Recent Advances In The Treatment 0f Macular Edema Associated With Retinal Vein Occlusion

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Introduction

Retinal vein occlusion (RVO) is the second most common vascular accident of visual reduction after diabetic retinopathy.[1]

Thrombus formation is the most common cause, with systemic hypertension, cardiovascular disease, diabetes mellitus and open angel glaucoma as predisposing factors.[2]

Retinal vein occlusions are classified according to whether the central retinal vein or one of its branches is obstructed. Although classified together, central retinal vein occlusion(CRVO)and branch retinal vein occlusion(BRVO) differ with respect to their Pathophysiology, underlying systemic associations, average age of onset, clinical course, and therapy.both CRVO and BRVO can be divided further into ischemic and non ischemic varieties.[3]

Macular edema is a common cause of severe visual loss in both BRVO and CRVO .[4]

The central retinal vein occlusion study recommended careful observation, follow up and pan retinal photocoagulation for eyes which develop iris neovascularization or angel neovascularization. Grid photocoagulation is not recommended for the treatment of CRVO related macular edema.[4]

The branch retinal vein occlusion study on the other hand, recommended grid photocoagulation for macular edema. Scattered laser photocoagulation is applied for retinal neovascularization .[5]

Other medical lines including fibrinolytic agents, anticoagulant, hypolipidemic drugs and isovolaemic haemodilution, are of limited role.[6]

Recently Intravitreal triamcinolone acetonide injection is one treatment option that, despite associated adverse events such as intraocular pressure elevation and cataract formation or progression.[7,8,9,] has demonstrated promising results for the treatment of macular edema associated with CRVO [9] and BRVO. [10,11]

With the introduction of anti-vascular endothelial growth factor (VEGF) therapy for the treatment of ocular diseases, several anti-VEGF drugs appear promising for treatment of macular edema associated with CRVO[12] and BRVO[13] . However, the main limitations of this treatment modality are its short-term effectiveness and high recurrence rate.[12,13]

Laser-induced chorioretinal arterio-venous anastomosis is one of the treatment modalities being advocated for non-ischemic CRVO . This procedure needs high power density argon laser photocoagulation to one retinal vein in the lower part of the fundus at least 3 disk diameter away from the optic disk.[14]

In 2007 Mandelcorn and his group demonstrated that Macular decompression using vitrectomy and ILM peeling is effective in the treatment of severe visual loss due to macular edema in CRVO and in those BRVO cases that do not qualify for laser photocoagulation.[15]

Aim of the work

The aim of this work is to review the recent modalities in the treatment of macular edema associated with retinal vein occlusion.

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List of abbreviations

A-V	Arteriovenous.
BRVO	Branch retinal vein occlusion.
CFT	Central foveal thickness.
CME	Cystoid macular edema
CMT	Central macular thickness.
CRA	Central retinal artery.
CRT	Central retinal thickness.
CRV	Central retinal vein.
CRVO	Central retinal vein occlusion.
FFA	Fundus flurescein angiography.
ILM	Internal limiting membrane.
IOP	Intraocular pressure.
IVTA	Intravitreal injection of triamcinolone acetonide.
LC	Laser photocoagulation.
ME	Macular edema.
NV	Neovascularization.
NVD	New vessels at the optic disc.
NVE	New vessels elsewhere.
NVG	Neovascular glaucoma

OCT	Optical coherence tomography.
ONH	Optic nerve head.
PPV	Pars plana vitrectomy.
PSC	Posterior sub capsular catract.
PVD	Posterior vitrous detatchement.
RVO	Retinal vein occlusion.
TA	Triamcinolone acetonide.
VA	Visual acuity.
VEGF	Vascular endothelial growth factor.

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