Twenty-Four-Month Optical Coherence Tomography Assessment (OCTA) in Diabetic Patients Undergoing Fixed-Interval Intravitreal Aflibercept Therapy

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The researchers evaluated capillary perfusion density (CPD) in patients with diabetic macular edema (DME) undergoing fixed intravitreal aflibercept injections (IAI) through 24 months.

This study was a prospective, interventional, single-arm study.

Eligible eyes exhibited persistent center-involved DME with central subfield thickness (CST) of 325 µm or greater on spectral-domain optical coherence tomography (SD-OCT) who required ongoing anti-VEGF therapy despite prior treatment with at least 4 injections of either bevacizumab or ranibizumab during the 6 months leading up to the baseline visit.

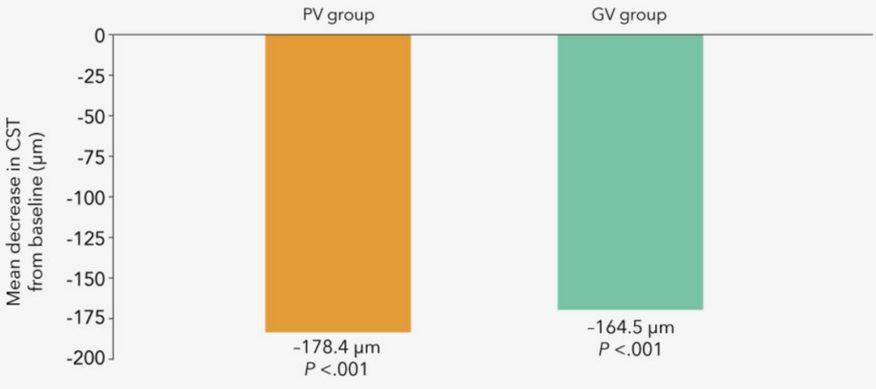
→ Patients were treated with monthly 2 mg IAI until SD-OCT demonstrated fluid resolution. Fluid resolution was defined as lack of subretinal fluid, CST less than 320 µm, or central edema without disruption of the foveal contour.

→ Patients exhibiting resolution were extended to a fixed 8-week interval.

The primary outcome measured was mean change in CST from baseline to 24 months; secondary outcomes included mean change from baseline in cube average thickness (CAT), cube volume (CV), best-corrected visual acuity (BCVA), macular CPD, and foveal avascular zone (FAZ) area.

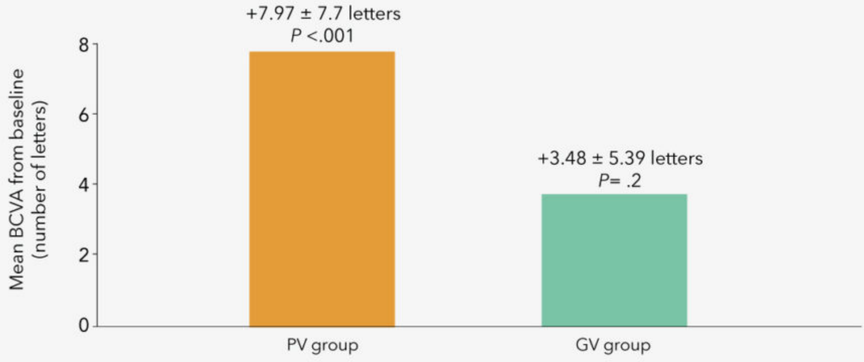
Participants were also stratified according to baseline BCVA as either poor vision (PV), defined as 20/50 vision or worse, or good vision (GV), defined as 20/40 vision or better.

When analyzed in poor vision (PV) and good vision (GV) groups, both groups exhibited a statistically significant mean decrease in CST from baseline.



The mean difference in decreased CST between the 2 groups was not statistically significant (-13.9 µm; *P*= .77).

The PV group showed a statistically significant improvement in BCVA from baseline.



The difference in mean visual acuity change between the 2 groups was not statistically significant (difference of 4.49; *P*= .34).

Whole superficial CPD decreased by 5.3% ± 3.1% from baseline (*P*= .001); deep CPD decreased by 4.4% ± 3.3% (*P*= .009). Mean FAZ area enlarged by 0.11 mm^3 ± 0.07 mm^3 (*P*= .006).

There was no statistically significant correlation between final BCVA and the following mean CPD values: superficial foveal; deep foveal; deep parafoveal; and deep whole macular.

Statistically significant FAZ enlargement, along with superficial and deep whole macular CPD loss, occurred at 24 months. This study also identified a significant positive correlation between better final BCVA and less superficial parafoveal and whole macular CPD loss.

Conclusions

Superficial and deep CPD decreased despite fixed IAI through 24 months. Statistically significant FAZ enlargement, along with superficial and deep whole macular CPD loss, occurred at 24 months. This study also identified a significant positive correlation between better final BCVA and less superficial parafoveal and whole macular CPD loss.