

Visual Acuity Outcomes Following a Variable-Dosing Regimen for Ranibizumab (Lucentis™) in Neovascular AMD: The PrONTO Study

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Abstract

Purpose: Ranibizumab (Lucentis™, Genentech) was shown to improve the average visual acuity (VA) of eyes with neovascular AMD given an intravitreal injection every month for at least 1 year in the Phase III clinical trials. These VA results were similar to the earlier Phase I/II study results. In the ongoing Phase I/II extension study at the Bascom Palmer Eye Institute, we have maintained the improved VA for at least 2 years using a less frequent variable dosing regimen. To test this variable dosing regimen, we have initiated a single-site, FDA-reviewed, investigator sponsored trial known as the Prospective OCT Imaging of Patients with Neovascular AMD Treated with Intra-Ocular Lucentis (PrONTO) Study.

Methods: Neovascular AMD patients with VA from 20/40 to 20/400 and macular neovascularization with an OCT central thickness of at least 300 µm were enrolled. Each patient received 3 consecutive monthly injections of ranibizumab (500µg) in their study eye given at baseline, Month 1, and Month 2. OCT measurements were obtained at baseline and on post-injection days 1, 2, 4, 7, 14, and 30 during the first 2 months then monthly thereafter. EDTRS visual acuities were obtained at baseline and on post-injection days 14, 30, 45, 60 and then monthly thereafter. Fluorescein angiography was performed at baseline and every 3 months. Retreatment with ranibizumab was performed only if one of the following occurred: an increase in central OCT thickness of at least 100 µm, a loss of 5 letters in conjunction with recurrent fluid by OCT, new onset classic neovascularization, or new macular hemorrhage.

Results: Forty patients were enrolled and followed for at least 7 months. By Month 3, 1 month after the last scheduled injection, the mean VA score improved by 10 letters ($p < 0.001$) and the mean central thickness measurement decreased by 190µm ($p < 0.001$). By Month 7, 5 months after the last scheduled injection, the average number of retreatments per eye was 0.2 with 50% of eyes receiving no additional treatment. The mean VA improved by 9 letters ($p < 0.001$) and the mean central thickness measurement decreased by 158 microns ($p < 0.001$) compared with baseline. No drug-related adverse events were observed.

Conclusion: The improvements in VA and OCT measurements observed by Month 3 were maintained through Month 7 using a variable dosing regimen. Continued follow-up is planned for 2 years.

Key Words: age-related macular degeneration • choroid: neovascularization • clinical (human) or epidemiologic studies: treatment/prevention assessment/controlled clinical trials