



EFFECT OF INTRAVITREAL ANTI VEGF COMBINED WITH MACULAR LASER IN A CASE OF PROLIFERATIVE DIABETIC RETINOPATHY WITH CLINICALLY SIGNIFICANT MACULAR EDEMA

Ophthalmology

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ABSTRACT

Diabetic retinopathy specifically Diabetic macularedema is the leading cause of new cases of blindness in working adults. We here discuss a case of a 50 year old male diabetic with clinically significant macular edema who received a dose of intravitreal antiVEGF followed by panretinal photocoagulation 3 weeks later and macular laser at the end of 3rd month. On various followups there was a serial decrease in macular thickness. This case emphasizes on the fact that combined effect of AntiVEGF therapy with laser therapy has a beneficial role in Proliferative Diabetic retinopathy with Diabetic Macular Edema.

KEYWORDS

Anti VEGF, Panretinal Photocoagulation, Diabetic macular edema

INTRODUCTION

Diabetes mellitus is a serious health problem that affects over 350 million individuals. Diabetic retinopathy, which is the most common microvascular complication of diabetes, is the leading cause of new cases of blindness in working-aged adults¹. Diabetic maculopathy is the main reason for visual loss in patients with diabetic retinopathy, besides proliferative diabetic retinopathy⁽²⁻⁴⁾.

Strict control of glucose levels and blood pressure significantly reduces and delays the onset and severity of diabetic retinopathy.^(5,6)

Available therapies include macular laser photocoagulation, corticosteroids, and anti-VEGF drugs. However, single treatments are often not effective enough to control DME during the entire course of the disease which can be very long. The multifactorial complex pathogenetic mechanisms require a comprehensive approach.⁷

CASE

We discuss a case of 50 year old male known case of T2diabetes mellitus of 15years and recently diagnosed hypertension who came to us with the complaint of diminution of vision in both eyes.(re>le). Best Corrected Visual acuity in right eye was finger count 6 mt and in left eye was 6/36. Intraocular pressure was within normal limits in both eyes. Fundus fluorescein angiography in both eyes shows proliferative diabetic retinopathy with clinically significant macular edema. On optical coherence topography patient showed increased macular thickness in both eyes, with an average thickness of 367um in right eye and 318um in left eye. Patient then had one dose of intravitreal (Anti VEGF)1.25 mg in 0.1ml injection. Patient underwent Panretinal photocoagulation at 3 weeks. Patient was followed up at 15 days, 1 month, 2 months and 3 months and 5 months. Macular thickness by optical coherence tomography, Best corrected visual acuity by snellens chart, fundus examination and IOP monitoring was done at follow ups. Patient underwent focal macular laser in both eyes at the end of 3rd month. At the end of 5 months there was a reduction in the average macular thickness to 335um in right eye and 277.9um in left eye. Best corrected visual acuity did not improve in both the eyes after the intervention.. Intraocular pressure continued to remain normal.

DISCUSSION:

Diabetic retinopathy (DR) is the most common microvascular complication of diabetes⁸.

In NPDR, gradual nonperfusion of the retinal vascular bed, characterized by loss of vessel integrity, ultimately leads to occlusion or degeneration of capillaries⁹. Localized capillary nonperfusion results in regions of ischemia and impaired oxygenation of the metabolically demanding retinal neurons. Progressive capillary nonperfusion and resultant ischemia underpin progression to PDR, which is driven by hypoxia and expression of proangiogenic growth factors like VEGF. VEGF plays a critical role in the initiation of diabetic neovascularisation, increases vascular permeability, causes breakdown of BRB and results in DME.

Anti-vascular endothelial growth factor (anti-VEGF) treatments inhibit VEGF angiogenic activity, binding to VEGF protein and thus preventing its receptor activation or interaction.

Anti VEGF therapy is now considered primary treatment of fovea involving DME in most eyes.

ETDRS demonstrated better visual outcomes with laser therapy. Laser therapy reduces the hypoxic retina thereby increasing oxygen concentration in the centre. Thus combined effect of both AntiVEGF and laser therapy is a good treatment option for proliferative diabetic retinopathy with Diabetic macular edema.

READ2 trial concluded that Intraocular injections of ranibizumab provided benefit for patients with DME for at least 2 years, and when combined with focal or grid laser treatments, the amount of residual edema was reduced, as were the frequency of injections needed to control edema. We treated these patients in accordance with the findings of READ2 trials and found favourable outcomes on followup. The major benefit was reduced frequency of ranibizumab in helping reduce financial burden in resource limited settings.¹⁰

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