Treatment Effect of Intravitreal Aflibercept Injection by Baseline Factors in Moderately Severe-to-Severe Nonproliferative Diabetic Retinopathy in PANORAMA

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Purpose:
To evaluate the difference in treatment effect between intravitreal aflibercept injection (IAI) and sham by baseline factors for eyes with moderately severe-to-severe nonproliferative diabetic retinopathy (NPDR) without diabetic macular edema (DME) and ≥2-step improvement (from baseline) in Diabetic Retinopathy Severity Scale (DRSS) score.

Methods:
Phase 3 PANORAMA trial (NCT02718326) randomized eyes with DRSS levels 47 or 53 without DME to receive either IAI 2 mg every 16 weeks (2q16) following 3 monthly doses and one 8-week interval (2q16, n=135), IAI 2 mg every 8 weeks (2q8) following 5 monthly doses (2q8, n=134), or sham (n=133) through week 52. Missing data were imputed using the last observation carried forward method. Data from patients receiving rescue treatment were censored from the time of rescue treatment.

Results:
At week 52, the adjusted differences between IAI 2q16 and sham and IAI 2q8 and sham for the proportions of eyes with ≥2-step DRSS improvement were greater across age tertiles (≤52 years: 41.4% and 60.0%; >52 – ≤61 years: 56.6% and 70.3%; and >61 years: 52.6% and 60.5%, respectively), Hispanic ethnicity (yes: 60.0% and 65.9%; no: 43.8% and 62.2%, respectively), body mass index (BMI) groups (≤30 kg/m²: 52.2% and 62.7%; >30 – ≤35 kg/m²: 42.6% and 61.6%; and >35 kg/m²: 53.3% and 68.7%, respectively), hemoglobin A1c tertiles (≤7.6%: 38.9% and 56.6%; >7.6% – ≤9.1%: 57.9% and 64.1%; >9.1%: 57.5% and 72.7%, respectively), diabetes duration tertiles (≤10.3 years: 38.6% and 63.6%; >10.3 – ≤17.6 years: 63.1% and 68.3%; >17.6 years: 50.8% and 56.2%, respectively), and DRSS severity (level 47: 45.3% and 61.1%; level 53: 63.6 and 75.8%, respectively). For all comparisons versus sham, P≤0.0004. Treatment effect was not impacted in any of the selected baseline subgroups.

Conclusions:
Significantly greater proportions of eyes treated with IAI had a ≥2-step DRSS improvement versus sham, across all selected baseline factors (age, Hispanic ethnicity, BMI, hemoglobin A1c, diabetes duration, and DRSS severity) in eyes with moderately severe-to-severe NPDR. No treatment-by-subgroup interactions across selected baseline factors were found.