

## Psychiatric evaluation in patients with central serous chorioretinopathy in Asian Indians

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**Purpose:** This study aimed at psychiatric evaluation of patients with central serous chorioretinopathy (CSCR) and its association. **Material:** Consecutive patients diagnosed to have CSCR were included in the study. The participants underwent a routine eye examination. After informed consent, participants were subjected to psychiatric evaluation by a qualified psychiatrist. Details of evaluation and psychiatric disorders were documented and if treatment required were given by the psychiatrist. The outcome measure was the incidence of psychological disorder. **Results:** Cross-sectional observational data analysis of 40 patients diagnosed to have treatment-naïve CSCR who agreed to undergo psychiatric evaluation were included in the study. The ethnic origin of the patients was Asian Indian. The mean age was  $39.55 \pm 8.33$  years with a male to female ratio of 33:7. After a thorough psychiatric evaluation, 31 individuals (77.5%) diagnosed to have mixed anxiety disorders, 4 (10%) had the major depressive disorder, and 5 (12.5%) had adjustment disorder. All 40 patients had stressed personality. All 40 patients had treatment with anti-anxiolytics and advised lifestyle modification. Of these 40 patients, one patient (2.5%) underwent treatment additionally with an antidepressant. **Conclusion:** All patients with acute CSCR had some form of psychiatric disorder. Psychiatric evaluation in acute treatment naïve CSCR may contribute to the management besides other factors known in the management.

**Key words:** Anxiolytics, antidepressants, anxiety disorder, central serous chorioretinopathy, psychiatric evaluation

Central serous chorioretinopathy (CSCR) is a common retinal disorder which causes decrease vision affecting the macula associated with serous elevation of the neurosensory retina. It is common in the middle-aged male. With the advancements of imaging technology, the morphological features and alterations in the neurosensory retina and choroid are imaged and understood better, adding to the clinical knowledge of the disease. Nevertheless, the exact molecular mechanism of CSCR remains uncertain, primarily because it is multifactorial.<sup>[1,2]</sup>

It has been shown in studies that increased psychological distress is associated with CSCR when compared to healthy controls.<sup>[3-5]</sup> Varied psychological and psychophysiological variables are associated with CSCR.<sup>[6]</sup> It is common in individuals with Type A personality.<sup>[5,6]</sup> Elevated serum homocysteine, cortisol levels, stress score and blood pressure have also been shown in patients with CSCR.<sup>[7]</sup>

Kim *et al.*<sup>[8]</sup> have shown the association of CSCR with psychological factors in Asian patients. The study reports

that psychological factors were dependent on the phase and subtype of CSCR.

With the hypothesis that psychological stress or disorder plays a considerable role in the incidence of CSCR, we did a prospective study of psychiatric analysis of Asian Indian patients with CSCR who are habitant of the progressive metropolitan city of Mumbai, India.

### Methods

All consecutive patients seen in a single eye center diagnosed to have CSCR were included in the study. The exclusion criteria were patients treated with corticosteroids in last 6 months, evidence of any systemic disease that may affect the retina and any previous history of any retinal disease that may adversely affect the macula and outcome. The participants underwent routine eye examination including visual acuity assessment, slit-lamp examination, dilated fundus examination, fundus photography, fundus fluorescein angiography and optical coherence tomography. After

#### Access this article online

**Website:**  
www.ijo.in

**DOI:**  
10.4103/ijo.IJO\_885\_20

#### Quick Response Code:



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Received: 08-Apr-2020

Revision: 25-Aug-2020

Accepted: 23-Oct-2020

Published: 30-Apr-2021

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**Cite this article as:** Dudani AI, Hussain N, Ramakrishnan M, Telang O, Patil VM, Dudani K, *et al.* Psychiatric evaluation in patients with central serous chorioretinopathy in Asian Indians. Indian J Ophthalmol 2021;69:1204-7.

informed consent, participants were subjected to psychiatric evaluation by a qualified psychiatrist. Details of evaluation and psychiatric disorders were documented and if treatment required were given by the psychiatrist. A detailed psychiatric history was taken. The mental status examination was done to make a diagnosis using either DSM 5 criteria or ICD 10 criteria.<sup>[9,10]</sup> The Psychiatrist were masked to the diagnosis. They were referred for evaluation and worked independently on their assessment. The patients were followed up every month for 3 months then every 3 months for one year. The outcome measure was the incidence of psychological disorder. Institutional review board approval was taken to conduct the study.

## Results

Prospective observational data analysis of 40 patients diagnosed to have treatment-naive CSCR who agreed to undergo psychiatric evaluation were included in the study. The ethnic origin of the patients was Asian Indian. The mean age was 39.55 ± 8.33 years with a male to female ratio of 33:7. 37/40 (92.5%) has emmetropia, 2 (5%) had Myopia and 1 (2.5%) had hyperopia. 39/40 patients (97.5%) presented with 1<sup>st</sup> episode of CSCR and 1 patient (2.5%) presented with 2<sup>nd</sup> episode. 32 (80%) patients presented with a duration of complaint < 3 months and 8 (20%) presented with 3 to 6 months duration. One patient (2.5%) had a history of resolved CSCR in the contralateral eye, which was inactive at the time of enrollment.

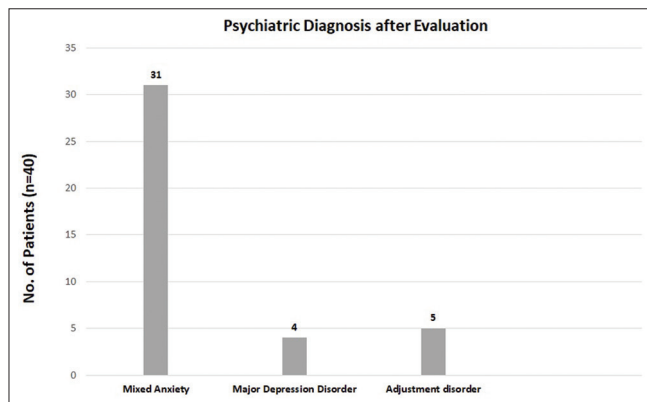
The outcome measure incidence of psychological disorder showed that all 40 individuals had stressed personality. Stressed personality is defined in psychiatry as individuals with stressors like loss of jobs, interpersonal problems, lack of achievements and others which precipitates depression or anxiety. Of these, 31 individuals (77.5%) were diagnosed to have mixed anxiety disorders, 4 (10%) had the major depressive disorder and 5 (12.5%) had adjustment disorder [Fig. 1]. All 40 patients had treatment with anxiolytics and advised lifestyle modification [Fig. 2]. Of these 40 patients, one patient (2.5%) underwent treatment additionally with an antidepressant. Most common antidepressant used was Escitalopram (SSRI) and anti-anxiety drugs commonly clonazepam (benzodiazepine).

## Discussion

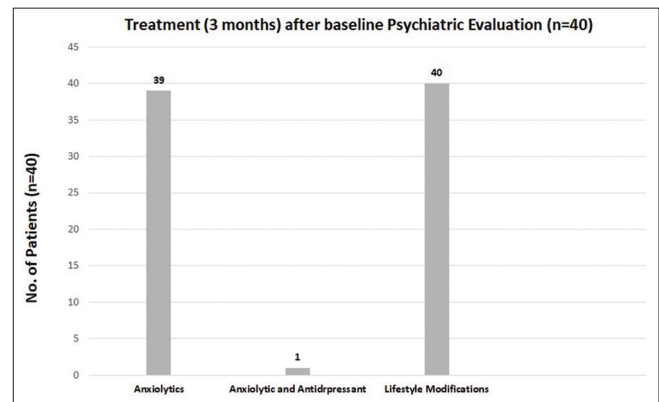
Mehta *et al.*<sup>[11]</sup> reported that even though there are some common practice patterns for CSCR, there are still differences in regional and individual practice patterns implying the need for more definitive practice guidelines. Since CSCR has a self-limiting course, 79.1% in the survey physicians preferred to observe in an acute first-time episode to observe for a minimum of 3 months. If it did not resolve, 67% recommended treatment with Photodynamic therapy (PDT). Regional variation showed that in Asia, Physician preferred Focal laser and in the USA and Europe, physicians preferred PDT. The study did not report any psychosocial evaluations.

It is known that CSCR is more frequent among individuals with Type A personality as they are more susceptible to psychological stress.<sup>[7,12,13]</sup> It was found to be linked to pregnancy, Cushing’s syndrome, hypertension, sleeping disorder and others. These individuals were more likely to use psychopharmacologic medications or corticosteroids. Gelber<sup>[12]</sup> and Yannuzzi<sup>[13]</sup> reported that disturbing psychological event preceded the occurrence of CSCR in 91% and Type A Personality was significantly more frequent in patients with CSCR than in controls.

Spahn *et al.*<sup>[5]</sup> studied on a population sample in Germany in patients with CSCR testing for psychosomatic symptoms, personality profiles and social support at the onset of the ailments. This study was based on SCL 90-R (Symptom Checklist 90-R), Symptom list, Questionnaire on social support and 16 personality factor questionnaires. Their sociodemographic data confirmed that CSCR is mainly an ailment of socially well-integrated middle-aged men. A high proportion of their patients are either married or living in a steady relationship, a higher degree of education and are working as white-collar workers or officials. They have not taken any sick leave or consulted any physicians for any ailment. This suggests the patients were on constant engagement to their higher-profile work. One-third of the patients showed elevated psychiatric stress. Emotional instability, insecurity and nervousness have been seen in this sample study. So, Spahn *et al.*<sup>[5]</sup> hypothesized that these are personalities in whom openness and spontaneity on the one hand and insecurity, on the other hand, can give rise to inner conflicts.



**Figure 1:** Percentage of patients with different psychiatric disorder after psychiatric evaluation



**Figure 2:** Number of patients on 3 months treatment after baseline psychiatric evaluation

Our study also showed a greater proportion of male patients (33/40; 82.5%) and are middle-aged (Mean 39.5 years). The study was performed in the state of Mumbai, the commercial capital of India, where the cost of living and the need for working deadlines are demanding. Hence, possibly the this study showed all patients with stressed personality.

Bazzazi *et al.*<sup>[6]</sup> examined whether Iranian patients with CSCR have higher anxiety scores or anxiety is lower if CSCR has been experienced twice and whether anxiety scores differ between sexes. The studied involved 30 patients with CSCR and 30 healthy age and sex-matched controls. It was shown that patients with idiopathic CSCR experienced higher anxiety irrespective of whether CSCR was experienced first or second time, and anxiety scores did not differ between males and females. This study confirms our findings of Anxiety disorders in all our patients with stress personality.

Kim *et al.*<sup>[8]</sup> have shown that psychological factors such as anxiety, depression or stress were associated with CSCR in the active phase but not in the inactive phase. The study has also shown that active CSCR was associated with depression, inadequate stress coping and less support. The study measured the frequency of stressful life events and the degree of stress perceived by individuals which might have varied according to their mechanism for coping and or their degree of social support. Conrad *et al.*<sup>[3]</sup> have also shown psychological distress in patients with CSCR assuming disease-related factors such as loss of visual acuity and subjective assessment of the severity of eye disease as well as personality traits may contribute significantly illness-related stress at work and in private life. Compared to controls, CSCR patients showed a significantly higher degree of emotional stress.

Temperament is defined as heritable individual difference and reward dependence is viewed as heritable bias in associative learning in response to reward.<sup>[14]</sup> Reward dependent individuals have a heritable tendency to respond intensely to reward and learn to maintain rewarded behavior. Low reward dependence, as shown in CSCR patients, is associated with antisocial personality, which is the reverse of the traits seen in passive, dependent personalities. These individuals are socially and emotionally detached, content to be alone, independently self-willed and, usually practical and tough-minded and act for immediate gratification. Conrad *et al.*<sup>[3]</sup> could demonstrate a strong association between subjective assessment of stress due to CSCR in the job and high harm avoidance, low cooperativeness, and high subjective severity of illness. They reported that while temperament characteristic reward dependence is heritable, one might argue that lower cooperativeness is associated with lower social support, which might cause problems in challenging situations in the work environment when vision impairment may lead to feeling helplessness. In the study, sociodemographic characteristics, as well as illness characteristics, did not contribute significantly to stress. The findings indicate that the subjective assessment of disease severity and temperament dimension cooperativeness are significant predictors of illness-related work stress. The authors concluded that CSCR patients at risk of developing stress in the working environment that may benefit from psychoeducation informing about the

association of uncontrollability, helplessness, lack of supportive interpersonal communication, stress, and careful explanation of the mechanism of disease, planned treatment, and prognosis. It should be the first step to enhance patient's self-efficacy.

It has been shown that activation of the mineralocorticoid receptor (MR) in choroidal endothelium cells suggests a molecular mechanism for choroidal vasodilation in CSCR and MR antagonists have shown promising results in the treatment of chronic CSCR.<sup>[8,15-17]</sup> It is known that MR plays an essential role in the hypothalamic-pituitary-adrenal axis and is the principal mediator in stress. It is postulated that there may be a link between depression and acute CSCR via inappropriate MR activation.

The difference in the patient profile between published literature from developed countries and this study from the city of Mumbai, India, is that most patients are from middle and lower-income group, Daily wage earners, Self-employed business individuals, office boy, Construction and Building workers. The study center mainly drains patients from the above group, more importantly, as it is located close to one of the world's largest slums. Hence, it depicts the psychological stress plays an essential part in these group of individuals. Whereas, reported works of literature are mainly from developed countries.

This study has clearly shown that psycho-evaluation demonstrated 100% of patients have psychological disorders, mainly mixed anxiety disorders in the majority, then major depression disorder as well as an adjustment disorder. The characteristic of the this study is ocular non-intervention throughout the observation of 12 months. All patients were on anxiolytics and or antidepressants for 3 months. The participants were from the Commercial city of Mumbai in India. Mumbai is India's largest city (by population) and is the financial as well as the commercial capital of the country as it generates 6.16% of the total GDP. It serves as an economic hub of India, contributing 10% of factory employment, 25% of industrial output, 33% of income tax collections, 60% of customs duty collections, 20% of central excise tax collections, 40% of India's foreign trade and ₹40 billion (US\$580 million) in corporate taxes.<sup>[18]</sup> It can be hypothesized that these middle-aged patients in peak profile of their Job, encompassed and challenged to meet their social and individual demands both socially and emotionally causing anxiety, depression and adjustment disorders balancing between their work and family.

The highlight of the study is Psychiatric evaluation, use of anxiolytics medication with lifestyle modification. 90% (36/40) of patients did not have any recurrence in one year. This study also highlights that Psych evaluation should be in the management plan of acute CSCR, especially in individuals residing in metropolitan cities like Mumbai in India.

Since the study was designed to evaluate psychological incidence in this subset of patients and hence comparison with a control group to examine the effect of treatment besides other features of OCT and Angiographic leakage was not included in the study. A future study comparing the above may be the next step in validating the correlation of the study findings.

Unlike in a multispeciality hospital-based practice, a solo ophthalmology clinician may fairly judge the mental status of patients by focusing on questions and observations such as Feeling mentally low, Sad or hopelessness, Little interest or pleasure in doing things (for depression) and Feeling tense or wound up most of the time, Worrying thoughts, a sudden feeling of panic or Any recent stressor (for anxiety). Further to this, can probably allow the patient to undergo psychological status evaluation and management.

## Conclusion

In conclusion, all acute CSCR patients have a high risk of stress disorder, and psychiatric evaluation for understanding their stress disorder may play a significant role in the management of recurrent CSCR besides many other ocular and secondary systemic factors.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

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