Does Month 3 Response to Ranibizumab Predict Long-term Response to Treatment in Patients With Age-Related Macular Degeneration?

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Purpose:

There have been reports that early response to anti–vascular endothelial growth factor (VEGF) treatment can predict long-term neovascular age-related macular degeneration (nAMD) outcomes. This analysis of the phase 3 HARBOR trial (NCT00891735) aimed to determine whether month (M) 3 responses after 3 ranibizumab injections were predictive of long-term outcomes.

Methods:

We pooled 1057 patients with nAMD treated with ranibizumab and categorized them into the following response “lanes” according to best-corrected visual acuity (BCVA) improvement at M3: <5, 5–9, and ≥10 letters. Demographic and ocular characteristics at baseline were assessed for the M3 response groups and evaluated for between-lane differences. Mean change in BCVA at M3 and M24, mean BCVA over time by BCVA response at M3, and changes in central foveal thickness (CFT) were evaluated for the groups.

Results:

Baseline characteristics were similar in the <5 (n=376) and 5–9 (n=213) letters lanes, but patients with a ≥10-letter gain (n=468) were younger, had smaller lesions, worse BCVA, and thicker retinas. While plotting of mean BCVA for the 3 groups suggested that M3 vision change was predictive of long-term response, with patients “swimming in their lanes” through M24, in fact, there was substantial movement between lanes on an individual patient level (38% of patients overall). In the <5 letters lane at M3, 17% improved to 5–9 letters, and 21% improved to ≥10 letters, at M24. For patients in the 5–9 letters lane, 80% switched lanes at M24, with 35% declining to <5 letters, and 45% improving to ≥10 letters. In the ≥10 letters lane, 11% declined to <5 letters between M3 and M24, and 9% declined to 5–9 letters. CFT decreased in all patients by M3 and was maintained through M24 irrespective of the M3 BCVA lane.

Conclusions:

Assessment of M3 BCVA suggests that it does not predict long-term outcomes in nAMD, with ~40% of patients switching lanes, the majority showing improvement. A 3-month trial of an anti-VEGF treatment before deciding to switch may not be adequate for the full benefit of treatment to be demonstrated. Further biomarkers are needed to predict long-term nAMD outcomes.