

# Eye-pressure-lowering drugs may not work for intravitreal injections

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By Rob Goodier

NEW YORK (Reuters Health) - Medicated eye drops used to offset pressure spikes inside the eye have no effect on the pressure caused by intravitreal injections, a new study found.

Based on the finding, researchers recommend that doctors stop using the drops and systemic medications in conjunction with intravitreal injections of anti-vascular endothelial growth factor drugs that treat exudative, age-related macular degeneration (AMD) - but with one exception.

"Unless a minimal effect is desirable because it would be clinically significant, such as in patients treated with pegaptanib and who also have more advanced glaucoma," Dr. Ronald Frenkel, at the East Florida Eye Institute, told Reuters Health in an email.

Dr. Frenkel further recommends paracentesis to drain some eye fluid for patients with damaged optic nerves who have a history of intraocular-pressure (IOP) spikes, and for those who lose ocular circulation and the ability to see light for a few minutes after an injection.

Dr. Frenkel's team published the findings in the December Archives of Ophthalmology.

In a prospective medical record review, the researchers studied the effect of topical pressure-lowering drugs such as brimonidine and apraclonidine in 71 AMD patients at one treatment center who received injections of pegaptanib (Macugen), bevacizumab (Avastin) and ranibizumab (Lucentis). The treatment center specializes in glaucoma, so a high number, 35, of those studied had the disease.

IOP is known to spike immediately after an intravitreal injection increases the volume of liquid inside the eye. In the new study, eye pressure spiked to a mean of 34.8-38.5 mm Hg, depending on the drug, and then declined to less than 30mm Hg within 20 minutes, confirming the results of past research.

Doctors often use IOP-lowering eye drops to prevent those spikes. But, until now, the effect of the drops on that type of IOP has never been tested.

"On the one hand, ophthalmologists use these medications to successfully prevent IOP spikes after laser treatment, so there is a basis for thinking it should work," Dr. Frenkel said. "But, on the other hand, these spikes appear to be volume mediated and the drops just can't overcome that abrupt, robust effect."

In the study, having glaucoma also didn't impact the rate of pressure normalization. But it did make one difference: IOP-lowering drops reduced IOP 3-10 minutes after an injection of pegaptanib for those with glaucoma ( $p=.007$ ).

It's possible that the drops could do the same for the other two AMD drugs, but Dr. Frenkel's team could not study that effect; all of the glaucoma patients who took bevacizumab or ranibizumab also took IOP-lowering medications.

The study was limited, in part, by its retrospective nature, that the number of patients who received treatment before intravitreal injection wasn't the same in each group and the number of patients with glaucoma varied between groups, the researchers acknowledge.

The small sample size may have influenced the finding that the medications work for glaucoma patients, the researchers write, and future study may be needed.

Source: <http://link.reuters.com/wym52r>  
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