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Intravitreal Bevacizumab for Macular Edema Associated with Hemiretinal and Central Retinal Vein Occlusion

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Abstract

Purpose: : To report the use of a single intravitreal injection of bevacizumab (Avastin®) in patients with macular edema associated with hemiretinal or central retinal vein occlusion.

Methods: : Prospective interventional case series including four consecutive patients with hemiretinal or central retinal vein occlusion with macular edema in whom fluorescein angiography and third generation optical coherence tomography (OCT) demonstrated breakdown of the blood–retinal barrier and increased central macular thickness, respectively. The duration of retinal vein occlusion was >3 months in three (75%) eyes; one eye had neovascularization on the iris and optic disc. All four eyes were treated with a single intravitreal injection of 2.0 mg/0.08 ml of bevacizumab. Main outcome measures include changes in ETDRS best–corrected visual acuity, severity and area of fluorescein leakage, and macular morphology on OCT.

Results: : Four eyes of four patients with hemiretinal vein occlusion (n=2) or central retinal vein occlusion (n=2) with associated diffuse macular edema received one intravitreal injection of bevacizumab. With 3 months of follow–up, visual acuity remained stable in one eye and improved in the remaining three eyes (20/800 to 20/125+1; 20/400–2 to 20/160+2, and 20/80–1 to 20/32–1). The one eye with neovascularization present pre–injection demonstrated resolution of both the iris and optic disc neovascularization. Fluorescein angiograms at post–injection weeks 1, 6, and 12 showed no obvious damage to the retinal vasculature or increase in ischemic areas, and demonstrated decreased fluorescein leakage from affected retinal quadrants. OCT demonstrated decreased macular edema in all four treated eyes.

Conclusions: : A single intravitreal injection of 2.0 mg of bevacizumab was associated with short–term visual acuity stabilization or improvement in four patients with macular edema due to hemiretinal or central retinal vein occlusion. Reduction of fluorescein leakage and decreased macular edema on OCT were observed in all four cases.

Keywords: vascular occlusion/vascular occlusive disease • macula/fovea • retina

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