Intravitreal bevacizumab (Avastin) prevention of panretinal photocoagulation-induced complications in patients with severe proliferative diabetic retinopathy.

PURPOSE: To evaluate the efficacy of intravitreal injection of bevacizumab (Avastin) (IVA) in preventing panretinal photocoagulation (PRP)-induced macular thickening and visual dysfunction in eyes with severe proliferative diabetic retinopathy.

METHODS: A retrospective review of 60 consecutive eyes (30 patients) with severe proliferative diabetic retinopathy whose visual acuity was 20/30 or better (<0.18 in logarithm of the minimum angle of resolution acuity) and average foveal thickness (FT) was 280 microm or less, and whose retinopathy was bilateral and symmetrical, was performed. In all eyes, PRP was performed in two sessions. In the interventional group, 1.25 mg of IVA was injected to each eye 1 week before initiation of PRP. Foveal thickness was measured by optical coherence tomography before treatment, and the clinical course was monitored by best corrected visual acuity (BCVA) and FT for 24 weeks after beginning PRP.

RESULTS: Before treatment, mean BCVA and FT was 0.073 +/- 0.071 microm and 278.8 +/- 29.5 microm in the IVA-injected group and 0.069 +/- 0.076 microm and 273.5 +/- 27.7 microm in the control group, respectively. After the IVA injection and PRP completion, FT in the IVA-injected eyes
was significantly decreased, with a mean FT of 257.2 microm at 12 weeks and 264.3 microm at 24 weeks. In the control group, FT increased dramatically and reached 307.3 microm at 12 weeks and 298.2 microm at 24 weeks. The difference in final FT between groups was significant (P = 0.001). Best corrected visual acuity in the control group decreased with time to 0.149 +/- 0.113 at 24 weeks; in contrast, BCVA in the IVA-injected eyes improved over time to 0.039 +/- 0.054 at 24 weeks. This difference in BCVA was statistically significant (P< or =0.0001). Seven eyes (23.3%) in the control group had worse vision by > or =2 lines and increased FT by > or =50 microm at 24 weeks, whereas none of the eyes in the IVA group had either worse vision or a significant increase in FT (P = 0.011).

CONCLUSIONS: A single IVA injection given before standard PRP may be beneficial in preventing PRP-induced visual dysfunction and foveal thickening in eyes with severe proliferative diabetic retinopathy and good vision.

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