VISION ACADEMY
people | research | education

VISION ACADEMY VIEWPOINT

The Vision Academy is a partnership between Bayer and ophthalmic specialists, established with the aim of addressing key clinical challenges in the field of retinal diseases: www.visionacademy.org.

Treatment Regimens for Optimizing Outcomes in Patients With Neovascular Age-Related Macular Degeneration

Background

Treatment for neovascular age-related macular degeneration (nAMD) has advanced over the past decade, with key trials demonstrating the efficacy of vascular endothelial growth factor (VEGF) inhibitor therapy in this indication.[1-3] However, outcomes in real-world clinical settings are often inferior to those reported in clinical trials,[4,5] likely due to undertreatment, poor adherence, and inappropriate treatment decisions.[6-8] While guidance has been previously proposed, the evolving treatment landscape makes it necessary to develop current, pragmatic, clinically applicable guidelines that can close the gap between clinical trial and real-world outcomes.

Having identified the need for updated recommendations on the use of VEGF inhibitor therapy for nAMD, a review of the literature and available evidence[9] was conducted to:

- Summarize the key evidence, both from clinical trials and real-world studies, and review previous recommendations
- Provide updated recommendations for a treatment framework that is usable in current clinical practice

Endorsed by the Vision Academy
in October 2024

Viewpoint

The current Viewpoint provides an update to the 'Fundamental Principles of an Anti-VEGF Treatment Regimen' Viewpoint endorsed by the Vision Academy in 2016. Upon evaluating the recent evidence to inform treatment strategies for nAMD, an updated set of recommendations and an evidence-based treatment algorithm have been developed. The recommendations are divided according to phase of treatment, allowing physicians to follow the guidance and supporting evidence chronologically over the course of a patient's treatment journey. These recommendations were developed by a Vision Academy workstream, and subsequently reviewed, commented upon, and endorsed by a majority of the Vision Academy membership before publication.[9]

Recommendation 1: Intensive treatment should start early to maximize visual outcomes

Treatment should commence as soon as disease activity is detected; however, this can be challenging as patients may not be aware that their symptoms herald a more serious condition. Early intensive treatment should be implemented to achieve disease quiescence rapidly and maximize visual outcomes in the long term.

Recommendation 2: A treat-and-extend (T&E) regimen should start after lesion quiescence is achieved

Current evidence suggests that T&E is the most balanced treatment strategy in terms of good visual outcomes versus treatment burden.[5,10,11] T&E regimens allow for forward planning of visits, but at the expense of potential overtreatment. Globally, many ophthalmologists have turned to T&E regimens to mitigate a high treatment burden.[12]

Recommendation 3: Treatment intervals can be tailored according to disease severity

When starting a T&E regimen after achieving disease quiescence, treatment intervals can be tailored according to disease severity. Disease severity can be contingent on fluid type and the nature of the disease, and its assessment may incorporate newer computational imaging techniques in the future. Despite good outcomes in patients treated with extended intervals and tolerance of some disease activity, more intensive treatment may be considered for patients treated for nAMD in their only-seeing eye.

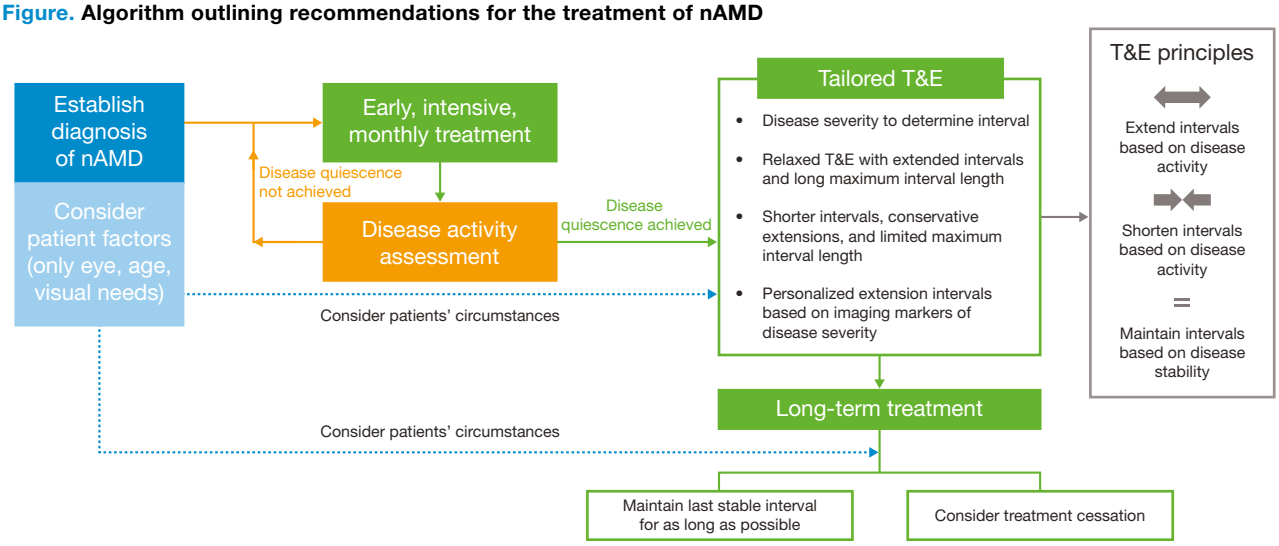
The Vision Academy is funded and facilitated by Bayer. This document was prepared on behalf of the Vision Academy by Kelvin Yi Chong Teo, Bora Eldem, Antonia Joussen, Adrian Koh, Jean-François Korobelnik, Xiaoxin Li, Anat Loewenstein, Monica Lövestam-Adrian, Rafael Navarro, Annabelle A. Okada, Ian Pearce, Francisco Rodríguez, David Wong, Lihteh Wu, Dinah Zur, Javier Zarranz-Ventura, Paul Mitchell, Varun Chaudhary, and Paolo Lanzetta.

October 2024 | MA-PFM-OPHT-ALL-1331-1

Recommendation 4: Long-term treatment should be continued, but suspension can be considered

Treatment should be continued for as long as it remains beneficial and tolerable to the patient. Long intervals between treatments can be considered in quiescent disease states, to allow for background control of the disease. In the presence of sustained good visual outcomes, treatment suspension may be attempted in consultation with the patient, but close follow-up with optical coherence tomography (OCT) monitoring should be performed to ensure timely treatment if disease reactivation occurs. Treatment suspension should also be considered in patients where further treatment is futile, and where no further gains in vision are possible.[13] The status of the fellow eye is also important when considering treatment suspension; caution should be exercised when considering suspension in cases where the better-seeing eye is undergoing treatment and the other eye has progressed to end-stage age-related macular degeneration.

Figure. Algorithm outlining recommendations for the treatment of nAMD



Further considerations

Based on the collective clinical experience of Vision Academy members, the recommendations presented here mostly confirm current practices but also offer new insights that may impact practice patterns. The departure from considering disease activity as binary, and accepting the concept of disease severity, can result in greater personalization of nAMD treatment intervals. Disease severity can be measured as various aspects, including the quantification of fluid, fluid in different retina compartments, and even the location of fluid. With greater understanding of the disease, we can determine aspects that may or may not affect functional outcomes, and with new treatments on the horizon, the treatment landscape for nAMD will continue to evolve. The continued use of both clinical trial results and real-world evidence will become even more important to ensure that the most effective treatments are chosen in clinical practice.

References

1. Rosenfeld PJ, Brown DM, Heier JS *et al.* Ranibizumab for neovascular age-related macular degeneration. *N Engl J Med* 2006; 355 (14): 1419–1431.
2. Kodjikian L, Souied EH, Mimoun G *et al.* Ranibizumab versus bevacizumab for neovascular age-related macular degeneration: results from the GEFAL noninferiority randomized trial. *Ophthalmology* 2013; 120 (11): 2300–2309.
3. Dugel PU, Koh A, Ogura Y *et al.* HAWK and HARRIER: phase 3, multicenter, randomized, double-masked trials of brolucizumab for neovascular age-related macular degeneration. *Ophthalmology* 2020; 127 (1): 72–84.
4. Kang HM and Koh HJ. Long-term visual outcome and prognostic factors after intravitreal ranibizumab injections for polypoidal choroidal vasculopathy. *Am J Ophthalmol* 2013; 156 (4): 652–660.e1.
5. Veritti D, Sarao V, Soppelsa V *et al.* Managing neovascular age-related macular degeneration in clinical practice: systematic review, meta-analysis, and meta-regression. *J Clin Med* 2022; 11 (2): 325.
6. Hykin P, Prevost AT, Vasconcelos JC *et al.* Clinical effectiveness of intravitreal therapy with ranibizumab vs aflibercept vs bevacizumab for macular edema secondary to central retinal vein occlusion: a randomized clinical trial. *JAMA Ophthalmol* 2019; 137 (11): 1256–1264.
7. Holz FG, Bandello F, Gillies M *et al.* Safety of ranibizumab in routine clinical practice: 1-year retrospective pooled analysis of four European neovascular AMD registries within the LUMINOUS programme. *Br J Ophthalmol* 2013; 97 (9): 1161–1167.
8. Rao P, Lum F, Wood K *et al.* Real-world vision in age-related macular degeneration patients treated with single anti-VEGF drug type for 1 year in the IRIS registry. *Ophthalmology* 2018; 125 (4): 522–528.
9. Teo KYC, Eldem B, Joussen A *et al.* Treatment regimens for optimising outcomes in patients with neovascular age-related macular degeneration. *Eye (Lond)* 2024; epub ahead of print.
10. Abdin AD, Suffo S, Asi F *et al.* Intravitreal ranibizumab versus aflibercept following treat and extend protocol for neovascular age-related macular degeneration. *Graefes Arch Clin Exp Ophthalmol* 2019; 257 (8): 1671–1677.
11. Wykoff CC, Ou WC, Croft DE *et al.* Neovascular age-related macular degeneration management in the third year: final results from the TREX-AMD randomised trial. *Br J Ophthalmol* 2018; 102 (4): 460–464.
12. Singh RP, Stone TW and Hahn P, eds. 2019 Global Trends in Retina Survey. Available at: https://www.asrs.org/content/documents/2019-global-trends-survey-for-website.pdf. Accessed August 2024.
13. Wong DT, Lambrou GN, Loewenstein A *et al.* Suspending treatment of neovascular age-related macular degeneration in cases of futility. *Retina* 2020; 40 (6): 1010–1020.

Vision Academy Viewpoints are intended to raise awareness of a clinical challenge within ophthalmology and provide an expert opinion to engage in further discussion.
They can be downloaded from https://www.visionacademy.org/resource-zone/resources/all
The Vision Academy is a group of over 100 international experts who, through their collective expertise, provide consensus guidance for managing clinically challenging situations, especially in areas of controversy or with insufficient conclusive evidence.
The Vision Academy is funded and facilitated by Bayer. This document was prepared on behalf of the Vision Academy by Kelvin Yi Chong Teo, Bora Eldem, Antonia Joussen, Adrian Koh, Jean-François Korobelnik, Xiaoxin Li, Anat Loewenstein, Monica Lövestam-Adrian, Rafael Navarro, Annabelle A. Okada, Ian Pearce, Francisco Rodríguez, David Wong, Lihteh Wu, Dinah Zur, Javier Zarranz-Ventura, Paul Mitchell, Varun Chaudhary, and Paolo Lanzetta.
The opinions expressed, and guidance laid out, by the Vision Academy are developed independently by the members and do not necessarily reflect the opinions of Bayer.
Intended for healthcare professionals only. Always refer to local treatment guidelines and relevant prescribing information.
October 2024 | MA-PFM-OPHT-ALL-1331-1