Combination Therapy With Zeaxanthin for the treatment of Neovascular Age-Related Macular Degeneration (nAMD) A Retrospective Consecutive Case-Controlled 5 Year Study.

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Disclosures

- R. Joseph Olk, M.D. owns phantom shares of ZeaVision, Inc.
- Gary C. Brown, M.D. and Melissa Brown, M.D. have received consulting fees from ZeaVision, Inc.
- Dennis Gierhart, PhD is founder and owner of ZeaVision, Inc.
- ZeaVision, Inc. provided unrestricted grant support to The Retina Center of St. Louis County

Summary

- Combination therapy is comparatively effective and also very cost-effective compared to published mono therapy studies.
- Considerably less treatment is needed to achieve stability than in reported monotherapy studies. This significantly reduces the treatment burden for patients and doctors.
- The addition of oral zeaxanthin reduces the risk of nAMD in the fellow eye compared to the other reported series in the literature.
- It appears that the zeaxanthin protective effect becomes greater with time, as shown by the fact that the 4 and 5 year conversions to nAMD in fellow eyes are very significantly less than those in other long term published studies.

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Purpose

- To determine if combination therapy of intravitreal bevacizumab, intravitreal and periocular steroids, photodynamic therapy (PDT) with venteporfin, and oral zeaxanthin results in effective treatment of neovascular age-related macular degeneration (nAMD) compared to published monotherapy studies.

Methods

- A five year retrospective case-controlled consecutive series of 445 eyes of 337 patients with Subfoveal Choroidal Neovascularization (CNV) secondary to neovascular age-related macular degeneration (nAMD) were reviewed.
- All eyes were treated with reduced-fluence (25mJ) PDT with verteporfin, intravitreal and periocular Steroids, 20mgs of daily oral zeaxanthin, and 4 monthly injections of intravitreal bevacizumab (1 treatment cycle).
- Retreatment was performed for any eyes with persistent intraretinal or subretinal fluid on OCT and/or persistent leakage on fluorescein (FA)/ indocyanine green (ICG)angiography.
- Repeat cycles of therapy were continued until eyes were deemed stable (no fluid on OCT; no leakage on FA/ICG angiography).
- Best corrected visual acuity and central foveal thickness on OCT were recorded at 3,6, and 12 months, and 2,3,4 and 5 -years follow up.

Results

- Follow- up was 99.8% at 1 year (435 eyes); 96.1% at 3-years (419 eyes); and 92.2% at 5 years (402 eyes).
- 15 patients were lost to follow-up during the study and 17 patients died.
- At 5-years follow up 55% of treated eyes had stable or improved visual acuity.
- Overall 13% of eyes gained 15 or more letters; and the average number of treatment cycles to achieve stability was 2.7. nAMD developed in 8.8% of fellow eyes at 1 year; 21.1% at 3 years, and 21.6% at 5 years.
- An average cost-utility analysis revealed that combination therapy as described in this study was very cost effective with an average cost of $8000.00 per eye compared to $72,000.00 for monotherapy using Ranibizumab, and $40,600.00 for Aflibercept.

Conclusions

- Combination therapy is comparatively effective and also very cost-effective compared to published mono therapy studies.
- Considerably less treatment is needed to achieve stability than in reported monotherapy studies. This significantly reduces the treatment burden for patients and doctors.
- The addition of oral zeaxanthin reduces the risk of nAMD in the fellow eye compared to the other reported series in the literature.
- It appears that the zeaxanthin protective effect becomes greater with time, as shown by the fact that the 4 and 5 year conversions to nAMD in fellow eyes are very significantly less than those in other long term published studies.