Combination Therapy with Zeazanthin for the Treatment of Neovascular Age-Related Macular Degeneration-A Consecutive Case-Controlled 5-Year Study

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Purpose:
To determine if combination therapy of intravitreal bevacizumab, intravitreal and periocular steroids, photodynamic therapy (PDT) with verteporfin, and oral zeazanthin results in effective treatment of exudative age-related macular degeneration compared to published monotherapy studies.

Methods:
A 5-year retrospective, case-controlled, consecutive series of 401 eyes of 335 patients with sub-foveal choroidal neovascularization (CNV) secondary to exudative age-related macular degeneration (AMD) were reviewed. All eyes were treated with reduced fluence (25mJ) PDT with verteporfin, intravitreal and periocular steroids, 20 mg of daily oral zeazanthin, and 4 monthly injections of bevacizumab (1 treatment cycle). Retreatment was performed for any eyes with persistent intraretinal or subretinal fluid on OCT and/or persistent leakage on fluorescein/ICG angiography. Repeat cycles of therapy were continued until eyes were deemed stable. Best-corrected visual acuity, and central fovea thickness on OCT were recorded at 3, 6, and 12 months, and at 2, 3, 4, and 5 years follow-up.

Results:
At 5 years follow-up 63% of treated eyes had stable or improved visual acuity. At one year overall visual acuity gain was 1.5 letters ETDRS; at 3-years visual acuity loss was 2.7 letters; at 5-years visual acuity loss was 4.5 letters. Over-all 13% of eyes gained 15 or more letters; and the average number of treatment cycles to achieve stability was 2.4. CNV developed in 8% of fellow eyes over the five year period. An average cost-utility analysis revealed that combination therapy combined with oral zeazanthin was cost effective with an average 5-year cost of $8000. compared to 72,000 with ranabizumab, and 40,000 with aflibercept.

Conclusions:
Combination therapy is comparatively effective and also cost-effective. Considerably less treatment is needed than in reported monotherapy studies. The addition of daily 20mg of oral zeazanthin reduces the risk of CNV development in the fellow eye compared to other reported series in the literature.

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