·Clinical Research·

Clinical features of ankylosing spondylitis associated with acute anterior uveitis in Chinese patients

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Abstract

• AIM: To characterize the clinical features, diagnosis, treatment and prognosis of uveitis associated with ankylosing spondylitis (AS) in Chinese patients.

• METHODS: Two hundred and three patients with uveitis associated with AS followed-up in the Third Military Medical University Daping Hospital between 2005 and 2010 were retrospectively evaluated in this study. Complete ophthalmological examinations were evaluated at baseline and during the follow-up period. The gender, age, follow-up time, mean frequency of uveitis onset, and accompanying eye examination findings, history, demographical parameters were reviewed. All the patients presented complete clinical and radiologic (sacroiliac, lumbar, dorsal and cervical spine, knee, ankle, shoulder, hip, elbow) evaluation. HLA-B27 typing was also searched.

• RESULTS: There were 203 patients diagnosed with AS associated uveitis. All showed sacroiliac X-ray changes indicative of AS. There were 184 male and 19 female patients. The average age of patients was 35 ± 12 (range 18-50). Mean follow-up period was 2.4 years (1-5 years). Acute anterior uveitis was the most common type of uveitis in both genders. 121 eyes presented unilateral involvement (55.2%), and 92 eyes presented bilateral involvement (45.3%) with onset alternately. 22 eyes occurred hypopyon, 16 eyes were found anterior vitreous cells, 7 eyes were noted reactive macular edema or exudation, 29 eyes presented posterior synechiae of iris, and 14 eyes presented cataract, 9 eyes presented secondary glaucoma, 2 eyes presented bend corneal degeneration and 1 eyes presented atrophy of eyeball. At the final visit, uveitis was well controlled in most patients.

• CONCLUSION: AS associated with uveitis in Chinese patients mainly manifests as acute anterior uveitis. A combination of corticosteroids with other mydriasis agents is effective for most AS associated with uveitis patients. In general, the prognosis is good in these cases.

• KEYWORDS: HLA-B27; anterior uveitis; acute anterior uveitis; ankylosing spondylitis associated uveitis; HLA-B27 associated uveitis

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INTRODUCTION

Ankylosing spondylitis (AS) is a chronic inflammatory form of arthritis that affects the spinal joints and its incidence is about 0.13%[1]. Anterior uveitis is considered the most frequent extra-articular manifestation in AS [2]. It is frequently acute, unilateral and recurrent, and can affect 40 percent of AS patients in a long-term follow-up in foreign literatures [3]. Accordingly to this speculation, there are at least 0.6 million uveitis associated with AS patients in China. But to our knowledge, rare data were available on the clinical features, diagnosis, treatment and prognosis of uveitis associated with AS in Chinese patients.

In the present study, we aimed to ascertain the clinical characteristics, diagnosis, treatment and prognosis of uveitis associated with AS in Chinese population.

MATERIALS AND METHODS

Materials A retrospective data of 203 subjects presenting with uveitis associated with AS were included in the study over a 5-year period. A complete ophthalmological examination including visual acuity, slit-lamp microscopic examination, and dilated pupil examination of the posterior

segment were evaluated at baseline and during the follow-up period. The gender, age, follow-up time, mean frequency of uveitis, and accompanying eye examination findings, history, HLA-B27 typing and clinical findings (axial and peripheral involvement) were reviewed. All the patients presented complete clinical and radiologic (sacroiliac, lumbar, dorsal and cervical spine, and peripheral joint, such as knee, ankle, hip, shoulder and elbow) evaluation.

Methods To those acute anterior uveitis (AAU) associated with AS, steroid eye drop (TobraDex®, Alcon®) non-steroidal anti-inflammatory drugs(NSAIDs, Pranopulin®, Senju®) were local administered, quick and lasting short-time mydriasis should be applied as soon as possible. To those with hypopyon or fibroin deposition, the above drugs should be used once every 15 minutes, continues for 1 hour, then the frequency should be decreased as the inflammation were alleviated. To those with reactive macular edema or exudation, orally corticosteroid was administered.

Statistical Analysis Differences in categorical variables were compared among groups using Chi squared test. All analysis was performed using SPSS 13.0 statistical software and $P<0.05$ was considered statistically significant.

RESULTS

Two hundred and three patients (184 male, 19 female) with a diagnosis of AS according to the modified New York criteria were recruited. The male-to-female ratio was 10 to 1, The average age of patients was 35±12 (range 18-50). Average age of the patients at disease onset (described as the age of first uveitis symptom) was 30±15 (range 12-40). The average disease duration was 22±12 (range 7-90) days. The HLA-B27 antigen was detected in 156 patients (82.5%). The above characteristics of patient's data are reported in Table 1.

AAU is the most common type of intraocular inflammation of AS. Symptoms include pain, light sensitivity, blurred vision or reduced vision; severe complications may include high intraocular pressure, cataract, or glaucoma, and even more atrophy of eyeball, which can lead to permanent loss of vision. All of 203 patients presented AAU, among them, 112 eye presented unilateral involvement (55.2%), and 92 eye presented bilateral involvement (45.3%). However, the inflammation rarely affected both eyes simultaneously. 22 eyes occurred hypopyon, 16 eyes were found anterior vitreous cells, 7 eyes were noted reactive macular edema or exudation, 29 eyes presented posterior synechiae of iris, and 14 eyes presented cataract, 9 eyes presented secondary glaucoma, 2 eyes presented bend corneal degeneration and 1 eyes presented atrophy of eyeball.

In our study, 203 patients all showed sacroiliac X-ray changes indicative of AS; AS typically starts during the third decade of life, the average age at AS disease onset was 18-38. It manifests as low back pain with morning stiffness, lumbosacral pain, lumbar or chest movement stiff and cervical vertebrae stiff. Women may present with a milder form. Peripheral joint such as knee, ankle, hip, shoulder, and elbow may were affected .

A combination of corticosteroids with other mydriasis agents is effective for most AS associated with uveitis patients (Table 4).

Table 1 Demographic and clinical characteristics of the 203 AAU associated with AS patients

Characteristics	AAU associated with AS (*n*=203)
Male/female	184/19=10:1
Average age (years)	35±12
Average age at disease onset (years)	30±15
Disease duration (days)	22±12d
HLA-B27 (+)	82.5 %(156/189)

HLA: human leukocyte antigen.

Table 2 AAU characteristics of the 203 AAU associated with AS patients

Characteristics	AAU associated with AS (*n*=203)
Unilateral involvement	112/203((55.2%)
Bilateral involvement	92/203(45.3%)
Hypopyon (eyes)	22
Anterior vitreous cells (eyes)	16
Macular edema or exudation (eyes)	7
Posterior synechiae of iris (eyes)	29
Cataract (eyes)	14
Secondary glaucoma (eyes)	9
Bend corneal degeneration (eyes)	2
Atrophy of eyeball (eyes)	1

Table 3 Some clinical and demographic data of the 203 AAU associated with AS patients

Characteristics	AAU associated with AS (*n*=203)
First symptom Back pain	106
Radiologic sacroiliitis	203
Lumbosacral pain	106
Morning stiffness in Lumbosacral	30
Lumbar movement limited	26
Chest movement limited	8
Cervical vertebrae stiff /pain	26
Renal region pain	1
Peripheral joint involvement (*n*= 37)	
Knee	21
Ankle	2
Hip	9
Shoulder	3
Elbow	2

Table 4 Pre- and post-therapy best corrected visual acuity(BCVA) of 203 AAU associated with AS patients

Time	≤0.05	0.06-0.1	0.2-0.5	0.6-0.9	≥1.0
Pre-therapy	40	55	50	58	0
Post-therapy	15	5	25	15	143

DISCUSSION

According to the clinical data of the 203 AAU associated

with AS patients, combined with the radiological and laboratory exams, there are several characteristics of AAU in AS as follow: (1) All cases present serious, non-granuloma anterior uveitis. Occasionally, several cases may be noted hypopyon, fibrous deposition or posterior synechiae of iris; rarely cases may be found reactive macular edema or exudation and secondary glaucoma or bend corneal degeneration, and even more atrophy of eyeball. (2) All uveitis manifest acute inflammation and have a duration of ocular disease lasting about 1 month. (3) Near half of uveitis will recurrence. (4) Uveitis may occurred in unilaterl or bilateral. However, the inflammation will rarely affect both eyes simultaneously. (5) Men are affected more than women with the AS disease usually taking a more painful course in men than women. (6) The HLA-B27 antigen was detected in most cases. Most cases respond well to topical corticosteroids and non-corticosteriod anti-inflammation drugs, and the prognosis is good. These above characteristics are well in accordance with those other reports[3-10].

AS typically affects young people, beginning between the ages of 18 and 50. The average age of patients was 35 years, and average age of the patients at disease onset was 30 years, which were in accordance with other reports [1-5]. AAU associated with AS usually last short time (22d)

The sacroiliitis in AAU associated with mostly present lumbosacral pain, in the lower part of the spine, often dull and difficult to ensure the exact location, unilateral and intermittency at early , and develop gradually to bilateral and persistence, and obviously serious in the morning, and several cases may show morning stiffness in lumbosacral , lumbar or chest movement limited ,Vertebrae mostly were also affected, in addition, knee, ankle, hip, shoulder and elbow may be involved with no characteristics meaning. The characteristics of AAU associated with AS should no obvious difference to other reports, and there seem to no obvious in race incidence[6, 7, 11].

In addition, the high AAU incidence in this study just because that we recruited the cases data only those have showed AAU in AS, so, recognizing AS is of vital importance in a patient with AAU.

Although AAU associated with AS posses typical ocular and systemic presentation, that is characteristic lumbosacral pain and acute non-granuloma anterior uveitis, However, AS usually onset insidiously, HLA-B27 positive only hint associated with AS and posses no specificity, until now there is no ideal laboratory or examination method to assure the diagnosis. To those owing obvious acute uveitis but no obvious systemic symptom, should perform radiological examination, especially the male patients, be attention to the changes of sacroiliac joint, if necessary, perform CT or MRI examination, and consult for rheumatologist.

AS is a form of spondyloarthritis (SpA, formerly spondyloarthritides or spondyloarthropathies), AAU associated with AS should be differential diagnosed with other diseases in the spondyloarthritis family as juvenile chronic arthritis, reactive arthritis (formerly Reiter syndrome), psoriatic arthritis and inflammatory bowel disease.

In conclusion, AAU associated with AS patients show typical ocular and systemic presentation and a good visual prognosis is achieved if the patients are managed with corticosteroids with other mydriasis agent as soon as possible.

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