DA VINCI: DME And VEGF Trap-Eye: INvestigation of Clinical Impact: Phase 2 study in patients with Diabetic Macular Edema (DME)

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BACKGROUND
VEGF Trap is a recombinant fusion protein consisting of VEGF binding domains of human VEGF receptors 1 and 2 fused to the Fc domain of human IgG1. VEGF Trap-Eye has demonstrated bioactivity and safety in a phase 1 study of diabetic macular edema.

PURPOSE
Present detailed efficacy and safety analyses of the primary 24-week endpoint from the Phase 2 study assessing VEGF Trap-Eye vs. laser photocoagulation in DME.

METHODS
DA VINCI is a multi-center, randomized, active-controlled Phase 2 clinical study, designed to assess safety and efficacy of 4 dose/dose intervals of VEGF Trap-Eye (VTE) in comparison to laser photocoagulation. 221 patients were randomized (219 treated) to 1 of the following treatment groups: 0.5mg q4wks, 2mg q4wks, 2mg q8wks, 2mg prn or laser photocoagulation. The primary endpoint is the mean change from baseline in BCVA at week 24. Secondary endpoints include changes in retinal thickness (CRT) on OCT and central retinal sensitivity. Central retinal sensitivity was measured using the Nidek MP-1 microperimeter with values corresponding to the OCT central subfield.

RESULTS
At 6 months, the mean change in BCVA for each VTE group ranged from +8.5 to +11.4 letters and was statistically significantly better than the mean change in BCVA in the laser group (+2.5 letters; $p<0.01$), and no significant difference was noted among the VTE arms. Anatomical effects~~changes were significant as well.~~(m ~~M~~ean change in CRT) for each VTE group ranged from -127µm to -195µm and was ~~statistically~~ significantly greater than the mean change in CRT for the laser group (-68µm; $p<0.01$). VTE arms had a mean gain in central retinal sensitivity ranging from 1.5 to 4.1dB, while the laser arm had a mean decrease of -0.4dB. VEGF Trap-Eye was generally well-tolerated, and adverse events reported were those typically associated with intravitreal injections or underlying disease. The most frequent adverse events reported in the VTE arm included conjunctival hemorrhage, eye pain, floaters, ocular hyperemia, and increased IOP.

CONCLUSION
~~In this patient population~~In this patient population at the primary endpoint (24-weeks), intravitreal VTE was generally well tolerated and produced ~~statistically~~ significant improvements from baseline in visual acuity, retinal thickness and central retinal sensitivity as compared to laser photocoagulation.