Optimizing intravitreal aflibercept treatment schedules for patients with exudative-AMD

Wet age-related macular degeneration, or wet AMD, occurs when newly formed blood vessels leak or bleed into the center of the retina, resulting in poor vision. Proactive treatment with intravitreal aflibercept has produced good outcomes in clinical studies.

The treat-and-extend dosing strategy in particular has been shown to produce similar visual outcomes to fixed dosing every 4 or 8 weeks. And real-world evidence suggests that patients treated proactively in real life show outcomes similar to those observed in clinical trials.

In the ALTAIR study, investigators explored how to fine-tune the proactive treat-and-extend approach in Japanese patients.

The study aimed to identify the optimal extension interval for individual patients and individualize treatment with optimal extension to reduce the treatment burden for as many patients as possible. Ideally, treatments would be as infrequent as once every 16 weeks—with fast extensions made in 4-week increments—while maintaining initial vision gains.

The investigators varied the treatment interval of aflibercept among 246 patients with exudative AMD over 96 weeks. Notably, they also applied maintenance criteria. The interval was extended in patients with no fluid and maintained for patients with residual but decreased fluid. Criteria for shortening the treatment interval included new or persistent fluid, change in visual acuity from the previous visit, and new macular hemorrhage.

Patients were at least 50 years old, had never received intravitreal anti-VEGFs, and had a baseline best-corrected visual acuity of 73 to 25 ETDRS letter scores.

All patients first received intravitreal aflibercept once a month for three months. The next treatment was given at week 16, after which treatment intervals were adjusted: they were extended or shortened by either two weeks or four weeks, or maintained. However, injection intervals were shortened to a minimum of 8 weeks and extended to a maximum of 16 weeks.

The investigators then assessed visual acuity at 52 weeks—the primary endpoint—and at 96 weeks. Patients in the two groups showed significant vision improvements of 9.0 and 8.4 letters at 52 weeks, and of 7.6 and 6.1 letters at 96 weeks.

Both groups also experienced similar clinically significant reductions in central retinal thickness, which were maintained through the end of the study period.

The incidence of treatment-emergent adverse events was consistent with the known safety profile of intravitreal aflibercept.

Importantly, a large proportion of patients in either group achieved the maximum injection interval of 16 weeks. Once reached, that interval was maintained in more than 40% of the total patients up to week 96. Similar results were observed among patients achieving a 12-week interval.

To provide further practical and personalized treatment regimens for patients with exudative AMD, future investigations should examine predictive factors of outcomes and injection intervals. These include subtypes of AMD lesions and fluid status.