ANTI-VEGF TREATMENT MODALITIES - CURRENT AND FUTURE PERSPECTIVES

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Abstract

Anti-VEGF treatment refers to the group of drugs that are used in the treatment of retinal macular diseases, such as: diabetic retinopathy (DR) and diabetic macular edema (DME), wet form of age-related macular degeneration (wet AMD), retinal vein occlusions (RVOs), myopic macular degeneration and other retinal neovascular diseases or conditions.

Mostly, anti-VEGF today is the first-line treatment for DME, wet AMD and RVOs.

The treatment of those diseases over the years has evolved from retinal laser photocoagulation as a treatment of choice, to the different anti-VEGF drugs applied in the vitreous cavity of the patients. The main goal of the treatment is the inhibition of Vascular Endothelial Growth Factor (VEGF) by their binding affinity; hence, VEGF is the key mediator of inflammation and angiogenesis, leading to vision threatening complications.

The diagnosis of the diseases, timing of the treatment and its efficacy (anatomical and morphological features and parameters) is evaluated through optical coherence tomography (OCT) and optical coherence tomography angiography (OCT-A) as standard diagnostic methods for retinal and macular assessment.

At present, on the market are available a number of drugs, starting with Bevacizumab (Avastin), used "off label", Ranibizumab (Lucentis), Aflibercept (Eylea) and newer generations represented by Faricimab (Vabysmo) and Brolucizumab (Beovu).

Nevertheless which type of drug is applied, the chronic therapy with intravitreal injections leads to treatment burden over the patients, clinicians and hospitals. Therefore, we are witnessing continued pursuit for other treatment modalities that would enable maintenance of good anatomical and functional outcomes with less injections and longer treatment intervals. Achieving such criteria will substantially improve the quality of life of these individuals. Those novel treatment options will be presented in the lecture.

Keywords: *anti-VEGF treatment, macular diseases, VEGF, optical coherence tomography (OCT)*