Frequency of fibromyalgia syndrome in patients with central serous chorioretinopathy

Frequência de síndrome de fibromialgia em pacientes com coriorretinopatia serosa central

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ABSTRACT

Purpose: To ınvestigate frequency of fibromyalgia syndrome (FMS) among patients with central serous chorioretinopathy (CSCR).

Methods: The study included 83 patients with CSCR and 201 age- and sex-matched healthy controls; the mean age was 47.5 ± 11.3 years in the CSCR group (18 women; 21.7%) and 47.2 ± 11.2 years in the control group (44 women; 21.9%). All participants were assessed for FMS based on 2010 American College of Rheumatology diagnostic criteria and for depression and anxiety with the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI).

Results: FMS was diagnosed in 35 patients (42.2%) from the CSCR group and in 21 individuals (10.4%) from the control group (p<0.001). It was found in 77.77% of the women (14/18) and 32.3% of the men (21/65) in the CSCR group and in 22.7% of the women (10/44) and 7.0% of the men (11/157) in the control group. Familial stress, BDI and BAI scores were higher in the patients with FMS than in those without. When independent risk factors were evaluated by logistic regression analysis, it was found that only the presence of familial stress was a significant risk factor for FMS.

Conclusions: Patients with CSCR should be assessed for the presence of FMS, and this should be taken into consideration when developing a treatment plan. Further studies with a larger sample size are needed to clarify the relationship between FMS and CSCR.

Keywords: Central serous chorioretinopathy; Fibromyalgia; Choroid diseases; Pigment epithelium of eye/pathology; Retinal diseases

RESUMO

Objetivo: *Investigar a frequência da fibromialgia (FMS) entre os pacientes com coriorretinopatia serosa central (CSCR).*

Métodos: *O estudo incluiu 83 pacientes com CSCR e 201 controles saudáveis pareados por idade e sexo. Todos os participantes foram avaliados com base nos critérios de diagnóstico de FMS do* American College of Rheumatology *de 2010 (ACR), Beck Anxiety Inventory (BAI) e Beck Depression Inventory (BDI).*

Resultados: *A idade média foi 47,53 ± 11,33 anos no grupo CSCR (18 mulheres; 21,7%) e 47,19 ± 11,19 anos (44 mulheres; 21,9%) no grupo controle. FMS foi diagnosticada em 35 pacientes (42,2%) do grupo CSCR e em 21 indivíduos (10,4%) do grupo controle (p<0,001). FMS foi encontrado em 77,77% das mulheres (14/18) e 32,3% dos homens (21/65) no grupo CSCR e em 22,7% das mulheres controles (10/44) e 7,0% dos homens controles (11/157). Estresse familiar, BDI e BAI foram maiores nos pacientes com FMS em comparação com aqueles sem FMS. Quando os fatores de risco independentes foram avaliados por análise de regressão logística, verificou-se que apenas a presença de estresse familiar foi um fator de risco significativo para FMS.*

Conclusões: *Os pacientes com CSCR devem ser avaliados para presença de FMS e a FMS deve ser levada em consideração durante o desenvolvimento de um plano de tratamento. São necessários mais estudos com maior tamanho da amostra para esclarecer relações entre FMS e CSCR.*

Descritores: *Coriorretinopatia serosa central; Fibromialgia; Doenças da coroide; Epitélio pigmentado ocular/patologia; Doenças retinianas*

INTRODUCTION

Central serous chorioretinopathy (CSCR) is a common maculopathy that involves serous detachment of the neurosensory retina associated with focal lesions in the retinal pigment epithelium and with circulatory disturbances of choroidal vasculature[1]. Although its etiopathogenesis is not fully understood, many precipitating factors have been revealed, including smoking, stress, pregnancy, hypercortisolemia, and inoculation. Stress and the type A personality trait are the best known risk factors. It has also been proposed that emotional conditions in combination with smoking can cause angiospasm[2]. In general, individuals with CSCR are otherwise healthy.

Fibromyalgia syndrome (FMS) is a condition characterized by chronic, diffuse musculoskeletal pain and tenderness[3,4]. It affects almost all races, ethnicities, socioeconomic classes, and age groups, including children. It is more common among woman; the female-to-male ratio is 9:1[3]. Its prevalence in developed countries has been reported as 0.5%-4%[5]. The incidence increases with age, and it is most frequently seen at 20-55 years[6]. A diagnosis of FMS is used for heterogeneous pathological conditions associated with pain, including anxiety disorder, depression, lethargy, sleep disorders, and gastrointestinal symptoms[3,6]. These may be due to the presence of psychological disorders concomitant with FMS; indeed, psychiatric symptoms are rather common and affect the course of the disease[7]. It has been reported that patients with FMS experience an increase in comorbid diseases, such as depression, anxiety, and bipolar disorder[7]. Some studies have reported disorders in personality traits in patients with FMS, supporting the idea that personality and mood disorders may predispose an individual to FMS[8,9]. Stress is an important risk factor for FMS[10]. In summary, it is known that depression and psychiatric disorders increase with FMS.

Typically, acute CSCR is a self-limiting process in which visual acuity recovers within 1 to 4 months after onset, with a few recognized visual sequelae coinciding with the reattachment of the neurosensory retina[11]. However, its recurrence is common, with approximately

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30%-50% of patients experiencing recurrence within one year[12]. Retinal pigment epithelium atrophy and changes in the neurosensory retina may develop in patients with frequent recurrences, or there may be chronic detachment of the neurosensory retina, resulting in permanent loss of visual functions such as visual acuity, color vision, and contrast sensitivity[13-15]. It is therefore important to prevent recurrence to protect ocular functions. All patients diagnosed with CSCR should be assessed for triggering and precipitating factors, which should then be modified[13]. FMS can accompany CSCR as these entities have similarities in etiopathogenesis (such as personality trait, stress, depression, and cortisol level). FMS and FMS-related psychiatric disorders accompanying CSCR may be involved in the recurrence of CSCR. In addition, the presence of acute stress-anxiety after a diagnosis of CSCR may play a role in the development of FMS. The aim of this prospective study was to investigate the frequency of FMS among patients with CSCR.

METHODS

Participants

All patients with a diagnosis of CSCR that were being followed up in the ophthalmology department of Antalya Teaching Hospital, Turkey, were screened for the following inclusion and exclusion criteria: a definitive diagnosis of CSCR, volunteering their participation, no known depression disorder or any psychiatric disease, no known comorbid disease, the absence of known rheumatic disease, the absence of a FMS diagnosis before the CSCR diagnosis, and no medication, including steroids and antidepressants. Overall, 83 patients fulfilled these criteria and were included to the study. As a control group, 201 age- and sex-matched healthy individuals were recruited from among hospital employees. The mean age was 47.5 ± 11.3 years (18 women; 21.7%) in the CSCR group and 47.2 ± 11.2 years (44 women; 21.9%) in the control group. The study was explained to all participants, who gave their written informed consent. The study was approved by the Ethics Committee of Antalya Training and Research Hospital (#2015-177) and was conducted in line with the principles in the Declaration of Helsinki.

Using a data sheet developed by the researchers, the following data were obtained for the patients: age, sex, body mass index (BMI), education level, smoking status, marital status, occupation, work stress, familial stress, disease type (acute or chronic), and the presence of gastroesophageal reflux disease (GERD), which was assessed clinically. The patients were questioned about burning sensations and regurgitation, the classic symptoms of GERD, and GERD was defined as the presence of one or both of these symptoms at least once a week[16]. To exclude asymptomatic CSCR, all controls underwent ocular examination by an ophthalmologist.

Ocular examination

All participants underwent a detailed ocular examination, including for best-corrected visual acuity, a slit-lamp evaluation, and a dilated fundus examination. CSCR was confirmed by using fundus fluorescein angiography (FFA, Visucam NM/FA, Carl Zeiss, Germany) and fundus autofluorescence (FAF). Neurosensory or retinal pigment epithelium detachment was also assessed by optical coherence tomography imaging (Cirrus HD-OCT Model 5000, Carl Zeiss Meditec Inc., Dublin, CA, USA). If results were inconclusive, indocyanine angiography (Visucam NM/FA, Carl Zeiss, Germany) was performed to make a definitive diagnosis. A single experienced retinal specialist performed choroidal thickness measurements by EDI OCT using the SD-OCT mode of the device (Cirrus HD-OCT Model 5000, Carl Zeiss Meditec Inc., Dublin, CA, USA) according to a previously described technique[17]. The choroidal thickness was measured perpendicularly from the outer edge of the retinal pigment epithelium to the choroid-sclera boundary at the fovea using a single line of 6-mm length centered horizontally on the fovea for visualization of the choroid. Only the central subfoveal choroidal thickness was measured.

Other assessments

A rheumatologist performed a comprehensive examination of all participants, including a detailed history and a physical examination. Potential comorbid rheumatic disorders (such as undiagnosed connective tissue disorders) were assessed in both patients and controls to rule out secondary FMS. A diagnosis of FMS was based on the 2010 American College of Rheumatology (ACR) diagnostic criteria[18]. The Revised Fibromyalgia Impact Questionnaire (FIQR) was administered to the patients and controls diagnosed with FMS. In addition, the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI) were administered to all of the patients in the CSCR group and to the controls diagnosed with FMS. The following paragraphs describe these instruments in more detail.

The 2010 ACR Diagnostic Criteria for FMS were a new set of criteria that included a widespread pain index (WPI) and a symptom severity scale. However, the criteria did not include tender points, which can be used as an alternative method for assessing FMS in routine clinical practice[18]. The WPI results in an overall score of 0-19 points, given by the number of up to 19 specific areas where the patient experienced pain over the previous week, including the left shoulder girdle, right shoulder girdle, right upper arm, left upper arm, right lower arm, left lower arm, right hip (gluteal region), left hip (gluteal region), right upper leg, left upper leg, right lower leg, left lower leg, right jaw, left jaw, chest, abdomen, upper back, lower back, and neck. Symptom severity scale assesses fatigue, waking unrefreshed, cognitive functions, and somatic symptoms, which include muscle pain, tiredness, irritable bowel syndrome, thinking or remembering problems, headache, abdominal pain, numbness/tingling, dizziness, insomnia, depression, constipation, and a dry mouth. The four items were each rated as 0-3 (0, none; 1, mild; 2, moderate; 3, severe), resulting in an overall score of 0-12 points.

The FIQR was used to assess functional status, disease progression, and outcomes. The validity and reliability of the Turkish version was confirmed by Bennett et al.[19]. The questionnaire includes 20 items covering physical function, occupation, depression, anxiety, sleep, pain, stiffness, fatigue, and well-being.

The BAI was developed by Beck et al. in 1988. It assesses the severity of anxiety symptoms experienced by an individual, addressing both subjective and somatic symptoms. It is a self-reported assessment scale including 21 items rated on a 3-point Likert scale. Higher total scores indicate greater severity of anxiety. The validity and reliability of the Turkish version have been confirmed[20].

The BDI was developed by Beck et al. in 1961. It assesses an individual's risk for depression as well as the level of depressive symptoms and changes in their severity. It is a self-reported assessment scale including 21 statements rated on a 4-point Likert scale. The validity and reliability of the Turkish version have been confirmed[21].

Statistical analysis

Descriptive statistics are presented as frequency and percentage, mean and standard deviation (SD), or median with range. Fisher's exact test and Pearson's chi-square test were used to assess relationship between categorical variables. Normality was tested with the Shapiro-Wilks test for groups with a sample size <50 and with the Kolmogorov-Smirnov test for groups larger than this. Normality was assessed using the Shapiro-Wilks test when analyzing differences between measurements in two groups. Differences were tested using Student's t test for variables with normal distribution and using the Mann-Whitney U test for variables with skewed data. Variables found to be significant in univariate analysis were included into logistic regression analysis, with results presented by Wald statistics, odds ratio, and 95% confidence interval (CI). A p value <0.05 was considered to be statistically significant. All analyses were performed using SPSS version 22.0.

RESULTS

The CSCR and control group were comparable regarding age, sex, and educational level (Table 1). The mean disease duration was 18.8 ± 16.6 months and the mean choroidal thickness was 400 ± 111 µm in the CSCR group, with 23 patients (28.4%) having acute CSCR. Table 2 presents the characteristics of the CSCR group. FMS was diagnosed in 35 patients (42.2%) from the CSCR group and in 21 individuals (10.4%) from the control group (p<0.001). In the CSCR group, 14 women (14/35, 40%) and 21 men (21/35, 60%) were diagnosed with FMS. The BDI and BAI scores, FMS criteria score, and FIQR scores were comparable between the patients and controls diagnosed with FMS (Table 3). Women constituted 40% of the patients with FMS and 8.3% of those without FMS. Familial stress and BDI and BAI scores were higher in the patients with FMS than in those without. Table 4 presents the characteristics of patients with or without FMS in the CSCR group. All of the controls with FMS and 94.3% of the patients FMS were older than 30 years. The duration of education was <8 years for 62.9% of the FMS patients in the CSCR group and 38.1% of the controls with FMS.

When independent risk factors for FMS prevalence were evaluated by logistic regression analysis, it was found that only the presence of familial stress was a significant risk factor for FMS, with an odds ratio of 11.553 (95% CI: 2.117-62.708, Table 5).

DISCUSSION

In this study, we found increased frequency of FMS in the patients with CSCR compared with the control group, as well as thicker subfoveal choroid. Although choroidal thickening in CSCR eyes has already been reported, to the best of our knowledge this is the first report to show that FMS frequency increased in both female and male patients with CSCR compared with the controls. In the CSCR group, familial stress and BDI and BAI scores were significantly higher in the patients with FMS than in those without, although logistic regression analysis showed the only significant factor associated with the presence of FMS was familial stress.

Table 2. Characteristics of the central serous chorioretinopathy group (N=83)

Parameter	Value
BMI, kg/m^2	26.62 ± 4.05
Smoking status	
Non-smoker, n (%)	33 (39.8)
Ex-smoker, n (%)	23 (27.7)
Current smoker, n (%)	27 (32.5)
Amount smoked, packs per year	12.70 ± 14.78
Marital status	
Single, n (%)	16 (19.3)
Married, n (%)	67 (80.7)
Partner	
Yes, n (%)	72 (86.7)
No, n (%)	11 (13.3)
Work stress	
Yes, n (%)	38 (45.8)
No, n (%)	45 (54.2)
Familial stress	
Yes, n (%)	30 (36.1)
No, n (%)	53 (63.9)
Disease duration, mo	18.82 ± 16.59
Disease type	
Acute, n (%)	23 (28.4)
Chronic, n (%)	58 (71.6)
GERD	
Yes, n (%)	23 (27.7)
No, n (%)	60 (72.3)

BMI= body mass index; GERD= gastroesophageal reflux disease.

Table 1. Characteristics of the central serous chorioretinopathy (CSCR) and control groups

	CSCR group N=83	Control group N=201	
	n (%)	n (%)	
Parameter	Mean ± SD	Mean ± SD	p
Age[a]	47.53 ± 11.33	47.19 ± 11.19	0.867
Sex[c]			
Female, n (%)	18 (21.7)	44 (21.9)	0.970
Male, n (%)	65 (78.3)	157 (78.1)	
Education level[c]			
Primary, n (%)	33 (39.3)	78 (38.8)	0.999
Secondary, n (%)	11 (13.3)	27 (13.4)	
College n (%)	18 (21.7)	45 (22.4)	
High school, n (%)	5 (6.0)	12 (6.0)	
University, n (%)	16 (19.3)	39 (19.4)	
Length of education, y[b]	9.60 ± 4.42	9.76 ± 4.33	0.773
Choroid thickness, µm [a]	400.39 ± 111.27	329.80 ± 65.76	<0.001
Fibromyalgia[c]			
Yes, n (%)	35 (42.2)	21 (10.4)	<0.001
No, n (%)	48 (57.8)	180 (89.6)	

[a]= Mann-Whitney U test; [b]= Student's t test; [c]= Pearson chi-square test.

Table 3. Characteristics of central serous chorioretinopathy (CSCR) patients and controls with fibromyalgia syndrome (FMS)

Parameter	Patients with CSCR and FMS N=35	Controls with FMS N=21	P
BDI[a]	10.14 ± 8.77	12.14 ± 11.19	0.228
BAI[a]	10.22 ± 11.68	11.62 ± 11.19	0.244
FMS criteria scores			
WPI Part 1[b]	11.09 ± 2.68	11.10 ± 2.93	0.998
Symptom severity (SS) score, Part 2a			
Fatigue[a]	2.25 ± 0.57	2.05 ± 0.67	0.268
Unrefreshed waking[a]	2.31 ± 0.47	2.24 ± 0.44	0.560
Cognition[a]	2.03 ± 0.47	1.71 ± 1.30	0.102
Part 2a total score[a]	6.59 ± 0.47	6.00 ± 0.64	0.118
Symptom severity (SS) score, Part 2b	1.97 ± 0.47	1.86 ± 0.36	0.313
FIQR scores			
FIQR functional[b]	16.44 ± 0.47	16.33 ± 4.23	0.937
FIQR overall[b]	13.12 ± 0.47	13.14 ± 2.20	0.980
FIQR symptom[b]	33.03 ± 0.47	32.76 ± 6.11	0.883
FIQR total[b]	62.19 ± 13.68	61.62 ± 11.86	0.877

BDI= beck depression inventory; BAI= beck anxiety inventory; WPI= widespread pain index; FIQR= revised fibromyalgia impact questionnaire.
[a]= Mann-Whitney U test; [b]= Student's t test; [c]= Pearson chi-square test.

It has been shown that depression and anxiety disorders are increased in patients with FMS when compared with other conditions with chronic pain[7]. Several suggestions have been proposed to explain the frequent association of FMS with depression and anxiety disorders[8]. One hypothesis is that psychiatric disorders develop as a response to FMS. Conversely, another hypothesis advocates that psychiatric disorders can trigger FMS symptoms. A third hypothesis suggests shared mechanisms in the pathophysiology of FMS and the psychiatric disorders[22]. For instance, prolonged stress causes the release of pro-inflammatory cytokines in brain, which, in turn, can predispose an individual to both psychiatric disorders and pain perception[23]. In addition, it is possible that acute emotional alterations experienced after a diagnosis of CSCR could trigger FMS. In our study, BDI and BAI scores were higher in patients with CSCR with FMS than in those without. There is a need for further studies with a larger sample size to clarify the association between CSCR and FMS. However, our results indicate that patients with CSCR should be assessed for concomitant FMS. The recurrence of CSCR could be prevented by the treatment of concomitant FMS, which is important for the protection of ocular functions.

FMS is more common among women. In the USA, the prevalence of FMS has been reported as 3.4% among women and 0.5% among men[24]. In our study, FMS was detected in 22.7% of women and 7.0% of men in the control group, which is a higher frequency than found in previous studies. This finding may be due to the selection of the control group from among hospital employees, who were all active workers and were at ages where peak FMS prevalence is observed. In the CSCR group, FMS was detected in 77.7% of the women and 32.3% of the men; this frequency was significantly higher than in the controls, and the difference between men and women was also statistically significant.

In previous studies, it has been reported that FMS prevalence increases with advancing age[25], with the likelihood of FMS lower in young adults than in middle-aged individuals. In our study, we found that FMS frequency did not change with age. However, all of the controls with FMS and 94.3% of the patients with FMS were older than 30 years.

In previous studies, FMS prevalence has been reported to be lower in single individuals[5,24]. However, we found that marital status did not affect FMS frequency in our study. In addition, education level was lower in patients with FMS than in those without, although this difference did not reach statistical significance. All potential parameters that could be associated with FMS frequency were assessed in logistic regression analysis, but only the presence of familial stress was found to be significantly associated with FMS frequency.

It is well known that depression and psychiatric disorders are increased by FMS. Stress is one of the most important factors implied in the pathogenesis of CSCR. Several recent studies have reported increased psychological distress in patients with CSCR in comparison to healthy controls[26]. Conversely, stress may be experienced as a result of the CSCR symptoms, given that a sudden loss of visual acuity can

Table 4. Characteristics of central serous chorioretinopathy (CSCR) patients with or without fibromyalgia syndrome (FMS)

	Patients with CSCR and FMS N=35	Patients with CSCR without FMS N=48	
	n (%)	n (%)	
Parameter	Mean ± SD	Mean ± SD	p
Sex [c]			
Female	14 (40)	4 (8.3)	0.001
Male	21 (60)	44 (91.7)	
Age, y[b]	47.11 ± 10.39	47.83 ± 12.07	0.777
BMI [b]	27.14 ± 4.82	26.24 ± 3.39	0.350
Educational level			
Primary school	18 (51.4)	15 (31.30)	0.867
Secondary school	4 (11.4)	7 (14.60)	
High school	5 (14.3)	13 (27.10)	
College	4 (11.4)	1 (2.10)	
University	4 (11.4)	12 (25.00)	
Length of education[a]	8.69 ± 4.38	10.27 ± 4.37	0.097
Smoking status[c]			
Non-smoker	18 (51.4)	15 (31.3)	0.104
Ex-smoker	6 (17.1)	17 (35.4)	
Current smoker	11 (31.4)	16 (33.3)	
Amount smoked, packs per year[a]	9.14 ± 11.39	15.29 ± 16.47	0.061
Marital status[c]			
Single	7 (20)	9 (18.8)	0.887
Married	28 (80)	39 (81.3)	
Partner[d]			
Yes	31 (88.6)	41 (85.4)	0.753
No	4 (11.4)	7 (14.6)	
Work stress			
Yes	17 (48.6)	21 (43.8)	0.663
No	18 (51.4)	27 (56.3)	
Familial stress[c]			
Yes	22 (62.9)	8 (16.7)	<0.001
No	13 (37.1)	40 (83.3)	
Choroidal thickness[a]	422.50 ± 98.09	383.00 ± 118.59	0.066
Disease duration, mo[a]	19.37 ± 17.25	18.42 ± 16.25	0.799
Disease type[c]			
Acute	8 (23.5)	15 (31.9)	0.409
Chronic	26 (76.5)	32 (68.1)	
GERD[c]			
Yes	15 (42.9)	8 (16.7)	0.008
No	20 (57.1)	40 (83.3)	
BDI[a]	14.34 ± 9.09	6.80 ± 6.96	<0.001
BAI[a]	16.83 ± 13.09	4.95 ± 6.93	<0.001

BMI= body mass index; GERD= gastroesophageal reflux disease; BDI= beck depression inventory; BAI= beck anxiety inventory.
[a]= Mann-Whitney U test; [b]= Student's t test; [c]= Pearson chi-square test; [d]= Fisher's exact test.

Table 5. Logistic regression analysis of factors that could influence fibromyalgia syndrome

				95% CI	
Independent variables	Wald	p	OR	Lower	Upper
Sex	1.949	0.163	4.724	0.534	41.791
Familial stress	7.996	0.005	11.523	2.117	62.708
GERD	0.210	0.647	0.624	0.083	4.707
BDI	0.020	0.887	1.011	0.865	1.183
BAI	2.655	0.103	0.879	0.754	1.026
Length of education	0.090	0.764	1.026	0.870	1.209
Smoking amount	1.689	0.194	1.042	0.979	1.110
Choroidal thickness	2.669	0.102	0.994	0.987	1.001

OR= odds ratio; CI= confidence interval; GERD= gastroesophageal reflux disease; BDI= beck depression inventory; BAI= beck anxiety inventory.

cause a considerable degree of psychological distress[26]. Stress may therefore contribute to an undesirable vicious circle in patients with CSCR, counteracting therapeutic efforts. A higher incidence of critical life events has been proposed as an important trigger in these patients[27].

FMS is important for both the identification of comorbid psychiatric conditions and for developing the CSCR treatment plan. It has been suggested that depression observed in patients with FMS has different characteristics from those in other individuals; for example, negative ideation, helplessness, and anxiety are more commonly seen in patients with FMS[28]. It has also been reported that patients with FMS experience difficulty in recognizing self-emotions and coping with these emotions[29]. A relationship between CSCR and the type A personality trait has also been identified. Individuals with this personality trait may have insufficient ability to cope with the distress.

The most common symptom in patients with FMS is pain, with fatigue, poorer quality of life, insomnia, cognitive problems, morning stiffness, depression, and anxiety also being common[10]. Pain is the most important of these for causing a poorer quality of life. Prolonged pain results in physical, psychosocial, and social problems; thus, psychosocial and behavioral interventions and education are as important as medical therapies[30]. The successful management of FMS requires a multidisciplinary approach.

In conclusion, this is the first study to evaluate the prevalence of FMS in patients with CSCR. We found that FMS was more prevalent among patients with CSCR than in controls. The management of classic CSCR usually involves careful observation with risk factor modification. In most cases, a three-month period is sufficient to allow subretinal fluid to resolve spontaneously. Visual acuity typically returns to normal after a first episode. However, recurrent attacks lead to a progression to chronic CSCR and disrupted visual functions. It is therefore important to correct modifiable risk factors and to prevent recurrence in patients with CSCR. These patients should be assessed for the presence of FMS, and FMS should be taken into consideration when making a treatment plan. We consider the treatment of FMS to be important for reducing stress factors that play a role in the pathogenesis of CSCR. However, further studies are needed to clarify the association between FMS and CSCR.

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