Intravitreal bevacizumab (Avastin, Genentech) appears to be a promising modality for treating macular oedema secondary to retinal vein occlusions, although repeated treatment appears to be necessary to maintain a beneficial effect, according to results of retrospective studies reported by the Pan-American Collaborative Retina Study (PACORES) Group at the annual meeting of the Association for Research in Vision and Ophthalmology.

Researchers analysed anatomic and functional outcomes from one series of 45 eyes of 45 patients with branch retinal vein occlusion (BRVO) and a second cohort of 56 eyes with central retinal vein occlusion (CRVO). In both diagnostic groups, a majority of patients had received prior treatment.

Bevacizumab was administered at an intravitreal dose of 1.25 or 2.5mg and patients were followed monthly with evaluations that included ETDRS BCVA and optical coherence tomography (OCT). Further injections were given based on changes in those parameters.

All eyes had a minimum follow-up of six months after the first bevacizumab injection. In both the group of eyes with BRVO and those with CRVO, BCVA and central macular thickness improved significantly from baseline by the first follow-up at one month. Thereafter, the effects were maintained in the CRVO eyes while as a group, the BRVO eyes showed further improvements during continued follow-up and achieved better overall outcomes compared with the CRVO eyes.

At last follow-up, all BRVO eyes were within three lines of baseline BCVA and two-thirds benefited with a gain of at least three lines. Among the CRVO eyes, BCVA improved by two or more lines in 60 per cent and remained within one line in 32.5 per cent, while 7.5 per cent lost two or more lines.

Comparing the two doses of bevacizumab, there were no significant differences in magnitude of response or the need for re-injection in eyes treated with 1.25mg versus 2.5mg. There were no serious ocular or systemic adverse events in either study group. "Retinal ischemia and hypoxia accompanying retinal vein occlusions are potent triggers for upregulating VEGF production, suggesting a rationale for anti-VEGF treatment in eyes with BRVO and CRVO," said José Antonio Roca, MD, a retinal specialist and associate professor of ophthalmology, Universidad Peruana Cayetano Heredia, Lima, Peru.

"Bevacizumab inhibits all isoforms of VEGF, and in our studies was found to provide anatomic and functional benefits without causing complications. Relative to alternatives, such as intravitreal steroid treatment, which is associated with high rates of glaucoma, cataract, pseudoendophthalmitis, or panretinal laser photocoagulation, which can result in visual field loss, night blindness, and other complications, bevacizumab may offer some safety advantages. However, more data are needed from larger patient populations and with longer follow-up."

The PACORES Group is comprised of seven centres representing six countries. Patients who were included in the BRVO study received their first injection of bevacizumab at a mean of 26 months post-diagnosis (range, three to 85). The mean number of injections per eye was 1.7 (range, one to five).

Mean logMAR ETDRS BCVA for the 45 BRVO eyes was 1.08 (Snellen 20/200) at baseline. It improved to 0.76 (20/100 +1) at one month, reached 0.69 at three months (Snellen 20/80) and was 0.62 (Snellen 20/63 -1) at six months. Mean central macular thickness at baseline was 420 microns. It declined to 300 microns at one month and fell to 262 microns at three months. At six months, mean central macular thickness was 259 microns.

Re-injection was considered when patients developed a one-line or greater worsening of VA or a 100-micron increase in central macular thickness. Twenty (44 per cent) patients required at least one additional injection. Of those 20 patients, 12 patients were given two injections, four eyes were treated three times with intravitreal bevacizumab; three eyes received four injections, and one eye was treated five times. Among retreated eyes, the mean time to the second injection was five weeks (range, four to 13).

The CRVO eyes were first treated with bevacizumab at an average of 10.6 months after diagnosis (range one to 108 months), and each received an average of about two bevacizumab injections. Most eyes received one or two re-treatments, but one eye was injected six times.

Mean baseline logMAR BCVA was 1.42 (Snellen 20/526) and mean central macular thickness was 568 microns. Mean logMAR VA improved to about 1.18 at one month, improved slightly more at three months, and was 1.17 at six months. Mean central macular thickness was reduced to about 300 microns at one month and remained at that level throughout the follow-up.

jaroca@terra.com.pe

José Antonio Roca