Journal of Microbiology, Immunology and Infection (2017) 50, 798–804

Available online at www.sciencedirect.com

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ORIGINAL ARTICLE

Clinical manifestations in uveitis patients with and without rheumatic disease in a Chinese population in Taiwan

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Received 30 June 2015; received in revised form 5 October 2015; accepted 22 October 2015
Available online 17 November 2015

KEYWORDS
autoimmune disease;
epidemiology;
rheumatic disease;
uveitis

Abstract *Background/Purpose:* Uveitis can be a local eye disease or a manifestation of systemic rheumatologic disorders. However, the differences of clinical manifestations between uveitis patients with or without systemic rheumatologic disease have been seldom described in literature. We investigated the clinical features and complications of rheumatic disease-related uveitis, and compared the characteristics in patients with and without rheumatic disease in a Chinese population in Taiwan.
Methods: A retrospective review was performed for all patients who had been diagnosed with uveitis between January 2009 and June 2014 at the Department of Ophthalmology, Chang Gung Memorial Hospital, Taoyuan, Taiwan.
Results: A total of 823 uveitis patients were enrolled in the study, including 123 patients with rheumatic diseases. The most frequent rheumatic diseases included ankylosing spondylitis (5.8%), followed by Behçet's disease (2.8%), sarcoidosis (1.4%), psoriasis (1.1%), and juvenile idiopathic arthritis (1.1%). Compared with patients without rheumatic disease, those with rheumatic disease-related uveitis had a lower mean age at onset (35.1 ± 15.8 years vs. 44.0 ± 17.5 years), a longer follow-up period (27.1 ± 25.3 months vs. 22.2 ± 23.0 months), a higher incidence of anterior uveitis (69.0% vs. 46.3%), less frequent posterior uveitis (4.9% vs. 21.4%), a higher incidence of recurrence (26.8% vs. 14.1%), more frequent bilateral involvement (53.7% vs. 38.8%), and more frequent posterior synechiae (17.2% vs. 9.4%).

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http://dx.doi.org/10.1016/j.jmii.2015.10.007

Conclusion: The disease course and clinical manifestations of rheumatic disease-related uveitis were different from those unrelated. Patients with rheumatic disease-related uveitis had a higher recurrent rate and more frequent posterior synechiae than patients without rheumatic diseases.

Introduction

Uveitis, which is defined as intraocular inflammation, includes several disease entities. Uveitis can be categorized according to the primary site of inflammation as anterior (e.g., iritis), intermediate (e.g., vitritis, pars planitis), posterior (e.g., retinitis, choroiditis), or panuveitis.[1] Uveitis is a relatively uncommon but devastating disease, accounting for 10—15% of legal blindness among working-age adults in developed countries.[2] The uncontrolled inflammation and frequently relapsing course of uveitis can lead to several vision-threatening complications, including cataract, glaucoma, posterior synechiae, macular edema, neovascularization, retinal detachment, and optic neuropathy.[3] The discomfort and visual impairment of uveitis can seriously worsen a patient's quality of life. Besides, uveitis also results in a significant socioeconomic burden.[4] In Taiwan, the incidence of uveitis is relatively higher compared with other countries. A previous population-based study reported that the incidence rate of uveitis was 102.2—122.0 persons per 100,000 persons/y, and the prevalence was 319—623 cases per 100,000 persons.[5] Therefore, it is important to increase clinicians' awareness of this disease. Early diagnosis and adequate treatment can lead to less visual morbidity and better long-term visual outcomes.[6]

Uveitis can have a variety of etiologies. Uveitis can be a local eye disease or a manifestation of systemic immunological disorders. In addition to infection, trauma, medications, or surgery, rheumatic diseases are also an important cause of uveitis. Although the relationship between uveitis and rheumatic disease is still not clear, it is important to diagnose associated rheumatic diseases early to ensure that ophthalmologists can prescribe systemic corticosteroid and immunosuppressive agents in time to prevent the aggravation of uveitis.[7] According to previous studies at tertiary centers, the frequency of rheumatic disease-related uveitis is ~10—40% of all uveitis cases.[8,9] Various adult-onset rheumatic diseases, including human leukocyte antigen (HLA)-B27-associated-spondyloarthropathies, sarcoidosis, Behçet's disease (BD), rheumatoid arthritis (RA), and systemic lupus erythematosus, can present with uveitis. Pediatric rheumatic diseases, most commonly juvenile idiopathic arthritis (JIA), can also lead to uveitis.[9] The clinical presentations of uveitis with or without rheumatic disease can be similar, which makes the diagnosis and treatment a challenge. Nevertheless, current information about the differences between rheumatic disease-related uveitis and rheumatic disease-unrelated uveitis is scarce.

The types and etiologies of uveitis can be influenced by genetic, geographic, and environmental factors; therefore, the distribution of rheumatic disease-related uveitis can vary from country to country.[10—14] However, little information is available about the epidemiology of rheumatic disease-associated uveitis in the Chinese population in Taiwan.

The aim of this study is to compare the characteristics of uveitis in patients with and without rheumatic diseases. In addition, this article is aimed to describe the demographics, clinical features, and complications of rheumatic disease-associated uveitis among pediatric and adult Chinese patients at a tertiary referral center in Taiwan.

Methods

A total of 832 patients who presented with uveitis to the Ophthalmology and Rheumatology Clinic at Linkou Chang Gung Memorial Hospital, Taoyuan, Taiwan between January 2009 and June 2014 were enrolled in this study. Their medical records were systematically and retrospectively reviewed. General information, including sex, date of birth, onset age of uveitis, and follow-up time was collected. Detailed examinations, including visual acuity evaluations, intraocular pressure measurements, slit-lamp microscopy, and ophthalmoscopy, were performed in each patient. Serologic and radiologic investigations, including measurements of HLA-B27 antigen, antinuclear antibody, rheumatoid factor, and angiotensin-converting enzyme levels, as well as X-rays and computed tomography scans, were performed when clinically relevant rheumatic disease was suspected. An ophthalmologist diagnosed uveitis based on published guidelines.[15] The anatomical location, onset, course, and duration of uveitis were classified according to the Standardization of Uveitis Nomenclature classification of the International Uveitis Study Group.[1] Rheumatic diseases were diagnosed by rheumatologists using the American College of Rheumatology criteria. The age of diagnosis in rheumatic diseases was defined as the time when a patient was confirmed by a rheumatologist to have fulfilled the diagnostic criteria. All participants were separated into two groups for further comparison: patients with rheumatic disease-related uveitis and patients with uveitis unaccompanied by rheumatic disease. Ethics approval was obtained from the Medial Ethics Committee, Linkou Chang Gung Memorial Hospital. Written informed consent was not obtained by participants for their clinical records to be used in this study, but patient information was anonymized and deidentified prior to analysis.

All data are presented as descriptive statistics (the mean ± standard deviation and percentages). The Pearson

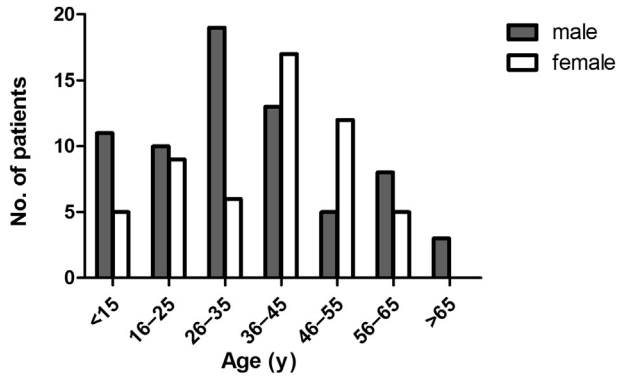

Figure 1. Distribution of the age of onset in rheumatic disease-related uveitis.

Chi-square test was used to analyze categorical variables. Student *t* test was used to analyze normally distributed variables. A p value < 0.05 was considered statistically significant. Statistical analyses were performed using SPSS software version 19 (SPSS Inc., Chicago, IL, USA).

Results

This retrospective observational study enrolled 832 patients who were diagnosed with uveitis between January 2009 and June 2014. Of these cases, 123 (14.8%) were associated with rheumatic diseases. The most frequent rheumatic diseases included ankylosing spondylitis (AS; 49 patients, 39.8%), followed by BD (23 patients, 18.7%), sarcoidosis (12 patients, 9.8%), psoriasis (9 patients, 7.3%), JIA (9 patients, 7.3%), juvenile ankylosing spondylitis (JAS; 5 patients, 4.1%), RA (3 patients, 2.4%), *systemic lupus erythematosus* (3 patients, 2.4%), inflammatory bowel disease (1 patients, 0.8%), and other unclassified autoimmune diseases. The mean age of onset in uveitis was slightly lower in men than women (33.7 ± 17.0 vs. 36.9 ± 14.0, $p = 0.272$). Figure 1 shows the distribution of the age of onset in rheumatic disease-related uveitis. Sixteen patients (13%) were children who first presented with uveitis at < 16 years of age, whereas $\sim$104 patients (84.6%) were of working age (from 16 years to 65 years).

Table 1 shows the anatomical distribution of rheumatic disease-related uveitis, according to the 2005 Standardization of Uveitis Nomenclature classification. Anterior uveitis was most common (84 patients, 68.3%), followed by panuveitis (28 patients, 22.8%), posterior uveitis (6 patients, 4.9%), and finally, intermediate uveitis (3 patients, 2.4%). All patients with AS, JIA, and JAS were diagnosed with anterior uveitis only. Psoriasis and RA-related uveitis were also primarily found in the anterior location (7/9 patients and 2/3 patients, respectively). The most frequent diagnosis in patients with panuveitis was BD (19 patients, 67.9%). Uveitis manifested as acute (46 patients, 37.3%), chronic (44 patients, 35.8%), or recurrent (33 patients, 26.8%) disease. Most patients with AS had acute (25/49) or recurrent (23/49) uveitis. BD, sarcoidosis, JIA, and RA-related uveitis were generally chronic (87%, 58.3%, 66.7%, and 66.7%, respectively).

Table 1 Demographics and clinical patterns of rheumatic disease-related uveitis.

Characteristics	Total $N = 123$ (100%)	AS $N = 49$ (39.8%)	BD $N = 23$ (18.7%)	Sarc $N = 12$ (9.8%)	Psor $N = 9$ (7.3%)	JIA $N = 9$ (7.3%)	JAS $N = 5$ (4.1%)	RA $N = 3$ (2.4%)	SLE $N = 3$ (2.4%)	Others $N = 10$ (8.1%)
Sex (man/woman)	69/54	31/18	14/9	5/7	4/5	5/4	4/1	2/1	1/2	3/7
Diagnosis age of uveitis Mean (range of y)	35.1 (4.5—78)	38.8 (20—65.9)	32.7 (7.3—57.5)	37.7 (15—56.3)	41.8 (16.5—63.8)	11.5 (4.5—22.9)	15 (13—18)	61.5 (53.4—69.1)	43.4 (20—78)	34.0 (7—57.9)
Course *N* (% in disease)										
Acute	46 (37.3)	25 (51)	2 (8.7)	5 (41.7)	3 (33.3)	2 (22.2)	5 (100)	0	2 (66.7)	2 (20.0)
Chronic	44 (35.8)	1 (2)	20 (87)	7 (58.3)	3 (33.3)	6 (66.7)	0	2 (66.7)	1 (33.3)	4 (40.0)
Recurrent	33 (26.8)	23 (46.9)	1 (4.3)	0	3 (33.3)	1 (11.1)	0	1 (33.3)	0	4 (40.0)
Ocular involvement: bilateral *N* (% in disease)	66 (53.7)	16 (32.7)	19 (82.6)	11 (91.7)	5 (55.6)	4 (44.4)	1 (20)	3 (100)	2 (66.7)	5 (50.0)
Anatomic location *N* (% in each location)										
Anterior	84	49 (58.3)	1 (1.2)	4 (4.8)	7 (8.3)	9 (10.7)	5 (6)	2 (2.4)	1 (1.2)	6 (7.4)
Intermediate	3	0	0	3 (100)	0	0	0	0	0	0
Posterior	6	0	3 (50)	2 (33.3)	0	0	0	0	1 (16.7)	0
Panuveitis	28	0	19 (67.9)	3 (10.7)	2 (7.1)	0	0	1 (3.6)	1 (3.6)	2 (7.1)
Sclerouveitis	2	0	0	0	0	0	0	0	0	2 (100)

AS = ankylosing spondylitis; BD = Behçet's disease; JAS = juvenile ankylosing spondylitis; JIA = juvenile idiopathic arthritis; Others = including inflammatory bowel disease, and unclassified autoimmune disease; Psor = psoriasis; RA = rheumatoid arthritis; Sarc, sarcoidosis; SLE, systemic lupus erythematosus.

Table 2 Intervals between the onset of uveitis and rheumatic diseases.

Onset interval *N* (range of mo)	Uveitis onset before rheumatic disease	Uveitis and rheumatic disease diagnosed in same mo	Uveitis onset after rheumatic disease	Interval unsure
AS	5 (2—30)	3	30 (3—432)	11
BD	4 (7—84)	10	3 (5—62)	6
Sarcoidosis	3 (36—120)	5	1 (37)	3
Psoriasis	0	0	7 (10—408)	2
JIA	0	1	5 (11—156)	3
JAS	0	1	3 (43—60)	1
RA	0	0	2 (12)	1
SLE	0	0	1 (24)	2
Others	0	5	2 (2—73)	3
Total	12	25	54	32

AS = ankylosing spondylitis; BD = Behçet's disease; JAS = juvenile ankylosing spondylitis; JIA = juvenile idiopathic arthritis; Others = including inflammatory bowel disease, and unclassified autoimmune disease; Psor = psoriasis; RA = rheumatoid arthritis; Sarc, sarcoidosis; SLE, systemic lupus erythematosus.

Table 2 reveals the intervals between the onset of uveitis and rheumatic diseases. Most patients were diagnosed with rheumatic diseases for months to years before developing uveitis (54 patients, 44.0%), including psoriasis (7 patients, 77.8%), AS (30 patients, 61.2%), and JIA (5 patients, 55.6%). A total of 25 patients (20.3%) were diagnosed with uveitis and rheumatic disease in the same month. Uveitis preceded the diagnosis of rheumatic disease in 12 patients (9.7%), including AS (5 patients, 2—30 months before diagnosis), BD (4 patients, 7—84 months before diagnosis), and sarcoidosis (3 patients, 36—120 months before diagnosis).

Ophthalmological complications of rheumatic disease-related uveitis were observed during follow-up (Table 3). Patients with BD developed multiple complications of uveitis, including cataract (17 patients, 74%), vasculitis (10 patients, 43%), glaucoma (8 patients, 35%), macular edema (8 patients, 35%), and others. Ocular hypertension/glaucoma was observed in many patients with JAS (4 patients, 80%) and psoriasis-related uveitis (5 patients, 56%). Posterior synechiae were observed primarily in cases of JIA (4 patients, 44%), AS (4 patients, 8%), RA (3 patients, 100%), and sarcoidosis (3 patients, 25%). Newly formed posterior synechiae would be treated with intensive local anti-inflammatory agents plus short-acting mydriatics. Circumscribed, local adhesions can be lysed by injection of high molecular weight ophthalmic viscoelastic devices or with a blunt spatula if further complication is a concern.[16]

Patients with uveitis related to rheumatic diseases had different clinical features than patients without rheumatic diseases (Table 4). The male-to-female ratio was slightly higher in patients with rheumatic diseases than in those without rheumatic disease, but this difference was not statistically significant. Compared with uveitis patients without rheumatic disease, the patients with rheumatic disease-related uveitis had a lower mean age at onset (35.1 ± 15.8 years vs. 44.0 ± 17.5 years), a longer follow-up period (27.1 ± 25.3 months vs. 22.2 ± 23.0 months), a higher incidence of anterior uveitis (68.29% vs. 46.26%), a lower incidence of posterior uveitis (4.88% vs. 21.44%), a higher rate of recurrence (26.83% vs. 14.10%), and a higher rate of bilateral involvement (53.66% vs. 38.79%). The complication rate was similar in the two groups, with the exception of posterior synechiae, which were more

Table 3 Complications of rheumatic disease-related uveitis during follow-up.

Complications *N* (% in each disease)	Total *N* = 123	AS *N* = 49	BD *N* = 23	Sarc. *N* = 12	Psor. *N* = 9	JIA *N* = 9	JAS *N* = 5	RA *N* = 3	SLE *N* = 3	Others *N* = 10
Cataract	58	13 (27)	17 (74)	7 (58)	6 (67)	6 (67)	0	3 (100)	2 (67)	4 (40)
Ocular hypertension/glaucoma	40	8 (16)	8 (35)	3 (25)	5 (56)	1 (33)	4 (80)	1 (33)	2 (67)	8 (80)
Macula edema	21	7 (14)	8 (35)	3 (25)	1 (11)	0	0	0	0	2 (20)
Posterior synechiae	21	4 (8)	2 (9)	3 (25)	2 (22)	4 (44)	0	3 (100)	0	3 (30)
Vasculitis	12	0	10 (43)	2 (17)	0	0	0	0	0	0
Vitreous hemorrhage	4	0	2 (9)	1 (8)	0	0	0	0	1 (33)	0
Band keratopathy	4	0	0	0	1 (11)	3 (33)	0	0	0	0
Neovascularization	2	0	1 (4)	0	1 (11)	0	0	0	0	0
Vessel occlusion	2	0	1 (4)	0	0	0	0	0	1 (33)	0
Retinal detachment	1	0	0	0	0	0	0	0	1 (33)	0

AS = ankylosing spondylitis; BD = Behçet's disease; JAS = juvenile ankylosing spondylitis; JIA = juvenile idiopathic arthritis; Others = including inflammatory bowel disease, and unclassified autoimmune disease; Psor = psoriasis; RA = rheumatoid arthritis; Sarc, sarcoidosis; SLE, systemic lupus erythematosus.

Table 4 Comparison of uveitis patients with or without rheumatic disease.[a]

Parameter	Uveitis with rheumatic disease ($n = 123$)	Uveitis without rheumatic disease ($n = 709$)	p
Man/woman	69/54	351/358	0.204
Age (y)	35.1 ± 15.8	44.0 ± 17.5	<0.001
Follow-up period (mo)	27.1 ± 25.3	22.2 ± 23.0	0.049
Location			
Anterior	84 (68.3)	328 (46.3)	<0.001
Intermediate	3 (2.4)	22 (3.1)	1.000
Posterior	6 (4.9)	152 (21.4)	<0.001
Panuveitis	28 (22.8)	171 (24.1)	0.819
Sclerouveitis	2 (1.6)	33 (4.7)	0.147
Onset			
Acute	46 (37.4)	294 (41.5)	0.372
Chronic	44 (35.8)	306 (43.2)	0.114
Recurrent	33 (26.8)	100 (14.1)	0.001
Bilateral involvement	66 (53.67)	275 (38.8)	0.003
Complications			
Cataract	58 (47.2)	335 (47.3)	1.000
Surgery	17 (13.8)	137 (19.4)	0.167
Glaucoma	40 (32.5)	262 (31.7)	0.362
Surgery	3 (2.4)	17 (2.4)	1.000
Macular edema	21 (17.1)	153 (21.6)	0.282
Posterior synechiae	21 (17.2)	67 (9.4)	0.016
Vasculitis	12 (9.8)	54 (7.6)	0.468
Vitreous hemorrhage	4 (3.3)	19 (2.7)	0.764
Band keratopathy	4 (3.3)	15 (2.1)	0.507
Initial visual acuity			
<20/50	42 (34.15)	275 (38.79)	0.067
<20/200	23 (18.70)	135 (19.04)	0.619
Final visual acuity			
<20/50	33 (32.4)	208 (38.7)	0.265
<20/200	16 (15.7)	108 (20.1)	0.341

[a] Categorical variables were compared using Chi-square test; continuous variables between two groups were compared using Student t test.
Data are presented as n (%) or mean ± standard deviation.

frequently observed in cases of rheumatic disease-associated uveitis than in the other group of patients (17.2% vs. 9.4%; $p = 0.016$). A final visual acuity of less than 20/50 was slightly less frequent in patients with rheumatic disease (32.4% vs. 38.7%; $p = 0.265$). The incidence of blindness (i.e., final visual acuity of < 20/200) was also slightly lower in the rheumatic disease-associated uveitis group (15.7% vs. 20.1%; $p = 0.341$). However, the difference in visual acuity was not statistically significant.

Discussion

To the best of our knowledge, this study is the largest hospital-based retrospective epidemiologic survey of uveitis in Taiwan. Similar presentation in different uveitis entities, either with or without association with a systemic rheumatic disease, should be clarified for a better management strategy. However, previous literature seldom focused on the comparison between uveitis with and without rheumatic disease. In our study, we found that patients with or without rheumatic diseases had different clinical features of uveitis. Patients with rheumatic disease-related uveitis had a higher recurrent rate and higher incidence of posterior synechiae.

In this study, rheumatic disease-related uveitis comprised 14.8% of all uveitis cases. The frequency of prior reports of rheumatic disease-related uveitis varies from 10% to 40% worldwide.[8–11,13,17,18] Underlying rheumatic disease was identified in between 13% and 18.3% of uveitis patients in Taiwan, according to two previous etiological studies published in 1988 and 2003.[19,20] Both of these articles reported that the most frequent etiology of autoimmune uveitis in Taiwan was HLA-B27-related acute anterior uveitis (with or without arthropathy), followed by BD and sarcoidosis. Our study separated AS from HLA-B27-related acute anterior uveitis, and found that AS is the main etiology of rheumatic disease-associated uveitis. Compared with previous literature in other Asian and Western countries, the proportion of AS- and psoriasis-related uveitis is higher in Taiwan.[8–15,17,18] Although BD was the second most common etiology, the frequency of BD-related uveitis has decreased noticeably over the past 2 decades (2.8% in our study, 8.8% in a 2003 study, and 17.9% in a 1988 study). The incidence of BD has been decreasing in Japan for years.[11] A population-based study in Taiwan also showed a relatively low incidence of BD compared with other known rheumatic diseases. The decreasing number of new patients with BD may also reflect the decreasing frequency of BD-related uveitis.[21]

The age of onset in rheumatic disease-related uveitis was younger than in uveitis unaccompanied by rheumatic disease. This result is similar to previous results reported by Lee et al[7] in Korea. The frequency of pediatric uveitis was 6.5% for all causes of uveitis in our hospital-based study; this result was similar to that of a previous population-based study (6.8% of all the uveitis cases were in pediatric patients).[5] Nevertheless, rheumatic disease-related uveitis was more common in pediatric than in adult patients (31.5% vs. 13.6%; $p < 0.05$) in our survey. Therefore, rheumatic disease-related uveitis deserves special attention, as uncontrolled uveitis in younger patients may have a severe adverse impact on school performance, the ability to work, and the quality of life.

In most cases in our survey, the diagnosis of AS preceded the first attack of uveitis (61.2%), ranging from 3 months to 36 years. This result was higher than a previous study in France.[22] The study of 175 patients with HLA-B27 uveitis showed that rheumatic symptoms preceded the first attack of uveitis in up to 80% of cases, but the definite diagnosis of spondyloarthropathy preceded the first onset of uveitis in only 36% of all patients. In Taiwan, national health insurance is available to most citizens; thus, people can visit any doctor whenever back pain or other symptoms develop. Therefore, compared with the possibly delay of diagnosis in France, a definite diagnosis of AS could be made earlier in Taiwan because patients can be evaluated by different specialists, including orthopedists, physiatrists, or rheumatologists whenever rheumatic symptoms develop.

In our study, uveitis was the initial manifestation of BD in 60.9% of the patients; of these, 17.4% had uveitis 7—84 months before other systemic symptoms were present. This result differs from the prior understanding that uveitis typically occurs ~2—4 years after BD is diagnosed. Only 20% of BD patients had ocular manifestations to be the initial presentation in the literature.[23]

A comparison of ocular complications and visual outcomes between uveitis patients with or without rheumatic disease is lacking in literature. A study of 33 patients with rheumatic disease-associated uveitis showed that the frequency of visual complications was slightly lower in uveitis patients with rheumatic disease than simple uveitis.[7] In our study, we found that recurrent uveitis was more frequent in groups with rheumatic disease-related uveitis; of these, patients with AS accounted for up to 70% of all recurrent uveitis cases. Bilateral involvement was also more frequently observed. Approximately 91.7% of sarcoidosis patients, 82.6% of BD patients, and all patients with RA presented with bilateral uveitis. The complication rate was similar in these two groups, except for that of posterior synechiae. Patients with rheumatic disease-related uveitis had a significantly higher rate of posterior synechiae (17.1% vs. 9.4%), and every patient with RA and approximately half of the patients with JIA suffered from this complication. We know that posterior synechiae presents as adhesion of the iris to the lens or vitreous body and results from ocular inflammation. Severe ocular inflammation leads to increased ocular damage and synechiae, and decreases the chance of visual recovery in patients with uveitis.[24] It is inferred that rheumatic disease-related uveitis correlates with severe ocular inflammation. However, the frequency of uveitis-related legal blindness in at least one eye was lower in patients with rheumatic disease (15.7% vs. 20.1%), although this result was not statistically significant. Patients with rheumatic disease-related uveitis appeared to experience improved vision after treatment (the blindness rate was 18.7% pretreatment and 15.7% posttreatment); uveitis patents without rheumatic disease still suffered from a relatively high rate of blindness after treatment (19.0% pretreatment and 20.1% posttreatment). However, confirmation of these results requires more detailed and complete records of long-term visual acuity. Lee et al[7] also observed that the therapeutic response to steroids and immunosuppressive agents was significantly increased in cases of rheumatic disease-related uveitis. Taken together, rheumatic disease-related uveitis is a severe ocular inflammatory disease that can result in increased visual morbidities, such as posterior synechiae. However, after early recognition and adequate treatment, patients with rheumatic disease may experience better visual outcomes than patients with uveitis caused by other etiologies. The generalizability of the results to other hospitals or the whole country may be limited by the fact that this study was conducted in a single tertiary center in Taiwan.

Rheumatic disease-related uveitis differs from uveitis without rheumatic disease. Patients with uveitis related to rheumatic disease have a younger age of onset, a higher rate of anterior uveitis, a lower rate of posterior uveitis, a higher recurrence rate, and a higher risk of posterior synechiae. The onset of uveitis can precede or follow the diagnosis of rheumatic disease. Collaboration between ophthalmologists and rheumatologists is important for early diagnosis and adequate treatment of this curable but potentially devastating disease.

Conflicts of interest

The authors had no financial support and have no conflicts of interest to disclose.

Acknowledgments

We thank all the patients and our research staff for participating in the study.

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