



SEVERITY OF PSYCHOSOMATIC ILLNESS WITH CORRELATION TO VISUAL OUTCOME IN PATIENTS OF IDIOPATHIC CENTRAL SEROUS CHORIORETINOPATHY

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ABSTRACT

Aims: To assess the correlation of severity and visual outcome in patients of Idiopathic Central Serous Chorioretinopathy [ICSC] with degree of Psychosomatic illness using Hamilton rating scale for depression and anxiety (HAM-D & HAM-A) scoring chart. **Methods:** 33cases (40 eyes) (age 22-55) at the Department of Ophthalmology, RIO, Gauhati Medical college and Hospital, Guwahati presenting with ICSC were interviewed and checked in the Department of Psychiatry for the symptoms mentioned in HAM-D and HAM-A scoring system. They were than graded as having mild, moderate, severe and very severe psychosomatically ill and were followed for 6 months (0,3 and 6months respectively) to assess the prognosis in terms of vision. **Results:** The sample 33 cases (40eyes) included 29 (36 eyes) male patients and 4 females with an average age of 38.22 ± 8.56 years. Vision of the affected eye ranged from 0.20-1.10[log MAR] (mean vision was 0.61 [log MAR] and macular volume in affected eye ranged from 6.00mm³ -13.9 mm³(Mean macular volume 9.45mm³. Out of total 33 patients, 17 patients (51.5%) showed some degree of psychosomatic illness. 5 patients with moderate and all 2 patients with severe illness had b/l ICSC. At 6 months follow up, the mean vision was found to be 0.29 LOG MAR (Range 0.10-0.60 LOG MAR) and mean average macular volume was 8.41 mm³ (Range 6-11.8 mm³). **Conclusion:** The study revealed significant role of degree of psychosomatic illness with bilaterality, recurrence rate & final visual outcome in patients with ICSC.

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INTRODUCTION

Idiopathic central serous retinopathy (ICSC) is a common retinal disorder affecting healthy individuals between 20-45 years of age¹. It's in fact the 4th most common cause of blindness following Age related macular degeneration; diabetic retinopathy and hypertensive retinopathy. The patients usually present with symptoms of diminished vision loss; relative central scotoma; metamorphopsia; and micropsia. It is characterized by an idiopathic serous detachment of the neural retina almost always in the macular region and was first described by von Graefewho termed it as "relapsing central retinitis" in 1866². Subsequently a psychogenic related hypothesis for the development of ICSC gained popularity. It was first suggested by Hornikar³ in 1927. He was of the opinion that psychic disturbances precipitated angiospasm and secondary exudative manifestation in the macula. Cordes⁴, Werry and Arends⁵ described a neurotic personality structure in patients with CSC which could not, however, be confirmed by later studies.

Contradictory evidence has also been gathered regarding the number of life events before the onset of CSC.⁶⁻¹⁰ In the largest study with 230 patients, Tittl *et al*¹¹ found psychopharmacological medication use (anxiolytic and anti-depressive medication among 13% of the patients), corticosteroid use, and hypertension as factors associated with CSC. The authors speculate that increased sympathetic nervous system stimulation created by psychological stress may induce CSC.¹² However, in this study psychological symptoms of the patients were not directly explored. Altogether, investigations conducted until now on the subject of psychosomatic aspects of CSC have yielded inconsistent results.

In our study we tried to grade the degree of psychosomatic illness in patients with ICSC, and correlate the severity of ICSC in terms of average macular volume, average foveal thickness and visual outcome along with the bilaterality and recurrence rate of the disease in order to provide evidence regarding the association of the psychosomatic illness and ICSC. Only the patients who agreed to answer the questionnaire were enrolled in the study.

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MATERIALS AND METHODS

Between July 2016 and June 2017, 33 patients (n=40 eyes) of ICSC in the Regional Institute of Ophthalmology (RIO), Gauhati Medical College and hospital(GMCH) were enrolled in the study. The patients were subjected to thorough ophthalmological examination including visual acuity, colour vision, fundus examination, Optical Coherence Tomography(OCT) and Fundus Fluorescin Angiography(FFA) to confirm the diagnosis. The patients were then interviewed accordingly on the basis of questionnaire pattern as in HAM-D and HAM-Ascoring chart by the Department of Psychiatry. Total of 33 patients answered the questionnaire. Informed consent was taken from all cases. The patients were then asked for follow-up at 3 month and 6 month respectively.

Psychometric Instruments: The Hamilton Scoring chart for Anxiety (HAM-A) and for depression (HAM-D) were used. Each item is rated a score ranging from 0-4. The total score was then calculated and the patients were accordingly labelled as normal(score 0-7), mild illness(score 8-13), moderate illness (14-18), severe illness (score 19-22), very severely ill (score ≥ 23).The degree of psychosomatic illness thus calculated was then correlated with the severity of the disease in terms of vision and average macular volume. Moreover, the significance of the severity of psychosomatic illness with that of bilaterality and recurrence of ICSC was also studied.

Statistical Analysis

It was a hospital based prospective study. The data were presented as the mean± standard deviation. The data were compared accordingly on the basis of day 0, 3month and 6 month findings. To find correlation between the variables Pearson’s correlation of coefficient was applied. Descriptive statistics were calculated for sociodemographic data, clinical data, and all psychometric tests. To establish group differences at the interval scale level, the t-test for independent samples was employed A p-value of less than 0.05 was considered to be statistically significant.

RESULTS AND OBSERVATION

Demographic profile

Age distribution

Table 1 Showing age distribution and number of cases in each group

Age group	Number of patients	Percentage
20-29	3	9
30-39	13	39.4
40-49	11	33.33
50-59	6	18.2

Maximum number of patients were in the age group of 30-39 (13 patients). So the disease mainly affected the young middle aged group.

Sex Distribution

Table 2 showing sex distribution of the patients

Sex	Number	Percentage
Male	29	87.9
Female	4	12.1
Total	33	100

Maximum number of patients were male with a Male and Female ratio of 7.2: 1

Marital Status

Table 3 showing the marital statusand the seex distribution

Status	Numbers	Sex
Unmarried	11	2 F, 9M
Married	22	2 F, 20 M

The disease entity was more prevalent among married males (20 males among 29) whereas females were of equal numbers in both categories.

Laterality

Table 4 showing laterality and eyes involved

Laterality	Number Cases	Percentage
Unilateral	26	78.8
R/E	12	
L/E	14	
Bilateral	7 (14 EYES)	21.2

The study showed that 26 cases had unilateral involvement and rest 7 cases had both right and left eyes involved. Out of the Unilateral cases 12 cases had their right eye involved and 14 eyes had their left eye involved.Out of the 40 eyes we examined, 7 eyes had recurrent attack. 5 eyes out of these 7 were having bilateral symptoms when they presented to us.

Psychosomatic Degree

The psychosomatic degree was scored as having normal score, mild degree, moderate degree, severe degree and very severe degree on the basis of HAM-D and HAM-A scoring chart.

Table 5 Showing the Degree of Pyscosomatic Illnes And Number of Cases

Degree	Number of Cases(N=33)	Percentage
Normal (≤ 7)	16	48.5
Mild (8-13)	5	15.15
Moderate (14-18)	10 (5 B/L)	30.3
Severe (19-22)	2 (ALL B/L)	6.06
Very Severe (≥23)	0	

The average score of psychosomatic illness was found to be 9.38 (range 0-22, SD- 6.24). Out of 33 cases, 16 cases were having normal score and rest 17 cases showed psychosomatic illness. All bilateral cases had moderate to severe degree of illness (5 cases had moderate degree, 2 cases had severe degree)

Vision at Day 0 of Presentation

The vision of all 40 eyes was recorded using Snellen’s chart and Landolt-C chart and the vision thus recorded was then converted to LOG MAR notation forstatistical convenience. The results obtained were as follows:

Table 6 showing LOG-MAR vision at day 0 of 0 of present

Vision	Logmar notation	NO.OF EYES(N=40)	(%)
6/9-6/12	0.20-0.30	16	40
6/18-6/24	0.50-0.60	7	17.5
6/36-6/60	0.80-1.00	8	20
FC-HM	1.10	9	22.5

The mean vision recorded at Day 0 of presentation was 0.61 LOG MAR (Range 0.2-1.1, SD- 0.37, p value 0.0004). Maximum patients had a vision in the range of 0.20-0.30 (40%)

Average Macular Volume at Day 0

Table 7 showing average macular volume at day 0 and the number of eyes in each range

Average macular volume(mm ³)	Number of eyes(n)	%
6.00-7.90	16	40
8.00-9.90	7	17.5
10.00-11.90	8	20
12.00-13.90	9	22.5

The Average Macular Volume at Day 0 of presentation ranged from 6.00-13.90 mm³ with a mean macular volume of 9.45 mm³ (SD 2.47, p value 0.0198). 40% of eyes had an average macular volume of 6-7.9 mm³. All 12 cases in moderate and severe degree of psychosomatic illness had a macular volume ranging from 10.00-13.90 mm³ which signified that the severity of psychosomatic illness is positively correlated to the severity of the disease entity.

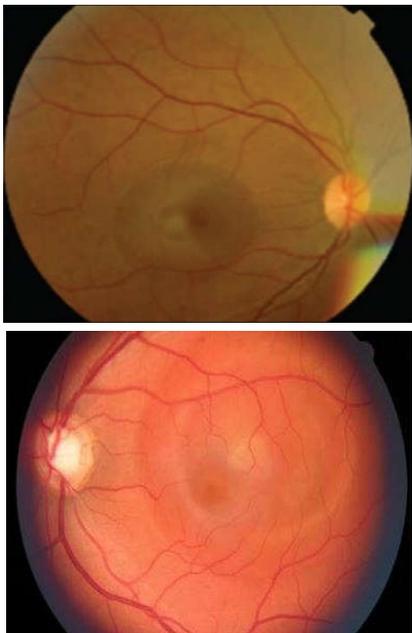


Fig 1 Ring Reflex of IcsC In Both R/E And L/E

The patients with some degree of psychosomatic illness were referred to Psychiatry Department for further management. Most of the patients required counselling for their stress (physical or mental). Only the patients showing severe degree of Psychosomatic illness were started on Selective Serotonin Reuptake Inhibitor and Anxiolytic drugs. The patients started on therapy were called up for monthly follow-up and the treatment was adjusted accordingly.

All patients were followed up at 3 months and 6 months respectively. The prognosis of the disease was recorded in terms of improvement in vision and resolution of the average macular volume. The psychosomatic illness was also treated in this time duration and the score of illness reduced from an average score of 9.38 (range 0-22, SD-6.24) to average score of 8.27 (range 0-18, SD-5.10) within 6 months At 6-month final follow up, the mean vision of the patients was recorded to be 0.29 LOG MAR [Range 0.1(6/6)-0.6(6/24) log mar, SD

0.18, P value-<0.0001]. The mean macular volume was found to be 8.41 mm³ (Range 6-11.8 mm³, SD 1.65, P value-<0.0001). Out of 40 eyes, 20 eyes showed almost full vision recovery (up to 6/9, LOG MAR 0.20) within 3 months and 10 showed resolution within 6months (up to maximum of 6/12, LOG MAR 0.30) and remaining 10 recovered vision up to maximum of 6/24 (LOG MAR 0.60). These 10 eyes which showed delayed resolution and relatively poor recovery of vision were having moderate to severe degree of psychosomatic illness. One more important observation in the study was that the patients with psychosomatic illness showed bilateral disease and were having the disease for the second time. So it can be stated that, the severity of the psychosomatic illness is significantly related to severity, bilaterality and increase in the recurrence rate of ICSC with poor visual outcome and slow resolution of the disease in comparison with those patients without psychosomatic illness.

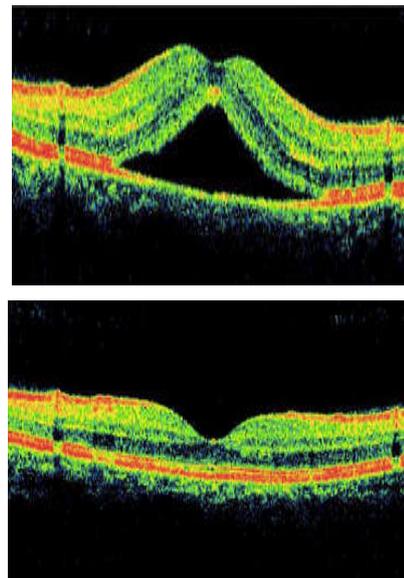


Fig 2 Showing oct Picture of IcsC At Day 0 And At 6 Month Respectively

Correlation between Psychosomatic Illness with Vision and Average Macular Volume (Cubic Mm)

	Mean Vision (Log Mar)	Mean Average M.V (MM3)	Average Score
1 st Day	0.61	9.45	9.38
6 Month	0.29	8.41	8.27
Correlation Coefficient	0.9935	0.9935	0.9935
P Value	<0.0065	<0.0065	<0.0065

The two tailed p-value is considered extremely significant

DISCUSSION

From our study, it was seen that Idiopathic Central Serous Chorioretinopathy is a disease which affects mainly middle aged males. Most patients were in the age group of 30-39 with a male and female ratio of 7.2:1. Among 33 cases, 22(66.7%) were married and lived with their families. All patients had some level of physical or mental stress in their day to day life.

Spaide *et al*¹³ in 1996 showed a mean age group of 49.8 years in his study. Similar other studies by Kitzmann *et al*¹⁴, Baran *et al*¹⁵, Haimovici *et al*¹⁶ found age group to be 39-51 years.

The sociodemographic data confirm that central serous chorioretinopathy is predominantly an ailment of middle aged, socially well integrated men. One study suggests elevated

psychic stress a few weeks after the onset of the ailment.¹⁷ The eyes as an organ system, and the macula as an ultimate target area, can be intermittently or continuously stimulated adversely by Type A behavior and its physiological consequences, most notably a sympathetic discharge.^{18,19} Most ICSC patients are hard driven and tense with compulsive personalities. It is now a well-established fact that ICSC is a stress related disease and people with type A are more prone to this disease.

In a small study of 33 cases by Gelber and Schatz with ICSC, 91% had experienced a very disturbing psychological event prior to the disturbed vision and the majority were tense ridden.¹⁷ Psychologic stress has been recognized to be an important risk factor for development of ICSC. Haimovici *et al* hypothesized that medical and social factors having a stress related component such as asthma, migraine, and others could be more prevalent among ICSC patients than controls.¹⁶

In our study, all patients were interviewed for psychometric analysis and the level of their stress was given a score using the HAM-D and HAM-A scoring chart. It was seen in the study that out of 33 cases 16 cases had normal score and rest 17 cases (51.5%) had psychosomatic illness whether mild, moderate and severe. No cases were reported to have very severe illness. Moreover, we also could see that out of 33 cases, 7 cases had both eyes involved at the time of presentation. Out of these 7 cases, 5 cases (72.4%) had moderate degree of psychosomatic illness and rest 2 had severe degree. Moreover, out of 40 eyes 7 eyes were having the disease for the second time. These cases were counselled for their psychosomatic diseases by the Dept. of Psychiatry and kept on follow up. At the end of 6month follow up the study results showed a reduction of mean psychosomatic score from 9.38 to 8.27($r=0.993$). The mean vision improved from 0.61 LogMar(0.2-1.1, SD 0.37, $p < 0.0004$) to 0.29 Log Mar (0.1-0.6, SD 0.18, $p < 0.0001$) at the end of 6 months. The mean macular volume calculated from OCT improved from 9.45mm³(6-13.9mm³, SD 2.47, $p < 0.0198$) at day 0 of presentation to 8.41mm³(6-11.8, SD 1.65, $p < 0.0001$)

The correlation between mean vision, mean macular volume, and psychosomatic degree showed correlation coefficient (r) to be 0.993 with a p value of < 0.006 (significant).

Spahn *et al* in 2003 in their study of 24 cases "Psychosomatic aspects in patients with Central serous chorioretinopathy" showed that 1/3rd of the patients had elevated psychic stress.²⁰ But it was unclear to what extent, heightened psychic stress was a result of the ailment. The study showed insignificant result and weak statistical correlation owing to the small sample size.

Tittl *et al* reported use of psychopharmacological medication and corticosteroids with significantly greater frequency than in a comparison group of patients with other ocular findings, this involved only 13% of the patients with CSC.²¹ In our sample, none of the patients was taking any medication.

Emotional instability, insecurity, and nervousness have previously been described as personality traits of patients with CSC.^{6,7} This was also shown by the patients in our sample, who, however, were particularly spontaneous and flexible as well. These results may permit the hypothesis 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. Such an interpretation can of course only be considered as a hypothesis which must be tested with a larger sample of patients.

Our study showed a significant correlation of the degree of psychosomatic illness to that of the severity of ICSC and its prognosis. So taken strictly the fact that cumulative previous stress and the resultant raised level of stress hormones influence the onset of ICSC, measures must be taken to modify these psychological parameters before the outbreak of the ailment.

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