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Characteristics of Central Serous Chorioretinopathy Patients at Padang Eye Center Hospital in 2019-2023

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ABSTRACT

Background: Central Serous Chorioretinopathy (CSCR) is a condition where serous fluid collects in the retinal pigment epithelium (RPE) which results in detachment of the neurosensory layer of the retina. Several risk factors that cause CSCR are gender, age, use of corticosteroids, 3rd trimester pregnancy, stress, type A personality, and use of anti-psychotic drugs. Objective: The purpose of this study was to describe the characteristics of Central Serous Chorioretinopathy (CSCR) patients at RSKM Padang Eye Center in 2019-2023. Method: The scope of this research is the field of eye disease. This research was conducted from December 2023 the study was conducted using categorical descriptive study. The population of this study were all Central Serous Chorioretinopathy (CSCR) patients recorded in the medical records at RSKM Padang Eye Center with a total of 34 samples using a total sampling technique. Data analysis uses univariate analysis, the data obtained will be processed with SPSS Statistics 26.0 and presented in table form. Results: From 34 patients with Central Serous Chorioretinopathy (CSCR) at RSKM Padang Eye Center, the majority were in the late adult age category ranged from 36-45 years old (52.9%). The most common gender is male by 73.5%. The initial visual acuity of the patients was good (6/6-6/18) were 35.3%, moderate visual acuity (<6/18-6/60) were 41.2%, and poor visual acuity (<6/60) were 23.5%. The most common treatment was diclofenac sodium as much as 73,5%. The patient's final visual acuity was good (6/6-6/18) were 82.4%, moderate visual acuity (<6/18-6/60) were 14.7%, and poor visual acuity (<6/60) were 2.9%. A total of 82.4% experienced improved visual acuity. Conclusion: Central Serous Chorioretinopathy (CSCR) were mostly 36-45 years old, male, with moderate initial visual acuity, received diclofenac sodium management, and good final visual acuity, most of the patient's experienced improvement in visual acuity.

Keywords: *Central Serous Chorioretinopathy, Neurosensory layer detachment, Retinal pigment epithelium,Risk Factor*

INTRODUCTION

Central Serous Chorioretinopathy (CSCR) is characterized by the accumulation of subretinal fluid that causes the detachment of the serous layer in the neurosensory layer of the retina resulting from lesions in the retinal pigment epithelium (RPE).[1] Clinically, CSCR provides an image of a raised area of the macula in the shape of a dome, which is clearly visible using imaging tests such as Optical Coherence Tomography (OCT) of the macula.[2] Patients with CSCR generally complain of blurred vision, central scotoma, perceptual distortions such as metamorphopsia and micropsia, as well as color perception disorders (dyschromatopsia).[3]

Central Serous Chorioretinopathy (CSCR) is the fourth most common retina-related disease after Age-related Macular Degeneration (AMD), Diabetic Retinopathy, and central venous occlusion.[4] The average duration of CSCR symptoms lasts for 4 – 4.7 months.[5] The incidence rate of CSCR in men compared to women reaches 8:1.[6] Although CSCR can occur in all age groups,

the disease is most commonly found in people with the middle adult age group, where it is most commonly suffered by people aged 35-45 years.[7]

Some of the risk factors that cause CSCR include gender, age, corticosteroid use, cardiovascular disease, hypertension, 3rd trimester pregnancy, stress, Helicobacter pylori infection,[6] type A personality, and the use of anti-psychotic drugs.[3]

The main management of CSCR is observation, photodynamic therapy (PDT) and laser procedures.[8] The management given to CSCR patients according to the National Health Service (NHS) includes: Photodynamic therapy (PDT), conventional lasers such as argon lasers, High-density subthreshold micro-pulse lasers, selective retinal lasers, and oral medicines such as diclophonec sodium tablets, spironolactone tablets and roborancid tablets.[2] Most cases of acute CSCR have a good prognosis and can recover spontaneously within 4 months so that observation management can be carried out.[8]

The duration of CSCR symptoms plays a very important role in determining the course of the disease and the patient's final vision. The longer the duration of the symptoms experienced by the patient, the worse the prognosis of this disease caused by various changes in the retinal pigment epithelium (RPE).[7] In both persistent and recurrent cases, there can be broader changes in RPE and subretinal neovascularization that cause progressive visual impairment.[2]

There has been no research on Central Serous Chorioretinopathy (CSCR) conducted in the city of Padang. Based on this background, the researcher wants to find out the characteristics of Central Serous Chorioretinopathy (CSCR) patients at Padang Eye Center Hospital.

METHODS

This study is categorical descriptive research using a cross-sectional approach design conducted at the Padang Eye Center Hospital. A sample of 34 from the medical record data of CSCR patients at the Padang Eye Center Hospital in 2019-2023, the sampling technique in this study is total sampling.

Inclusion criteria, patients diagnosed with Central Serous Chorioretinopathy (CSCR) at Padang Eye Center Hospital in 2019-2023. Exclusion criteria, namely patients who have refractive errors and other diseases with incomplete medical records. The data analysis in this study used univariate analysis. This research was carried out in December 2023 and has passed the ethics test of the Faculty of Medicine, Baiturrahmah University.

RESULTS AND DISCUSSION

a. Age

Based on table 1, it can be concluded that of the 34 patients with Central Serous Chorioretinopathy, the most age was obtained in the age group of 36-45 years, namely 18 people (52.9%).

Table 1. Frequency Distribution of Patients with Central Serous Chorioretinopathy (CSCR) at Padang Eye Center Hospital by Age.

Age	f	%
26 - 35 years	6	17,6%
36 - 45 years	18	52,9%
46 - 55 years	6	17,6%
56 -65 years	4	11,8%
>65 years	-	
Total	34	100%

Source: Data Processing

Based on the results of the study, it was found that of the 34 patients of Central Serous Chorioretinopathy (CSCR) at the Padang Eye Center Hospital in 2019-2023, it showed that the most age was in the late adult age category of 36-45 years, namely 18 people (52.9%). This result is in line with the research conducted by Sahoo N et al. (2019) which states that the incidence of CSCR is more common in the age group of 35-45 years.[7] Meanwhile, according to research by Iklikuddin A at Cicendo Eye Hospital from January 2016 to December 2016, the prevalence of the most age of suffering from CSCR was 40-49 years old (43.18%).[9] The results of this study are also different from the research conducted by Kido A et al. from 2011 to 2018 in Japan which stated that the most common age of suffering from CSCR was 40-44 years and 50-54 years.[10]

There are no studies that explain how age group affects the incidence of CSCR, but some researchers argue that CSCR is more common in younger men.[11] This is related to a decrease in testosterone levels in men as they age, which plays an important role in the incidence of CSCR.[12]

b.

Based on table 2, it can be concluded that of the 34 patients with Central Serous Chorioretinopathy, the most gender is male, namely 25 people (73.5%).

Table 2. Frequency Distribution of Central Serous Chorioretinopathy (CSCR) Patients at Padang Eye Center Hospital by Gender.

Gender	f	%
Male	25	73,5%
Female	9	26,5%
Total	34	100%

Based on the results of the study, it was found that of the 34 patients with Central Serous Chorioretinopathy (CSCR) at Padang Eye Center Hospital in 2019-2023, it showed that the most common gender was male, namely 25 people (73.5%). The results of this study are in line with previous research conducted by Kido A et al. from January 2011 to December 2018 in Japan which

stated that the gender of CSCR sufferers was male, which was 75.9% of 257,930 cases.[10] The same thing was also found in a study conducted by Chhablani J et al. (2019) in South India that 88% of CSCR patients were male.[13] These results are in line with the theory that men are 6 times more likely to develop CSCR compared to women.[14]

There has been no research that definitively explains why the incidence of CSCR is higher in men than in women. However, according to a study conducted by Ciloglu, et al. the high incidence of CSCR in men is related to testosterone levels.[15]

C. INITIAL VISUS

Based on table 3, it can be concluded that of the 34 patients with Central Serous Chorioretinopathy, the most initial visus was obtained in the moderate visus category, namely 14 people (41.2%), followed by good visus as many as 12 people (35.3%), and the least was bad visus, which was 8 people (23.5%).

Table 3.
Frequency Distribution of Central Serous Chorioretinopathy (CSCR) Patients at Padang Eye Center Hospital Based on Initial Vision.

Visus	f	%
Good (6/6-6/18)	12	35,3%
Medium (<6/18-6/60)	14	41,2%
Poor (<6/60)	8	23,5%
Total	34	100 %

Based on the results of the study, it was found that of the 34 patients with Central Serous Chorioretinopathy (CSCR) at the Padang Eye Center Hospital in 2019-2023, the most initial vision was obtained in the medium category, namely 14 people (41.2%). This result is different from the research conducted by Ikliluddin A at Cicendo Eye Hospital in 2016 which stated that the most initial vision was in the range of 0.4 logMAR – 0.1 logMAR which means that the most initial vision was in the good category. Research conducted by Islam Ul et al. (2017) found that the most initial vision was 0.6 logMAR-0.4 logMAR which was included in the medium category.[16] Islam Ul et al. in their study reported that in acute CSCR, a worse initial vision showed a significant relationship with a larger SRF dimension and outer nuclear layer (ONL) depletion in fovea.[16]

D. TREATMENT

Based on table 4, it can be concluded that of the 34 patients with Central Serous Chorioretinopathy, the most treatment is sodium diclofenac, which is 25 people (73.5%). Governance can also be a combination of drugs or actions.

Table 4. Frequency Distribution of Central Serous Chorioretinopathy (CSCR) Patients at Padang Eye Center Hospital Based on Management.

Treatment	f	%
Carbonic anhydrase inhibitor	11/34	32,4%
Anti-VEGF injection	4/34	11,8%
Focal laser photocoagulation	-	
Spironolactone	-	
Observation	10/34	29,4%
Diclofenac sodium	25/34	73,5%
Others	3/34	8,8%

Based on the results of the study, it was found that of the 34 patients with Central Serous Chorioretinopathy (CSCR) at the Padang Eye Center Hospital in 2019-2023, it showed that the most common treatment was dichlorophenic sodium, which was 25 people (73.5%). In line with the research conducted by Ikliluddin A. (2016) which stated that 67.42% of CSCR patients at Cicendo Eye Hospital received observation management combined with diclofenac sodium eye drops. This result is different from the research conducted by Sahoo N et al. (2019) which stated that the management of the most CSCR patients was observation where observation was carried out on 94 out of 146 patients.[5]

Central Serous Chorioretinopathy (CSCR) is a self-limiting disease and can resolve spontaneously in 3-4 months. So that observation can be used as a first-line management for new cases with a duration of less than 3 months.[17] The use of diclofenac sodium for the management of CSCR patients is supported by a study conducted by Bahadorani et al. which stated that patients who received therapy with NSAID drugs had faster SRF improvement results.[18]

E. FINAL VISUS

Based on table 5, it can be concluded that of the 34 patients with Central Serous Chorioretinopathy, the most final visus was obtained in the good category, namely 28 people (82.4%), followed by moderate vision, as many as 5 people (14.7%), and the least had bad vision, namely 1 person (2.9%).

Table 5. Frequency Distribution of Central Serous Chorioretinopathy (CSCR) Patients at Padang Eye Center Hospital Based on Final Visus.

Visus	f	%
Good (6/6-6/18)	28	82,4%
Medium (<6/18-6/60)	5	14,7%
Poor (<6/60)	1	2,9%
Total	34	100 %

Based on the results of a study of 34 Central Serous Chorioretinopathy (CSCR) patients at Padang Eye Center Hospital in 2019-2023 who underwent management for more than 1 month, an increase in visus was obtained in 28 people (82.4%). These results show that there is an increase in visus after management is carried out on CSCR patients. The results of this study are in line with the research conducted by Ikliluddin A (2016) which stated that the patient's visus during the most one-month follow-up was 0.4 logMAR – 0.1 logMAR, which was included in the good category.[9] A study conducted by Islam Ul et al. (2017) found that patients with an initial vision of 6/12 or better were significantly associated with a good final vision.[16]

F. VISUS CHANGES

Based on table 6, it can be concluded that from 34 patients with Central Serous Chorioretinopathy, the most visus changes were obtained in the increased category, namely 28 people (82.4%).

Table 6. Distribution of Frequency of Visus Changes in Central Serous Chorioretinopathy (CSCR) Patients at Padang Eye Center Hospital.

Visus Changes	f	%
Increase	28	82,4%
Settle	3	8,8%
Decrease	3	8,8%
Total	34	100%

Based on the results of a study of 34 Central Serous Chorioretinopathy (CSCR) patients at Padang Eye Center Hospital in 2019-2023 who underwent management for more than 1 month, an increase in visus was obtained in 28 people (82.4%). The same thing was also found in a study conducted by Walkden in April 2017 to April 2018 which stated that of the 51 CSCR patients, most of them experienced an increase in visus, which was 45.1%, while CSCR patients who experienced a decrease in visus was 5.9%.[19]

There has been no research that definitively explains what affects the change in vision. Islam Ul et al. (2017) in their study stated that the prognosis of visus in CSCR patients depends on the initial visus, duration of symptoms, OCT and FFA picture, and the presence of risk factors. Meanwhile, the poorer final vision shows a significant relationship with the larger SRF dimensions and the depletion of the outer nuclear layer (ONL).[16]

F. COMPARISON OF INITIAL VISUS AND FINAL VISUS AFTER 1 MONTH OF THERAPY

Based on table 7, it can be concluded that there is an increase in the percentage of patients with good vision by 47.1%, a decrease in the percentage

of patients with moderate vision by 26.5% and a decrease in the percentage of patients with bad vision by 20.6%.

Table 7. Comparison of initial and final visus of Central Serous Chorioretinopathy patients at Padang Eye Center Hospital after 1 month of therapy.

Categories Visus	Initial Visus	Final Visus	Information
Good	35,3%	82,4%	Increase
Medium	41,2%	14,7%	Settle
Poor	23,5%	2,9%	Decrease
Total	100%	100%	

Source: Data Processing

Based on the results of the study, it was found that from the comparison of the initial vision and the final vision after 1 month of therapy, there was an increase in the percentage of CSCR patients with good vision by 47.1%, a decrease in the percentage of moderate vision by 26.5% and a decrease in the percentage of bad vision by 20.6%. This result is in line with the research of Ikkliluddin A (2016) which showed an increase in the percentage of good vision by 34.9%, a decrease in the percentage of moderate vision by 29.2%, and a decrease in the percentage of bad vision by 5.7%.[2] It is also in line with the research conducted by Islam UI, et al. in November 2011 to August 2016 which found that the final vision of CSCR patients tends to be good, which is at an average of 0.18 ± 0.14 logMAR.[16]

According to Bartollino S, et al. CSCR is an eye disease with a good visual prognosis, and will resolve on its own within a few months either with or without action or also called self-limiting disease, which is 90-95% of the total cases of CSCR patients will experience visual improvement within a few months after the SRF disappears.[20]

CONCLUSION

Based on the results of the study on the characteristics of Central Serous Chorioretinopathy patients at the Padang Eye Center Hospital from 2019 to 2023, it can be concluded that the most affected age group is the late adult age, ranging from 36-45 years, accounting for 52.9% of the cases. Males constitute the majority of patients, representing 73.5% of the total. Regarding the patients' initial vision, 35.3% had good vision (6/6-6/18), 41.2% had medium vision (<6/18-6/60), and 23.5% had poor vision (<6/60). In terms of management, 32.4% of patients were treated with carbonic anhydrase inhibitors, 11.8% received anti-VEGF injections, 29.4% were under observation, and 73.5% were administered sodium diclofenac. The final visual outcomes showed significant improvement, with 82.4% achieving good vision (6/6-6/18), 14.7% maintaining medium vision (<6/18-6/60), and

2.9% having poor vision (<6/60). Overall, 82.4% of patients experienced an improvement in vision.

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