

Bevacizumab Useful for the Treatment of Myopic CNV

Off-label treatment with bevacizumab may prove beneficial against other forms of CNV secondary to AMD.

BY ADAM H. ROGERS, MD, AND ELIAS REICHEL, MD

Myopic degeneration associated with subfoveal choroidal neovascularization (CNV) remains a blinding disease with limited treatment options (Figure 1). When left untreated, more than 95% of affected eyes will experience vision loss of 20/200 or worse.¹

Photodynamic therapy (PDT) with verteporfin (Visudyne; Novartis, Basel Switzerland) initially offered some hope for treatment of myopic CNV. At 1 year, 72% of treated eyes versus 44% of placebo-treated eyes lost fewer than eight letters on Early Treatment for Diabetic Retinopathy Study (ETDRS) visual testing. Results at 2 years, however, were less promising, and showed no statistical significance between treated eyes and control groups.²

The introduction and growing popularity of off-label intravitreal bevacizumab use (Avastin; Genentech, San Francisco) as an inexpensive yet apparently effective treatment for CNV secondary to age-related macular degeneration (AMD),^{3,4} may prove beneficial against other forms of CNV.⁵

A retrospective review by Izumi Yamamoto, MD, and associates, initially published online in July 2006 in the *British Journal of Ophthalmology*, supports the short-term efficacy of intravitreal bevacizumab 1.25 mg in treating recent vision loss from myopic CNV.⁶ In that study, 11 eyes of nine patients were treated with intravitreal bevacizumab. Five eyes were previously treated using PDT with verteporfin, while the remaining six eyes received no prior treatments.

Initial visual acuity measured 20/50 to 20/100 in six eyes, and \leq 20/200 in five eyes. A mean follow-up of 153 days showed that visual acuity improved a mean of 3.5 lines (Snellen); with final visual acuity \geq 20/40 in seven eyes, 20/50 to 20/100 in one eye, and \leq 20/200 in three eyes.

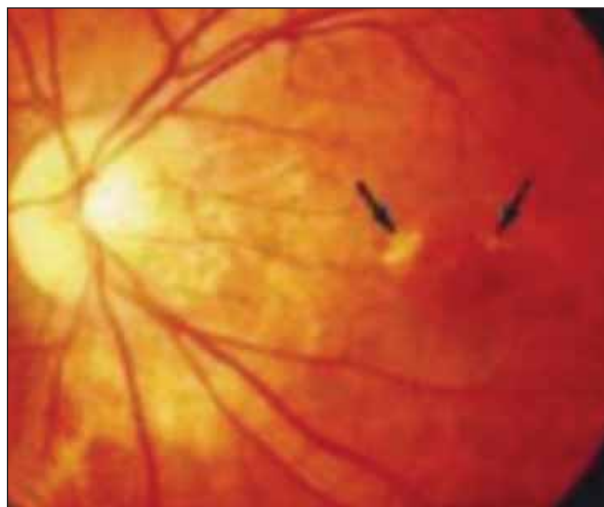


Photo courtesy of Br. J. Ophthalmol. 2003;87:570-573.

Figure 1. Development of myopic CNV from lacquer cracks in a 28-year-old woman.

Central foveal thickness measured on optical coherence tomography (OCT) was reduced an average of 103 μ m. No injection or drug-related side effects were observed.

UPDATE FROM ORIGINAL COHORT

At Retina 2007 held in conjunction with the Hawaiian Eye meeting, our team further validated the initial published findings by Dr. Yamamoto, and presented updated results of the original cohort, which at that point included 15 eyes of 13 patients. Visual acuity improved a mean of 3.1 lines with 11 of 15 eyes achieving a visual acuity of \geq 20/50 or better at 9.6 months follow-up. Central foveal thickness on OCT demonstrated an average reduction of 93 μ m.

One eye received five injections, one eye received three injections, two eyes received two injections and 11 eyes received one injection. No injection or drug related complications were identified with the longer follow-up period.

The data from these three recently published articles lends credibility to the safety and efficacy of intravitreal bevacizumab in treating CNV not associated with AMD.

The initial report by Dr. Yamamoto and associates, has been corroborated by two additional publications. Hideki Sakaguchi, MD, PhD, and colleagues, published the results of eight eyes treated with intravitreal bevacizumab for myopic CNV.⁷ Visual acuity improved two or more lines in six eyes and was unchanged in two eyes, with a mean follow-up of 4.4 months. Only three of eight eyes received two injections and the remaining five required one injection. Ketan Laud, MD, and colleagues, found a 1.5 line improvement on four eyes with myopic CNV treated with intravitreal bevacizumab, with a mean follow-up of 7.3 months.

SAFE, EFFECTIVE

The data from these three recently published articles lends credibility to the safety and efficacy of intravitreal bevacizumab in treating CNV not associated with AMD. Further studies are needed to validate the long-term efficacy of bevacizumab in treating myopic CNV. After all, the true test of any treatment is whether its benefit is still realized more than 1 to 2 years after the therapy is initiated.

Given these promising early results, however, intravitreal bevacizumab appears to be a cost effective treatment that shows potential in altering the devastating natural history of myopic CNV. ■

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PROBLEMS ASSOCIATED WITH HIGH MYOPIA

There are two main problems that can develop in high myopia: Myopic CNV and Retinal Detachment

- Myopic CNV can develop in about 5% of high myopes. CNV is the process of new blood vessels growing underneath the retina. If CNV occurs in the center of the retina, it can decrease the central vision.
- High myopes also have an increased risk of retinal detachment because the eye is longer than normal, and the retina is stretched more than usual, resulting in thin areas of the peripheral retina. These thin areas can sometimes develop holes or tears. If fluid from inside the eye goes through one of these holes or tears, the retina can become separated from the back wall of the eye, (ie, retinal detachment).

Symptoms:

- People who have developed myopic CNV may experience a decrease in central vision, a dark spot in the central vision, or a distortion of vision such that straight lines appear wavy.
- People who have a retinal hole or tear may notice a sudden onset of flashes of light, floaters, or a dark area in the field of vision.

Treatment:

- Refractive surgery procedures such as LASIK do not decrease the risk of myopic CNV or retinal detachment.
- Patients with myopic CNV can be treated similarly to patients with neovascular macular degeneration, as these disorders both have new blood vessel growth underneath the retina. The treatment options for myopic CNV include laser, PDT, and intravitreally injections of agents that inhibit new blood vessel growth.
- If patients with retinal holes or tears are seen before a retinal detachment develops, laser treatment can be used to seal off the area to prevent a retinal detachment. If a retinal detachment has already occurred, surgery will be necessary.

Source: The Bert M. Glaser National Retina Institute

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