Correspondence

Re: Vogel et al.: Foveal development in infants treated with bevacizumab or laser photocoagulation for retinopathy of prematurity (Ophthalmology. 2018;125:444-452)

TO THE EDITOR: We read with interest the article by Vogel et al.1 demonstrating the foveal development in infants treated with bevacizumab or laser photocoagulation for retinopathy of prematurity (ROP).1 The authors concluded that intravitreal bevacizumab injection for ROP yields a more rapid outer retinal thickening at the foveal center and laser photocoagulation is related to delayed development of the ellipsoid zone at the fovea.1 They also reported that the cystoid macular changes observed in the patients were not associated with the bevacizumab or laser treatment.1

When evaluating the effects of ROP treatment modalities on foveal structures, it is beneficial to take into consideration several confounding factors such as feeding pattern of the patient, birth week, weight gain, initial weight, amount of oxygen use, environmental lighting status, and associated systemic diseases. In addition, there may be other, treatment-related factors that can affect foveal structure, such as the intensity and extent of laser treatment, as well as the dosing and number of bevacizumab injections.

The study by Vogel et al.1 might be improved by adding some other macular imaging tests. OCT angiography would provide valuable data about the vascular development of the macula and status of the foveal avascular zone. In addition, fundus fluorescein angiography should be performed in patients with ROP, because the main pathology is associated with the retinal vasculature. As the authors pointed out, long-term follow-up is needed to better evaluate the effects of both treatment modalities. In cases of ROP, it is difficult to determine if having rapid outer retinal thickening is advantageous or delayed development of the ellipsoid zone at the foveal center is disadvantageous, because the normal macular development patterns may be somewhat altered. In further studies, performing vision tests, including assessment of acuity, contrast sensitivity, color vision, visual field, and a macula photostress test may provide additional information about the physiological benefit of those treatment options.

The beneficial effects of intravitreal anti-vascular endothelial growth factor agents in ROP treatment have been demonstrated.2,4 There are some possible advantages of bevacizumab injection over laser therapy. Bevacizumab treatment is superior, especially in cases of aggressive posterior ROP and zone 1 disease.3,4 In contrast, late-term recurrence rate and risk of persistent avascular zones may be lower in laser treatment.3,5 Also, bevacizumab may have a risk of deterioration of other organ systems because it passes into the systemic circulation.3,5 In further studies, by taking into consideration the miscellaneous confounding factors related to ROP, it would be easier to draw conclusions about the effects of anti-vascular endothelial growth factor and laser treatments on foveal development.

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Financial Disclosures: The authors have no proprietary or commercial interest in any materials discussed in this article.

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References