

Treat and Extend Regimen of Aflibercept in the Treatment of Type I Choroidal Neovascularization Secondary to Chronic Central Serous Chorioretinopathy: Three-year Follow-Up

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Purpose: To report three-year treatment results of intravitreal aflibercept using a treat-and-extend (TAE) regimen for type 1 choroidal neovascularization (CNV) in chronic central serous chorioretinopathy (CSC).

Patients and Methods: This prospective, single-center interventional study completed 34 patients (34 eyes) (16 patients previously treated by photodynamic therapy (PDT) and 18 naive patients) treated with 2.0 mg intravitreal aflibercept. All patients received 3 initial loading intravitreal injections every 4 weeks, followed by a TAE protocol. The primary outcome was decimal best-corrected visual acuity (BCVA) at year 3.

Results: Overall, mean decimal BCVA increased significantly from 0.44 (SD; 0.35) at baseline to 0.59 (SD; 0.31) at the final visit ($p < 0.001$). At year 3, mean decimal BCVA in the PDT-treated group compared to the naive group was statistically different, 0.48 (SD; 0.29) vs 0.71 (SD; 0.31), respectively ($p = 0.04$). Overall, complete resolution of fluid was noted in 73% at 3 years. Complete resolution of fluid in the PDT-treated group and the naive group was 56% and 89% ($p = 0.01$), respectively. The total mean number of aflibercept injections was 18.0 (SD; 5.6). Mean number of injections was 20.1 (SD; 5.3) in the PDT-treated group and 15.9 (SD; 5.8) in the naive group ($p = 0.03$).

Conclusion: Intravitreal aflibercept using a TAE regimen improved visual and anatomical outcomes of patients with type 1 CNV secondary to chronic CSC in long-term follow-up. Naive patients had a better visual outcome and a higher incidence of complete fluid resolution than PDT-treated patients.

Keywords: chronic central serous chorioretinopathy, choroidal neovascularization, anti-vascular endothelial growth factor, aflibercept, treat-and-extend regimen

Introduction

Central serous chorioretinopathy (CSC) is a choroidal disease characterized by a chronic course and complications resulting from increased damage to the retinal pigment epithelium (RPE).¹ CSC occurs mainly in younger than 50 years men, but this gender predilection decreases with age.² Complications of CSC include choroidal neovascularization (CNV), subretinal hemorrhage, bullous CSC, and fibrin deposition, which can develop into a subretinal fibrous scar.¹

CNV in CSC has been reported with the incidence ranging from 2% to 18% in previous studies.^{2–4} The female sex, chronic CSC, choroidal vascular hyperpermeability, and a poor baseline best-corrected visual acuity (BCVA) are risk factors for type 1 CNV in patients with CSC.⁴ With the introduction of optical coherence tomography angiography (OCT-A), CNV can be more easily detected non-invasively, without the difficulties caused by conventional dye

angiography. Using OCT-A, CNV network has been detected in almost 45% to 54% of eyes with chronic CSC, which was higher than that of previous studies.^{5,6}

The development of intravitreal anti-vascular endothelial growth factor (anti-VEGF) drugs has significantly improved the treatment results of patients with retinal neovascularization and CNV.^{7–10} There is good evidence for the efficacy of intravitreal aflibercept in CNV secondary to age-related macular degeneration, myopia, pseudoxanthoma elasticum and chorioretinitis.^{9–12}

To date, there is no standard treatment for CSC complicated with CNV. Anti-VEGF agent is commonly used for CNV in chronic CSC, and its intravitreal administration has become the first-line treatment.¹³ Previous studies have demonstrated the varying results of intravitreal injections of anti-VEGF (ranibizumab, aflibercept) with different patterns of administration for the treatment of CNV in chronic CSC. MINERVA STUDY demonstrated the treatment efficacy of ranibizumab pro re nata (PRN) protocol in adult patients with CNV because of an uncommon cause enrolled.¹³ Nevertheless, anatomical non-response, characterized by persistent fluid, is often observed despite a monthly as-needed regimen treatment with ranibizumab and aflibercept.¹⁴ Another study has shown that anatomical treatment response is better in the upload of six over three initial anti-VEGF injections in patients with CNV secondary to CSC.¹⁵ A treat-and-extend (TAE) regimen protocol is used to treat patients with type 1 CNV in chronic CSC. Prospective study provides evidence that an aflibercept monotherapy TAE regimen can produce good visual and anatomical outcomes over 12 months while extending the interval between the injections.¹⁶

However, limited information is available on the long-term results of aflibercept in type 1 CNV secondary to chronic CSC. Therefore, the purpose of the present study was to report three-year treatment results of intravitreal aflibercept for type 1 CNV in chronic CSC using a TAE regimen.

Methods

Study Design and Setting

This was a prospective, single-center interventional study, The Filatov Institute of Eye Diseases and Tissue Therapy of the National Academy of Medical Sciences of Ukraine included patients who were treated with aflibercept for type 1 CNV in chronic CSC between January 2019 and December 2024. Written informed consent for study participation was obtained from the patients and approved by the local ethics committees in accordance with the principles of the Declaration of Helsinki. Protocol was approved by the Ethics Committee of The Filatov Institute of Eye Diseases and Tissue Therapy of the National Academy of Medical Sciences of Ukraine (approval number: 1, 2021).

Patient Selection

The study included patients with active type 1 CNV secondary to chronic CSC, with typical symptoms in multimodal imaging on spectral domain optical coherence tomography (SD-OCT), fluorescein angiography (FA) and OCT-A as follows: RPE changes, intraretinal fluid (IRF), subretinal fluid (SRF), subfoveal choroidal thickness (SFCT) on SD-OCT; leakage on FA; and identified neovascular network on OCT-A; age ≥ 18 years old. Exclusion criteria were: diseases of the macula that may affect visual acuity (polypoidal choroidal vasculopathy, age-related macular degeneration, high myopia of ≥ -6.00 diopter spherical equivalent, diabetic retinopathy, retinal vascular occlusion, and any hereditary disease of the retina), other eye diseases that affect visual acuity (for example, glaucoma), intraocular surgery (except uncomplicated cataract surgery carried out more than 3 months before the start of the study), presence of acute intraocular or periocular inflammatory processes; general diseases in stage of decompensation (for example, diabetes mellitus, hypertension), and inability to obtain patient consent.

Treatment

All patients received 3 initial loading intravitreal injections of 2 mg (0.05 mL) aflibercept every 4 weeks, followed by a TAE protocol. The protocol included administration of aflibercept at 4-weekly intervals until IRF and/or SRF resolution; thereafter, the dosing interval was extended by 2 weeks. If there were signs of disease activity (SD-OCT evidence of IRF and/or SRF, reduction in BCVA) the interval between injections was reduced by 2 weeks.¹⁷

Study Visits

All patients underwent a comprehensive examination: decimal BCVA, biomicroscopy, measurement of intraocular pressure, color fundus photo, FA (TRC 50-EX; Topcon, Japan), SD-OCT and OCT-A (SOCT Copernicus OPTOPOL Technology S.A., Zawiercie, Poland). Decimal BCVA measured with standard Snellen chart, comprehensive ocular examination and OCT imaging were performed at each follow-up visit. FA, color fundus photo and OCT-A were performed at baseline and each follow-up visit as needed on an individual basis. SD-OCT was used to evaluate central retinal thickness (CRT), SFCT, and the presence of IRF or/and SRF. CRT was defined as the average thickness of the macula in the central 1mm diameter circle of the Early Treatment Diabetic Retinopathy Study grid, and was calculated automatically using bundled software. SFCT was assessed by manually measuring the distance between Bruch's membrane and the inner scleral surface at the central fovea.¹⁸ Complete fluid resolution in the macula was determined by the absence of IRF or/and SRF on SD-OCT. Diagnosis of type 1 CNV was obtained by FA and OCT-A were used to determine CNV. Safety was assessed by the occurrence of any adverse events including an increase in intraocular pressure, RPE and/or choroid atrophy, RPE tears, retinal detachment, endophthalmitis or uveitis during all follow-up periods.

Criteria for Assessing Treatment Outcome

The primary outcome was decimal BCVA at year 3. The secondary outcomes included CRT and SFCT, IRF or/and SRF resolution, number of injections, treatment-free interval and safety at year 3.

Statistical Analysis

Statistical analysis was performed with TIBCO® Statistica 14.0.1 (TIBCO Software Inc. Palo Alto, CA, USA). In this study, continuous data were presented as mean and standard deviation (SD); categorical data were shown as percentages and frequencies, % (n). The clinical characteristics were compared during follow-up using paired *t*-tests. The *t*-tests and Fisher's exact test were used to compare clinical characteristics between the naive and PDT-treated patients. In all statistical analysis procedures, a *p* value of < 0.05 was used for statistical significance.

Results

Demographics

In total, 36 patients (36 eyes) with type 1 CNV secondary to chronic CSC were included in the study, and 34 patients (34 eyes) with completed the 3-year follow-up. Two patients dropped out for reasons unrelated to the treatment: one patient discontinued visits for unknown reasons, and one patient was excluded due to violation of the treatment schedule.

Mean age of patients was 55 years (SD; 15), 15 were male (44%) and 19 were female (56%). Mean baseline decimal BCVA was 0.44 (SD; 0.35). At baseline, distribution of fluid was as followed: SRF in 31 patients (91%), IRF in 7 patients (21%), and both SRF and IRF in 4 patients (12%). Hyperreflective subretinal exudation was identified in 6 patients (18%). Sixteen patients (47%) had received photodynamic therapy (PDT) previously. The main demographic and baseline clinical parameters of the studied patients are shown in [Table 1](#).

Visual and Anatomic Outcomes

Mean decimal BCVA increased significantly from 0.44 (SD; 0.35) at baseline to 0.6 (SD; 0.3, *p* < 0.001) at year 1, 0.61 (SD; 0.3, *p* < 0.001) at year 2 and 0.59 (SD; 0.31, *p* < 0.001) at year 3 (shown in [Figure 1](#)). At year 3, 71% (24 out of 34 patients) gained BCVA improvement, 26% (9 out of 34 patients) – stabilization of BCVA and 3% (1 out of 34 patients) had BCVA decreased.

Mean CRT decreased significantly from 315 (SD; 90) µm at baseline to 225 (SD; 43, *p* < 0.001) µm at year 1, 223 (SD; 40, *p* < 0.001) µm at year 2 and 224 (SD; 49, *p* < 0.001) µm at year 3 (shown in [Figure 2](#)).

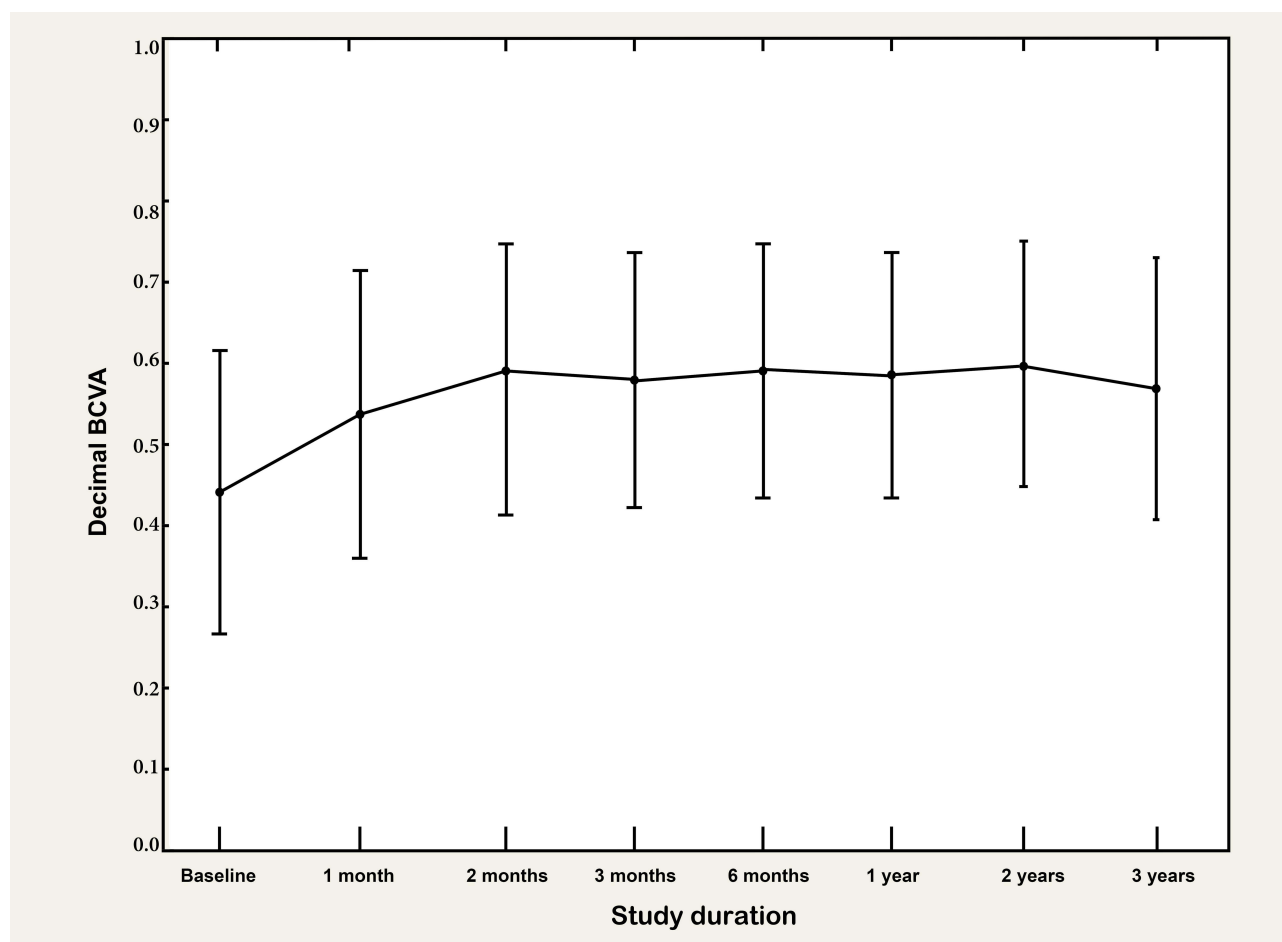
Mean SFCT decreased significantly from 398 (SD; 156) µm at baseline to 352 (SD; 133, *p* < 0.001) µm at year 1, 354 (SD; 128, *p* < 0.001) µm at year 2 and 355 (SD; 129, *p* < 0.001) µm at year 3 (shown in [Figure 3](#)).

Table 1 Baseline demographics of Patients with Type 1 CNV Secondary to Chronic CSC (n=34)

Characteristics	Values
Age (SD), years	55 (15)
Gender, n (%)	Male: 15 (44) / female: 19 (56)
Mean decimal BCVA (SD)	0.44 (0.35)
Mean CRT (SD), μm	315 (90)
SRF, n (%)	31 (91)
IRF, n (%)	7 (21)
SRF&IRF, n (%)	4 (12)
Subretinal hyperreflective deposits, n (%)	6 (18)
Mean SFCT (SD), μm	98 (156)
Previous PDT, n (%)	16 (47)

Abbreviations: CSC, central serous chorioretinopathy; CNV, choroid neovascularisation; BCVA, best-corrected visual acuity; CRT, central retinal thickness; SRF, subretinal fluid; IRF, intraretinal fluid; SFCT, subfoveal choroidal thickness; PDT, photodynamic therapy; SD, standard deviation.

Overall, after intravitreal aflibercept in 65% (22 out of 34 eyes) showed complete resolution of fluid at 1 year follow-up. Complete resorption of fluid was noted in 68% (23 eyes out of 34) at 2 years and 73% (25 eyes out of 34) at 3 years.

**Figure 1** Change in mean decimal BCVA from baseline to year 3.

Abbreviation: BCVA, best-corrected visual acuity.

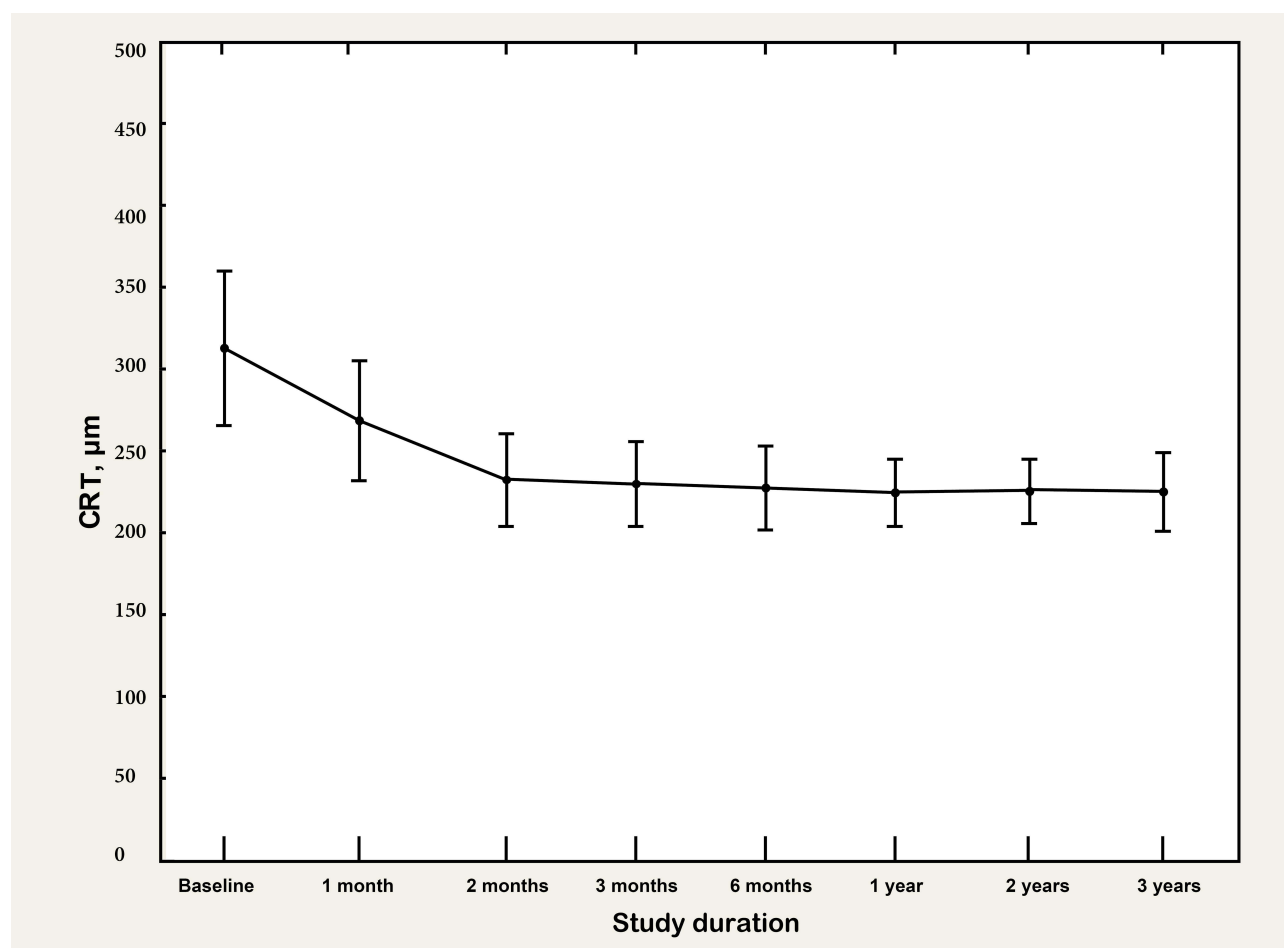


Figure 2 Change in mean CRT from baseline to year 3.

Abbreviation: CRT, central retinal thickness.

Treatment and Treatment Interval

During all follow-up period, the total mean number of aflibercept injections was 18.0 (SD; 5.6). Mean number of injections per year was 7.6 (SD; 1.9) at year 1, 5.6 (SD; 2.2) at year 2 and 4.9 (SD; 3.1) at year 3 (shown in Figure 4).

Mean treatment-free interval was 10.0 (SD; 4.0) weeks after 1 year. After 2 years, mean interval aflibercept injection increased to 12.7 (SD; 6.0) weeks. After 3 years, mean treatment interval was extended up to 15.3 (SD; 7.6) weeks.

Outcomes of Intravitreal Aflibercept in PDT-Treated and Naïve Patients

We compared baseline patient characteristics and outcomes after intravitreal aflibercept injections in PDT-treated and naïve patients (Table 2). The PDT-treated group included 16 patients (16 eyes) who had received PDT before inclusion in the study, and the naïve group – 18 patients (18 eyes). There was no significant difference in age, sex, baseline decimal BCVA, SFCT, and the presence of IRF or/and SRF, subretinal hyperreflective deposits between the two groups. However, patients in the treated group had initial thicker mean CRT.

At baseline, mean decimal BCVA was 0.39 (SD; 0.36) in the PDT-treated group and 0.49 (SD; 0.34) in the naïve group. At baseline, mean decimal BCVA in the treated group compared to the untreated group was not statistically different ($p = 0.4$). At year 3, mean decimal BCVA was 0.48 (SD; 0.29) in the PDT-treated group and 0.71 (SD; 0.31) in the naïve group. At year 3, mean decimal BCVA in the PDT-treated group compared to the naïve group was statistically different ($p = 0.04$). There was a statistically significant difference between baseline and year 3 in mean decimal BCVA in both groups ($p < 0.05$).

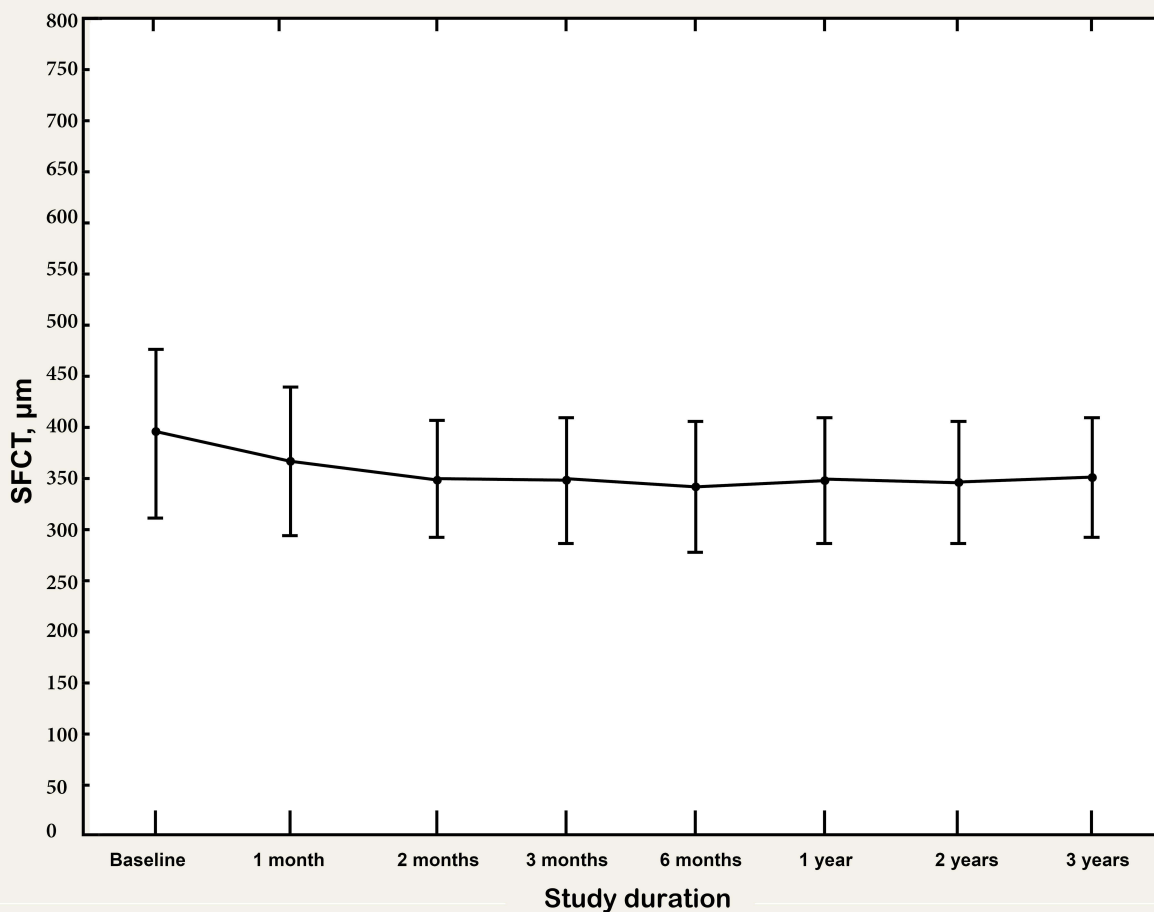


Figure 3 Change in mean SFCT from baseline to year 3.
Abbreviation: SFCT, subfoveal choroidal thickness.

Baseline mean CRT was 347 (SD; 95) μm in the PDT-treated group and 283 (SD; 78) μm in the naive group. At baseline, mean CRT in the PDT-treated group compared to the naive group was statistically different ($p = 0.04$). At year 3, mean CRT in the PDT-treated group was 234 (SD; 63) μm and 214 (SD; 31) μm in the naive group. At year 3, there was a significant decrease in mean CRT to compare with baseline in both groups ($p < 0.001$). At year 3, difference in mean CRT between the PDT-treated group and the naive group was not significant ($p = 0.2$).

At baseline, mean SFCT was 376 (SD; 143) μm in the PDT-treated group and 420 (SD; 174) μm in the naive group. At baseline, mean SFCT in the PDT-treated group compared to the naive group was not statistically different ($p = 0.4$). At year 3, mean SFCT in the PDT-treated group was 340 (SD; 131) μm and 369 (SD; 134) μm in the naive group. At year 3, there was a significant decrease in mean SFCT to compare with baseline in both groups ($p < 0.01$). At year 3, difference in mean SFCT between the PDT-treated group and the naive group was not significant ($p = 0.5$).

At year 3, complete resolution of fluid in the PDT-treated group was 56% (9 eyes out of 16) and in the naive group – 89% (16 eyes out of 18). There was a significant difference in complete resolution of fluid between the PDT-treated group and the naive group ($p = 0.01$).

During all follow-up period, mean number of aflibercept injections was 20.1 (SD; 5.3) in the PDT-treated group and 15.9 (SD; 5.8) in the naive group. Treated patients received significantly more injections than untreated patients ($p = 0.03$).

After 3 years, the mean treatment interval was 11.2 (SD; 6.0) in the PDT-treated group and 19.3 (SD; 7.0) in the naive group. Mean treatment-free interval was significantly longer in the naive patients than in the PDT-treated patients ($p = 0.001$).

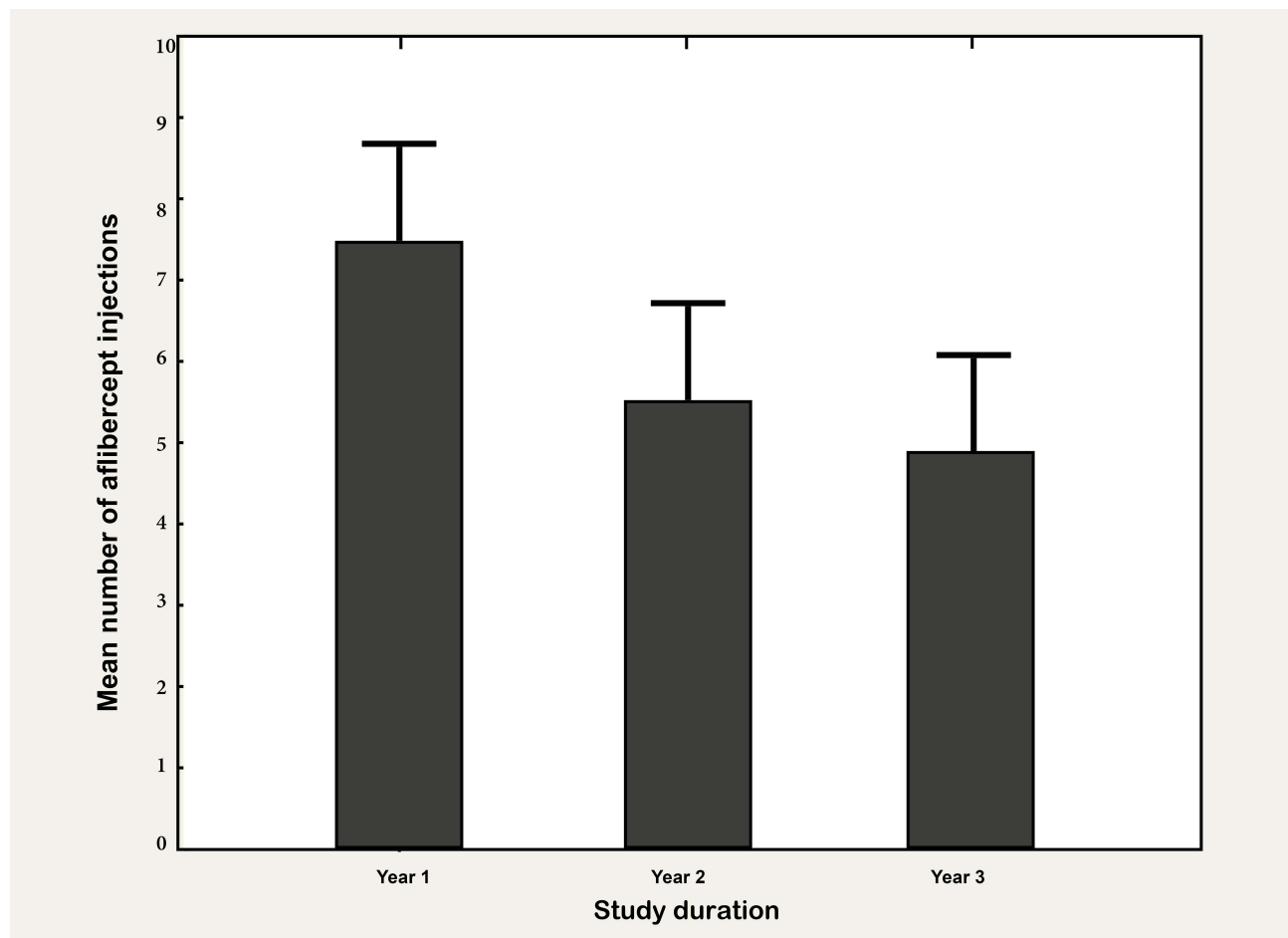


Figure 4 Columns graph showing mean number of aflibercept injections in patients with type I CNV secondary to chronic CSC at different time points.
Abbreviations: CNV, choroid neovascularisation; CSC, central serous chorioretinopathy.

Adverse Events

There were no systemic serious adverse events during the observation period. There were no complications including endophthalmitis, retinal detachment, or atrophy to the RPE and/or choroid. One eye developed progression of cataract. At year 2, in one case was performed phacoemulsification with implantation of an intraocular lens.

Table 2 Baseline Characteristics and 3-year Outcomes in Treated and Untreated Patients on Aflibercept Received

Characteristics	PDT-Treated Patients n=16	Naive patients n=18	p
Age (SD)	57 (14)	53 (18)	0.5
Male, n (%)	8 (50)	7 (39)	0.6
SRF, n (%)	15 (94)	16 (89)	0.6
IRF, n (%)	3 (19)	4 (22)	0.9
SRF&IRF, n (%)	2 (12)	2 (11)	0.9
Subretinal hyperreflective deposits, n (%)	5 (31)	1 (6)	0.07

(Continued)

Table 2 (Continued).

Characteristics	PDT-Treated Patients n=16	Naive patients n=18	p
Baseline mean decimal BCVA (SD)	0.39 (0.36)	0.49 (0.34)	0.4
Final mean decimal BCVA (SD)	0.48 (0.29)	0.71 (0.31)	0.04
Baseline mean CRT (SD), μm	347 (95)	283 (78)	0.03
Final mean CRT (SD), μm	234 (63)	214 (31)	0.2
Baseline mean SFCT (SD), μm	376 (143)	420 (174)	0.4
Final mean SFCT (SD), μm	340 (131)	369 (134)	0.5
Complete resolution of fluid, n (%)	56 (9)	89 (16)	0.01
Mean number of aflibercept injections (SD)	20.1 (5.3)	15.9 (5.8)	0.03
Mean treatment-free interval (SD)	11.2 (6.0)	19.3 (7.0)	0.001

Abbreviations: SRF, subretinal fluid; IRF, intraretinal fluid; BCVA, best-corrected visual acuity; CRT, central retinal thickness; SFCT, subfoveal choroidal thickness; SD, standard deviation.

Discussion

Currently, there is no single view on the standard treatment of CNV as a consequence of chronic CSC. Anti-VEGF therapy and PDT, or a combination of both, are commonly used to treat these patients.^{19,20} More authors are increasingly opting for intravitreal antiangiogenic therapy as monotherapy for CNV in CSC patients, reporting the effectiveness of this approach.^{15,21,22} The global shortage of verteporfin has also influenced this trend, as it has further restricted the use of PDT in patients with CSC since July 2021.²³

There are two primary strategies for personalised intravitreal anti-VEGF therapy. Treatment can be performed as needed when signs of recurring fluid leakage appear. Alternatively, a “treat and extend” strategy can be used, extending the intervals between treatments as long as the macula remains dry.²⁴ Clinicians favour TAE as it allows longer intervals between treatments and decreases the total number of clinic visits.²⁵ The TAE regimen typically consists of ≥ 3 monthly loading doses, followed by treatment intervals that are gradually extended by two to four weeks, up to 12 to 16 weeks. If disease activity relapses, the next injection is given and the inter-injection interval is reduced by 2–4 weeks until the fluid resolves, after which the intervals between procedures can be extended again. The results of the current study demonstrated that intravitreal aflibercept for type 1 CNV secondary chronic CSC using a TAE regimen can lead to sustained improvements in BCVA and anatomical outcomes.

Different numbers of loading injections are discussed for the treatment of chronic neovascular CSC. We used 3 loading injections and our study extended the mean interval between injections to 15.3 (SD; 7.6) weeks at year 3. During the follow-up period, the total mean number of aflibercept injections was 18.0 (SD; 5.6). Mean decimal BCVA increased significantly from 0.44 (SD; 0.35) at baseline to 0.59 (SD; 0.31, $p < 0.001$) at year 3; CRT decreased from 315 (SD; 90) μm to 224 (SD; 49, $p < 0.001$) μm ; SFCT decreased from 398 (SD; 156) μm to 355 (SD; 129, $p < 0.001$) μm . Complete resorption of fluid was noted in 73% (25 eyes out of 34) at 3 years. Schworm et al for neovascular CSC used 6 consecutive monthly (34 ± 3 days intervals) loading injections of ranibizumab or aflibercept. The mean CRT decreased from 346 ± 61 to 257 ± 57 μm after the sixth injection, while the mean logMAR visual acuity improved from 0.65 ± 0.35 to 0.49 ± 0.29 . Extended loading of 6 injections, as opposed to 3 injections, resulted in an additional mean decrease in CRT (280 ± 46 μm versus 257 ± 57 μm).¹⁵

This research showed that aflibercept treatment was more effective in BCVA improvement in PDT-untreated patients at 3-year follow-up. Reduction in CRT and SFCT was similar in the PDT-treated and naive groups at 3 years. During follow-up, the mean number of aflibercept injections was 20.1 (SD; 5.3) in the PDT-treated group and 15.9 (SD; 5.8) in the naive group. PDT-treated patients received significantly more injections than naive patients, which may be due to the effect of PDT on choriocapillaries, subsequent choriocapillaries insufficiency, and secondary hypoxia, promoting the

growth of CNV.²⁶ In our study, the mean interval between injections was extended to 11.2 weeks (SD; 6.0) in the PDT-treated group and 19.3 weeks (SD; 7.0) in the naive group after 3 years.

Hu et al reported the results of a retrospective study that assessed the clinical outcomes of half-dose PDT for CSC with type 1 CNV detected by routine OCT-A screening. In this study, nineteen eyes (55.9%) underwent a single PDT session without recurrence over a 3-year follow-up period (predominantly eyes with a point source of leakage). Fifteen eyes (44.1%) received additional anti-VEGF, PDT, or both due to persistent or recurrent SRF (predominantly eyes with diffuse oozing on the FA). Patients were monitored monthly until the SRF was fully reabsorbed, and subsequently quarterly. The mean sessions of half-dose PDT was 1.50 ± 0.75 and the mean number of anti-VEGF injections was 1.38 ± 3.34 . BCVA improved from 0.38 ± 0.33 to 0.20 ± 0.22 ($p < 0.001$). The mean central macular thickness was significantly reduced, along with a decrease in choroidal thickness. The authors noted a significant increase in CNV size at the end of the follow-up period, despite the resolution of SRF in most cases.²⁷ It can be speculated that the therapeutic effect of VEGF inhibitors or PDT in pachychoroidal disease may be due to a temporary decrease in choroidal hyperpermeability.

CNV is not the only factor responsible for SRF accumulation. The occurrence of SRF in patients with CNV due to CSC may be caused by the underlying pachychoroid.¹⁵ CNV can be inactive even with the subretinal fluid present, while the absence of SRF does not definitively indicate that CNV progression has not occurred.¹⁴ Thus, confirmation of SRF absence is insufficient for reliable control of chronic CSC with CNV. Treatment of chronic neovascular CSC should be continued under FA and OCT-A fundus control despite subretinal fluid resorption. In such cases, the TAE regimen during intravitreal anti-VEGF therapy is justified, as it allows for a significant extension of the intervals between treatments, thereby reducing the burden on both the doctor and the patient.

This study has several limitations. Firstly, the sample size is relatively small ($n=34$) in this study makes it difficult to fully evaluate the results after treatment. Second, single-center design and lack of external validation. Third, our study does not allow us to compare the efficacy of different angiogenesis inhibitors and different anti-VEGF therapy strategies in the treatment of chronic neovascular CSC, which will be the subject of subsequent studies. Additionally, indocyanine-green angiography was not performed to identify the choroidal vascular changes before and after treatment.

Despite these limitations, the results demonstrated that the intravitreal aflibercept TAE strategy significantly improved BCVA and resulted in complete resorption of SRF in 73% of patients with chronic neovascular CSC at 3-year follow-up. We believe that long-term management of chronic CSC with CNV necessitates fundus monitoring using FA and OCT-A, even after subretinal fluid absorption. This research indicated for the first time that aflibercept treatment was more effective in improving BCVA in naive patients with chronic neovascular CSC and required significantly fewer injections at the three-year follow-up compared to PDT-treated patients.

Conclusion

To summarize, intravitreal aflibercept using a TAE regimen improved visual and anatomical outcomes of patients with type 1 CNV secondary to chronic CSC in 3-year follow-up. Previously naive patients showed a better visual outcome and higher incidence of complete resorption of fluid with lower number of aflibercept injections and longer treatment-free intervals. However, further study is necessary to verify our findings with a larger sample size.

Abbreviations

CSC, central serous chorioretinopathy; RPE, retinal pigment epithelium; CNV, choroidal neovascularization; BCVA, best corrected visual acuity; OCT-A, optical coherence tomography angiography; anti-VEGF, anti-vascular endothelial growth factor; PRN, pro re nata; TAE, treat-and-extend; SD-OCT, spectral domain optical coherence tomography; FA, fluorescein angiography; IRF, intraretinal fluid; SRF, subretinal fluid; SFCT, subfoveal choroidal thickness; CRT, central retinal thickness; SD, standard deviation; PDT, photodynamic therapy.

Author Contribution

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically

reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

Andrii Korol is a consultant and speaker for Novartis, Thea, Bayer and Roche. The authors have no other potential conflicts of interest in this work.

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