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SAVRS Clinical Practice Guideline for the Management of Myopic Choroidal Neovascularisation (Myopic-CNV)

Last Reviewed February 2024 (Dr KST Suttle)

Main Changes :

Addition of reference for review article published in November 2023.
Re-formatting of article in accordance with new OSSA guidelines for society document publications.

Key Points :

1. The current international standard for the management of myopic-CNV is intra-vitreal anti-VEGF monotherapy as first-line treatment.
2. Avastin®, Eylea® and Lucentis® are all recommended and appropriate for use in treating myopic-CNV.
3. A further study using another anti-VEGF (and Ang2-inhibitor) agents, Faricumab (Vabysmo®) is currently underway and may be an alternative option for treatment of myopic-CNV in the future.
4. The current standard of care for myopic CNV is a single anti-VEGF intra-vitreal injection followed by close clinical and OCT scanning monitoring and further anti-VEGF injections on a prn basis.

The Academic Advisory Committee (AAC) of the South African Vitreoretinal Society (SAVRS) would like to present our guidelines for the management of myopic choroidal neovascularisation (Myopic CNV). The committee would like to record the following points:

1. Myopia is a common refractive error though the rates of myopia in South Africa are not well documented. One study done in Kwazulu Natal, published in 2016, showed a prevalence of 11,4% in a population based survey of adult patients (1). The rate of myopia has been shown in numerous studies to be on the increase internationally.

2. High myopia is considered to be a refractive error of -6.00DS or more, and it is in this group particularly, but not exclusively, that myopic choroidal neovascularisation occurs (2).
3. Myopic macular degeneration is also known in the literature as pathological myopia, myopic maculopathy and degenerative myopia. These terms are used interchangeably. This condition affects approximately 3% of the global population (2).
4. Such myopic CNV can occur at any age, but it is a more common (than neovascular-Age-related Macular Degeneration [nv-AMD]) cause of choroidal neovascularisation in the younger age group and thus a potential cause of severe visual loss in the working adult population and thus may cause economically active individuals to become less able to work with significant economic impact (2).
5. Myopic CNV falls into the category of macular degeneration, and as such falls under ICD-10 code H35.3, a PMB code.
6. The current international standard for the management of myopic CNV is intra-vitreal anti-VEGF monotherapy as first-line treatment (3).
7. The 3 agents used internationally at present for the treatment of this condition are Bevacizumab (Avastin®), which is used off-label, having not been registered for intra-ocular use, Ranibizumab (Lucentis®), and Aflibercept (Eylea®). Lucentis® and Eylea® are both registered in South Africa for intra-vitreal injection and are internationally approved for the treatment of Myopic CNV (3).
8. The Phase III RADIANCE trial demonstrated that Ranibizumab is vastly superior to verteporphorin-PDT therapy in efficacy in terms of letters of vision gained and sustained, as well as demonstrating safety of this therapy (4). The Phase III MYRROR trial has likewise demonstrated the efficacy and safety of Aflibercept for the treatment of myopic choroidal neovascularisation (5,6).
9. Avastin® is known to also be effective for Myopic CNV, but is used in an off-label capacity, with the inherent medicolegal risks of this situation for the doctor and with the added risks of the process of compounding of this drug which is done to make it affordable. Most ophthalmology specialists are using Avastin® based on funding reasons rather than on preference for this drug. The SAVRS AAC wishes to state once again that this is not an ideal situation and that we believe that funders should bear the medicolegal responsibility for any adverse outcomes which occur due to the need for compounding of this drug, or from systemic side effects which could potentially have been avoided through using one of the other anti-VEGF agents, but not used due to funding not being available for the preferred drug.
10. A small sub-set of patients who may not respond adequately to the anti-VEGF therapy used will require switching to another, second line anti-VEGF agent, or to be given PDT (Photodynamic therapy) or possibly intra-vitreal steroids (Ozurdex® or Triamcinolone) since it is believed that there is an inflammatory component to the condition (4).
11. The accurate diagnosis and baseline documentation of Myopic macular degeneration and Myopic CNV commonly requires clinical examination, refraction, dilated retinal examination, retinal photography, Fundus Autofluorescence (FAF), OCT retinal scanning, Fluorescein angiography (FFA) and/or OCT angiography (OCTA) and axial length and keratometry readings. ICG angiography may be needed in cases where blood in the sub-retinal or sub-rpe space obscures the view of the choroidal neovascularisation or where occult neovascularisation results in poor visualisation of the CNV by FFA and OCTA.

12. It is important to distinguish this condition from a number of other conditions in the differential diagnosis, including nv-AMD, Inflammatory maculopathies such as punctate inner choroidopathy (PIC), Presumed Ocular Histoplasmosis (POHS), choroidal neovascularisation secondary to central serous choroidopathy, sub-retinal haemorrhage due to lacquer cracks, dome-shaped maculopathy with secondary neovascularisation, staphyloma related neovascularisation, neovascularisation secondary to other causes of chorioretinal scars in the macular area, including previous macular laser therapy, and previous trauma. Many of these conditions will also require anti-VEGF therapy in their treatment, but the need for such therapy and necessary frequency and duration of therapy and of follow-up visits may differ (7).
13. The standard of care is a single intra-vitreal anti-VEGF injection, then review with repeat clinical and OCT scanning assessment at 3-5 weeks later, and then further anti-VEGF injections on a prn basis depending on the initial response and the follow-up findings. Monthly monitoring is recommended for the first year, and then the monitoring gaps can be progressively increased depending on the behaviour of the CNV and the visual acuity and the clinical picture thereafter (8).

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The named takes responsibility for the integrity of the work as a whole, and has given his approval for this version to be published.

Authors' Contributions :

Concept and design: KST Suttle; data analysis/interpretation; drafting of manuscript; critical revision of manuscript. All committee members read and approved the final manuscript.

Disclosures :

Dr KST Suttle has nothing to disclose.

Compliance with Ethics Guidelines :

This document is based on previously conducted studies and does not contain any studies with human participants or animals performed by any of the authors.

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