Comparison Laser and Combine Laser Bevacizumab in Macular edema due to CRVO

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Introduction

Macular grid laser photocoagulation remained the standard of care for macular edema secondary to BRVO. But after grid laser photocoagulation the visual acuity improvement is often very limited. More recently, vascular endothelial growth factor (VEGF) is known to play a major role in this macular edema due to BRVO. One possible strategy for treating macular edema is to inhibit VEGF activity by competitively binding VEGF with anti- VEGF antibody, suggesting therapy with bevacizumab

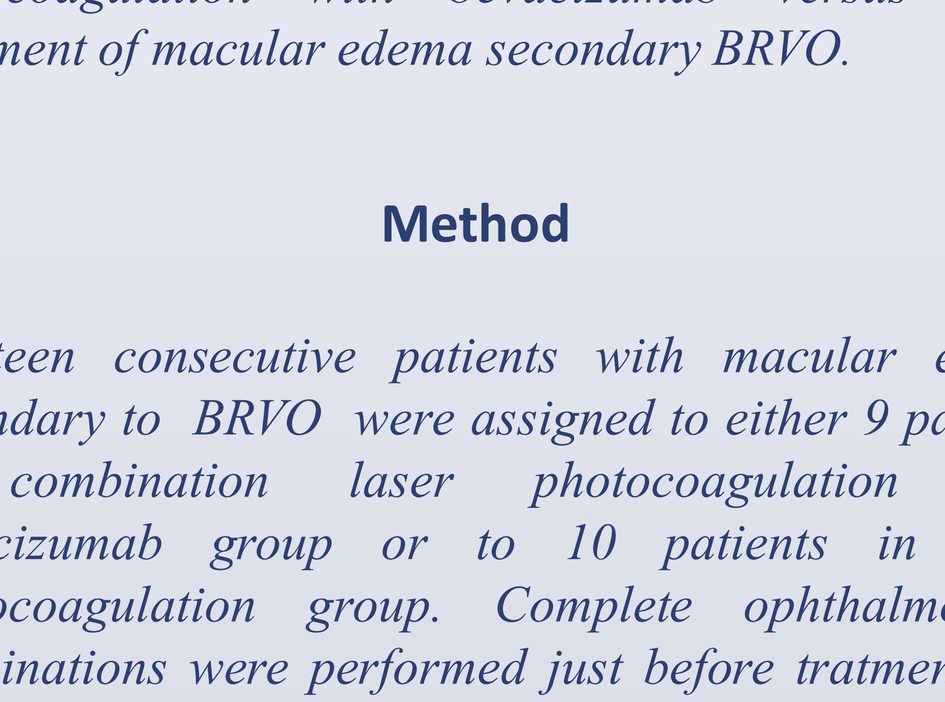
Purpose

We conducted a comparative prospective study to evaluate increase visual aquity and decrease central macular thickness of combination laser photocoagulation with bevacizumab versus laser treatment of macular edema secondary BRVO.

Method

Nineteen consecutive patients with macular edema secondary to BRVO were assigned to either 9 patients in combination laser photocoagulation with bevacizumab group or to 10 patients in laser photocoagulation group. Complete ophthalmologic examinations were performed just before tratment and one month after treatment. Changes in logarithm of minimum angle of resolution (logMAR) visual acuity and central macular thickness shown by optical coherence tomography (OCT).

Visual Acuity



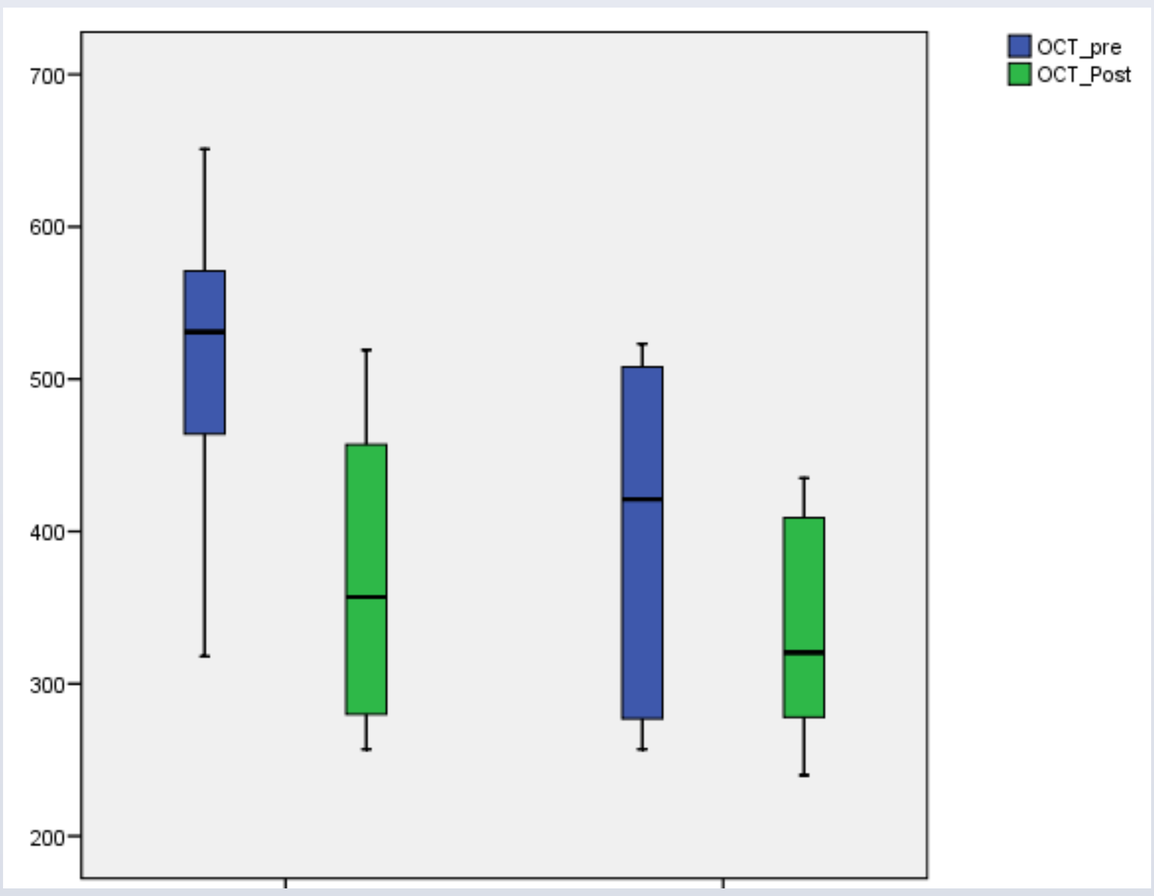
Result

Combination laser photocoagulation and intravitreal bevacizumab revealed a significantly better visual acuity compared with laser photocoagulation treatment (0.35 versus 0.13 logMAR; p 0.041) and reduced macular thickness 120,33µm versus 71,50µm (p 0,277)

Conclusion

Laser photocoagulation combined with intravitreal bevacizumab has a substantial effect on increasing on visual acuity in macular edema associated with BRVO

Central Retina Thickness



References

Rehak J, Rehak M. Mini-review Branch retinal vein occlusion: Pathogenesis, visual prognosis, and treatment modalities. Current Eye Research. 2008. 33:111–131

Rogers SL, McIntosh RL, Lim L, Mitchell P, Cheung N, Kowalski JW, et al. Natural History of Branch Retinal Vein Occlusion: An Evidence-Based Systematic Review. Ophthalmology. 2010;117:1094–1101

Klein R, Moss SE, Meuer SM, Klein BE. The 15-year cumulative incidence of retinal vein occlusion: the Beaver Dam Eye Study. Arch Ophthalmol 2008;126:513– 8.

Cugati S, Wang JJ, Rochtchina E, Mitchell P. Ten-year incidence of retinal vein occlusion in an older population: the Blue Mountains Eye Study. Arch Ophthalmol 2006;124:726 –32.

Ehlers JP, Fekrat S. Retinal vein occlusion : Beyond the acute event. Survey of Ophthalmology. 2011. 56: 281-299

Champochiaro PA, Heier JS, Feiner L, Gray S, Saroj N, Rundle AC, et al. Ranibizumab for macular edema following branch retinal vein occlussion : Six month primary end point result of a phase III study. Ophthalmology. 2010. 117: 1102-12

Noma H, Funatsu H, Yamasaki M, Tsukamoto H, Mimura T, Sone T, et al. Pathogenesis of macular edema with branch retinal vein occlusion and intraocular levels of vascular endothelial growth factor and interleukin-6. American journal of ophthalmology. 2005. Vol. 140 : 256 e1-7

Champochiaro PA, Bhisitkul RB, Shapiro H, Rubio RG. Vascular endothelial growth factor promotes progressive retinal nonperfusion in patients with retinal vein occlusion. Ophthalmology. 2013;120:795–802

Mehany SA, Mourad KM, Shawkat AM, Sayed MF. Early avastin management in acute retinal vein occlusion. Saudi journal of ophthalmology. 2010. 24:87-94

Iqbal Y, Zia S, Mirza BA. Visual Outcome after Intravitreal Bevacizumab for Macular Edema Secondary to Branch Retinal Vein Occlusion. Pak J Ophthalmol 2012, Vol. 28 No. 3

Miller JW, Le Couter J, Strauss EC, Ferrara N. Vascular Endothelial Growth Factor A in Intraocular Vascular Disease. Ophthalmology 2013;120:106–114

Conflict of Interest

The authors have no conflict interest to declare