Tip of the Month

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European Glaucoma Society
Innovation, Education, Communication, Implementation

Glaucoma control can be detrimentally affected by recurrent anti- VEGF treatment for macular degeneration or diabetic macular oedema

The Science behind the Tip

Patients undergoing anti-VEGF (vascular endothelial growth factor) therapy for age-related macular degeneration or diabetic macular oedema are at risk of sustained IOP elevation[1-3]. This is more likely to occur after repeated injections with bevacizumab (10%) than with ranibizumab (3%)[3]. The risk is significantly greater for patients with glaucoma (33%) than for normal individuals (3%)[3]. A recent study shows that after six injections the risk that glaucoma surgery will be needed increases[4]. Inter-speciality communication is important and patients with glaucoma need to be particularly carefully monitored.

The mechanism of the IOP elevation is unclear. However, it has been suggested that altered nitric oxide metabolism in the trabecular meshwork, or a toxic/inflammatory reaction or mechanical blockade of the meshwork by protein aggregates could play a role[3].

References

1) Choi DY, Ortube MC, McCannell CA et al. Sustained elevated intraocular pressures after intravitreal injection of bevacizumab, ranibizumab and pegaptanib. Retina 2011; 31: 1028-35.

2) Bressler SB, Almukhtar T, Bhorade A et al. Diabetic Retinopathy Clinical Research Network Investigators. Repeated intravitreous ranibizumab injections for diabetic macular oedema and the risk of sustained elevations of intraocular pressure or the need for ocular hypotensive treatment. JAMA Ophthalmol 2015; 133: 589-597.

3) Good TJ, Kimura AE, Mandava N, Kahook MY. Sustained elevation of intraocular pressure after antivitreal injections of anti-VEGF agents. BrJ Ophthalmol 2011, 95: 1111-14.

4) Eadie BD, Etminan M, Carleton BC et al JAMA Opthalmol 2017; 135: 363-68.

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