
Limitation of thoracolumbar spine movement	30	78.9

Table VI – Results of measurements done on clinical examination

Test	Range (cm)	Mean(cm)
Schober's	1 to 7	4.42
Figner floor distance	0 to 46	20.8
Chest expansion	0.5 to 6.5	2.73

Almost two-thirds of the patients (63.2%) suffered sleep disturbances due to the disease. 26.3% had significant disability whilst the rest had some disability. None had marked disability. The majority of patients (97.4%) were on a non-steroidal anti-inflammatory drug (NSAID). About half (47.4%) were on a "Disease modifying anti rheumatic drug" (DMARD), most commonly sulphasalazine. Many patients had sought traditional medicine and acupuncture before, the incidence being 52.6% and 55.3% respectively.

DISCUSSION

AS tends to affect males more than females although in recent years the ratio is much lower than previously thought. The sex ratio in our patients is consistent with recent published figures[2,3]. The majority of our patients had onset of disease in early adulthood. The time from onset of symptoms till diagnosis averaged 7.25 years and was often longer. In contrast, Calin and co-workers had found in their survey, that the delay in diagnosis had shortened over the years[3]. Reasons that may account for the delay in diagnosis in our patients are firstly approximately one-third of our patients presented initially with peripheral joint symptoms which might have led to the diagnosis of other forms of arthritis. This incidence is higher than previous reports[5,6]. Some did not complain of back symptoms as was the case in two of our patients. Secondly, our patients might have sought traditional medicine or acupuncture before seeking medical advice from doctors. This is suggested by our finding that about half the patients had prior alternative therapies. Thus with greater awareness of the different presentations of AS and patient education, the delay in diagnosis may be shortened.

In 65.8% of the patients, the initial symptom at presentation was centripetal involving the buttocks or the back. Studies in Hong Kong Chinese patients by Ho et al[7] showed a similar incidence of 72% while Hart and Maclagan[5] found the centripetal presentation in 49.4% of Caucasian patients. Peripheral joint involvement in AS has been reported to occur in about a quarter to half of Caucasian patients[1,5]. Studies in Chinese patients seemed to show a higher prevalence[7,8] and our figure of 71% further supports the view that Chinese patients may have a higher incidence of peripheral arthritis.

Extra-articular complications were few in our patients. Uveitis have been reported to occur in 25-40% of Caucasian patients[9,10]. In Chinese patients the prevalence of eye disease was reported to be about 11%[7,8]. In our patients 3 (7.8%) had uveitis. Likewise, cardiovascular involvement such as heart block and aortic valvular disease have been found in 10-14% of patients[11,12]. None of our patients had cardiac involvement which was attributable to AS.

The incidence of AS in first degree relatives is consistent with previous reports[9,13] and is generally about 10%.

Skeletal deformities in the form of kyphosis, loss of lumbar lordosis and scoliosis was found in a significant number of the patients, together with limitation of thoracolumbar and cervical spine movement. This may reflect the long disease duration and late diagnosis of the patients. Chest expansion was limited in more than half the patients and this may contribute further to morbidity especially if they smoke. Court Brown and Doll found the mortality to be 2.5 to 3 times more than the expected mortality from respiratory causes in AS patients[14].

Although none of the patients had marked disability, the disease affected all patients to some extent with two-thirds of them having had sleep disturbances and all patients having some or significant disability. About half of them required a DMARD to control their disease. Sulphasalazine, which was most commonly prescribed to our patients, has been found to be effective in reducing inflammatory parameters and symptoms although it has not been proven to prevent spinal ankylosis or articular erosions[15,16].

CONCLUSION

The Singaporean Chinese patients with AS appear to have fewer extra-articular complications and more peripheral arthritis compared to other published series. The diagnosis of AS should be considered in patients with a history of inflammatory spinal disease because early diagnosis and treatment may improve their

outcome.

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REFERENCES

1. Carbone LD, Cooper C, Michet CJ, Atkinson EJ, O'Fallon WM, Melton III LJ. Ankylosing Spondylitis in Rochester, Minnesota; 1935-1989. Is the epidemiology changing ? Arthritis Rheum 1992; 35: 1476-82.
2. Van der Linden SM. Clinical and radiographic features of ankylosing spondylitis. Curr Op Rheumatol 1990; 2: 563-9
3. Calin A, Elswood J, Rigg S, Skevington SM. Ankylosing spondylitis – an analytical review of 1500 patients: the changing pattern of disease. J Rheumatol 1988; 15: 1234-8.
4. Bennett PH, Burch TA. Population studies of the rheumatic diseases. Amsterdam. Excepta Medica 1968: 456-7.
5. Hart FD, Maclagan NF. Ankylosing spondylitis. A review of 184 cases. Ann Rheum Dis 1955; 14: 77-83.
6. Wilkinson M, Bywaters EGL. Clinical features and course of ankylosing spondylitis. As seen in a follow-up of 222 hospital referred cases. Ann Rheum Dis 1958; 17: 209-28.
7. Ho EKW, Hsu LCS, Chow SP, Leong JCY. Ankylosing spondylitis – Clinical survey in 100 consecutive cases in Hong Kong Chinese. Report of work on ankylosing spondylitics in Hong Kong 1982-1985. Hong Kong: 1986: 1-5.
8. Chou CT, Lu SJ , Rai L, Ho HH. Clinical and family study in Chinese patients with ankylosing spondylitis. Proceedings of the 7th APLAR Congress of Rheumatology. Bali, Indonesia. 1992: 185-8.
9. Brewerton DA, Caffrey M, Hart FD, James DCO, Nicholls A, Sturrock RD. Ankylosing spondylitis and HLA 27. Lancet 1973; i: 904-7.
10. Edmunds L, Elswood J, Calin A. New light on uveitis in ankylosing spondylitis. J Rheumatol 1991; 18: 50-2.
11. Kinsella TD, Johnson LG, Sutherland RI. Cardiovascular manifestations of ankylosing spondylitis. Can Med Assoc J 1974; 111: 1309-11.
12. Graham DC, Smythe HA. The carditis and aortitis of ankylosing spondylitis. Bull Rheum Dis 1958; 9: 171-4.
13. Van der Linden SM, Valkenburg HA, De Jongh BM, Cats A. The risk of developing ankylosing spondylitis in HLA-B27 positive individuals. A comparison of relatives of spondylitis patients with the general population. Arthritis Rheum 1984; 27: 241-9.
14. Court Brown WM, Doll R. Mortality from cancer and other causes after radiotherapy for ankylosing spondylitis. Br Med J 1965; 2:1327-32.
15. Taylor HG, Beswick EJ, Dawes PT. Sulfasalazine in ankylosing spondylitis. A radiological, clinical and laboratory assessment. Clin Rheumatol 1991; 10: 43-8.
16. Dougados M, Maetzel A, Mijiyawa M, Amor B. Evaluation of sulphasalazine in the treatment of spondyloarthropathies. Ann Rheum Dis 1992; 51: 955-8.