Interrelationships Between Macular Neovascularization Lesion Type, Retinal Fluid Location, and Visual Outcomes in the HARBOR Trial

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Purpose:
To examine the relationships between anatomic macular neovascularization (MNV) lesion type, retinal fluid, and visual outcomes among ranibizumab-treated eyes with nAMD in HARBOR (NCT00891735).

Methods:
This post hoc analysis included ranibizumab-treated eyes (monthly or PRN) with MNV and subretinal fluid (SRF) and/or intraretinal fluid (IRF) at baseline (n = 700). BCVA outcomes over 24 months were assessed by baseline MNV lesion type, fluid location, and fluid presence/absence at baseline, month (m) 12, and m24.

Results:
Overall, eyes with Type 1 lesions had the highest mean BCVA profile (59, 68, and 68 letters at baseline, m12, and m24, respectively), followed by any Type 3 (55, 65, and 64 letters) and Type 2/Mixed 1 and 2 (Type 2/M; 50, 61, and 61 letters). Mean BCVA gains at m24 were higher among monthly- versus PRN-treated Type 2/M eyes (+9.0, +12.6, and +8.3 letters vs +8.4, +8.8, and +8.3 letters for Type 1, Type 2/M, and any Type 3, respectively). Baseline BCVA was worse for eyes with central versus noncentral IRF (mean: 56, 47, and 55 letters vs 58, 57, and 65 letters for Type 1, Type 2/M, and any Type 3, respectively). Mean BCVA gains at m24 were greater in Type 2/M eyes with any residual versus no SRF at m24 (+15.5 vs +9.8 letters), but similar for those with Type 1 lesions (+8.1 vs +8.8 letters). Mean BCVA gains were worse in Type 1 and Type 2/M eyes with any residual versus no IRF at m24 (+6.9 vs +9.3 letters and +5.6 vs +12.7 letters, respectively).

Conclusions:
Visual outcomes among ranibizumab-treated eyes were associated with MNV lesion type and retinal fluid presence. There was a trend towards better BCVA gains among monthly- versus PRN-treated Type 2/M eyes. Overall, Type 1 eyes had the highest mean BCVA over time regardless of concurrent residual SRF. Vision gains at m24 were significantly better in Type 2/M eyes with concurrent residual SRF. Central IRF at baseline and residual IRF at m24 correlated with poor vision across lesion types. Anatomic classification of MNV lesion type and a nuanced assessment of retinal fluid should be considered in the management of nAMD.