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TEN-YEAR TREATMENT OUTCOMES OF NEOVASCULAR AGE-RELATED MACULAR DEGENERATION FROM TWO REGIONS

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ABSTRACT

The authors are commenting on the study entitled "Ten-year treatment outcomes of neovascular age-related macular degeneration from two regions" published by Gillies et al. in Am J Ophthalmology. Doi:http/dx.doi.org/10.1016/j.ajo.2019.10.007; Published online: October 10, 2019. The authors concluded that regardless of the anti-vascular endothelial growth factor agents used (e.g., ranibizumab/becacizumab/ aflibercept), and regardless of the treatment dosing paradigms chosen (e.g., treat and extend/pro re nata/fixed interval/escalated algorithm), the efficacy of the treatment depends primarily on the precociousness of the therapy after the onset of neovascular age-related macular degeneration.

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INTRODUCTION

We read with great interest the study by Gillies *et al.* (2019) which reported and compared 10-year treatment outcomes of vascular endothelial growth factor (VEGF) inhibitors for neovascular age-related macular degeneration (nAMD) from Australia and New Zealand (ANZ) and Switzerland. The mean visual acuity (VA) in 132 eyes (28%) from ANZ that completed 10 years of treatment dropped by 0.9 letters from baseline with 42% achieving ≥ 20/40, while the 37 eyes (12%) from Switzerland lost 14.9 letters with 35% achieving ≥ 20/40. Visual outcomes were better in eyes from ANZ, likely because they received more injections of VEGF inhibitors using a treat and extend regimen. We would like to address several issues that have arisen from this study, which can be specifically summarized below.

The study was retrospectively conducted with fairly high proportions of patients lost until they reached 10-year follow-up period (72.2% in the ANZ cohort and 88.5% in the group from Switzerland), which influenced the aggregate data and might have caused an inadvertent bias. In addition 3 types of anti-VEGF drugs were administered (ranibizumab [Lucentis; Genentech, Inc, South San Francisco, California, USA]/ bevacizumab [Avastin; Genentech, Inc,]/aflibercept [Eylea; Regeneron Pharmaceuticals Inc, Tarrytown, New York, USA]) and treatment decisions, including choice of treatment and visit schedules, were at the discretion of the treating physician in consulting with the patients. Injections of eyes at 80% of visits for the ANZ cohort reflected a treat and extend regimen which was widely used in ANZ, while injections at 60% of visits, which were found in Switzerland, indicated a pro re nata regimen. Of note, the Swiss cohort received more injections from year 8 onwards consistent with a shift from pro re nata regimen to treat and extend. Taken together, these findings make interpretation of the results challenging.

We disagree with the authors'assertion that their study provided the first 10-year evidence on the efficacy of VEGF injections for nAMD in real world practice and that there were currently no published 10-year data on the treatment of nAMD with VEGF inhibitors with which to compare their results. Specifically, Garweg *et al.* (2018) assessed the 10-year outcomes of anti-VEGF treatment in patients with newly diagnosed wet AMD. Best-corrected visual acuity stabilized at –7.3 to -11.9 letters after 3-10 years of follow-up with a mean of 2.8 injections and 5.1 visits per year. Thirthy-seven percent of eyes maintained driving vision (≥ 0.5) for up to 10 years.

The following pertinent data are missing in the study: the mean time duration of symptoms of nAMD from diagnosis to the initiation of treatment; the criteria used for the diagnosis of macular atrophy (MA) and subretinal fibrosis which may irreversibly damage vision; the angiographic types of choroidal neovascularization (CNV) (e.g., predominantly/ minimally classic, occult, and mixed CNVs, retinal angiomatous proliferation, and polypoidal choroidal vasculopathy); the forms of neovascular lesions that may arise secondary to nAMD (e.g., type 1 located under the retinal pigment epithelium [RPE], the type 2 located in the subretinal space, or the type 3, intraretinal); the existence or not of the disorganization of retinal inner layers and its severity (e,g.,mild, severe, and severe with damaged ellipsoid zone [EZ]); the optical coherence tomography (OCT) patterns of macular edema (e.g., subretinal fluid, intraretinal cystic changes or mixed type) as well as the location of the intraretinal cystoid fluid if it existed in some cases (e..g., inner/outer nuclear layers or ganglion cell layer); the qualitative status of the photoreceptor cell layer (the outer nuclear layer, the external limiting membrane band, the EZ, the interdigitation zone) as well as the retinal pigment epithelial band – Bruch's membrane complex; the OCT patterns of vitreoretinal interface abnormalities (epiretinal membranes, retinomacular adhesion/traction, full-thickness macular hole, lamellar macular hole, and combined epiretinal membranes and vitreomacular traction); the quantification of the subretinal hyperreflective material and its composition (e.g., fibrosis, blood, fibrin, exudation, and CNV); the prevalence, number, size, and shape of the tubular structures affecting the outer retina and RPE termed outer retinal tubulation; and the central retinal thickness.

There was a discrepancy regarding the final 10-year outcomes between the patients of the two different regions, ANZ and Switzerland. Specifically, patients in the ANZ cohort experienced a resonable loss in VA of 0.9 letters with a significantly higher proportion of MA without fibrosis (41% vs 6%), while patients in the group from Switzerland had a loss in VA of 14.9 letters with a significantly higher percent of subretinal fibrosis (78% vs 28%),which was usually accompanied by MA. As reasons for this discrepancy the authors of this study suggested the possible role of the treat and extend regimen which was used mainly in patients of the ANZ cohort, who received more injections than those from Switzerland over 10 years (a median of 53 vs 42) from fewer visits with better disease control (proportion of visits with active disease: 38% vs 69%). Conceivably, the number of such predictive factors would have been higher, if all the missing baseline potential prognosticators referred to above by us had been included in the final analysis, in addition to the baseline characteristics already evaluated in this study.

Altogether, regardless of the anti-VEGF agents used (e.g., ranibizumab/bevacizumab/aflibercept), and regardless of the treatment dosing paradigms chosen (e.g., treat and extend/pro re nata/fixed interval/escalated algorithm), the efficacy of the treatment depends primarily on the precociousness of the therapy after the onset of nAMD, which can be considered a key driver predicting future outcomes (Călugăru *et al*.2018).

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REFERENCES

Călugăru, D., Călugăru, M. 2018. The fate of eyes with wet AND beyond four years of anti-VEGF therapy. *Graefes Arch Clin Exp Ophthalmology.* 256(8):1551-1552.

Garweg, J.G., Zirpel, J.J., Gerhardt, C., Pfister, I.B. 2019. The fate of eyes with wet AND beyond four years of anti-VEGF therapy. *Graefes Arch Clin Exp Ophthalmol.* 256(4): 823-831.

Gillies, M., Arnold, J., Bhandari, S., *et al*. 2019. Ten-year treatment outcomes of neovascular age-related macular degeneration from two regions. *Am J Ophthalmol.* Doi: http/dx.doi.org/10.1016/j.ajo.2019.10.007. Published online: October 10, 2019.

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