should offer this therapy to appropriate patients without regard for visual acuity status.

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Uniocular Drug Trial

Dear Editor:
Realini et al’s article states that uniocular trials of glaucoma medications do not adequately predict second-eye intraocular pressure (IOP) responses to the same medications. In making this statement, the authors propose that uniocular trials are unlikely to be helpful and are unnecessary. Alternatively, they propose that both eyes begin treatment simultaneously and that the response to treatment be assessed separately in each eye.

The problem with this study begins with the statistical analysis of the data. The authors employ linear regression analysis using a Pearson correlation coefficient to draw the conclusion that each subset of patients observed showed no correlation between first-eye IOP response and second-eye IOP response. Reviewing the results from all 52 patients revealed a mean first-eye pretreatment IOP of 22.4 mmHg and a mean second-eye pretreatment IOP of 19.7 mmHg (a difference of 2.7 mmHg). After treatment with a single IOP-lowering agent, the IOP decreased to 16.7 mmHg in the first eye and 16.9 mmHg in the second eye (a difference of only 0.2 mmHg). The starting points are almost equivalent by definition of asymmetrical IOP (difference within 2 mmHg), and the end points are practically identical. This is what might be expected using an identical dosage of medication with the same frequency in each eye. It is known that IOP can vary from moment to moment in each eye during the day, and an IOP difference of ≤2 mmHg is considered normal. The IOP difference of 2.7 mmHg obtained can barely be called asymmetrical. At any time during the same day, the contralateral eye could have been the eye with the higher IOP, prompting first-eye treatment in it. Therefore, the finding is more suggestive of regression to the mean. Moreover, this initial set of data includes patients on β-blockers, which have a documented contralateral IOP-lowering effect.

Reviewing the data for the latanoprost users only, it is expected that these data should prove the lack of a correlating response between the two eyes by eliminating the contralateral IOP-lowering effect. Unfortunately, the data presented more definitively prove the point that the starting points and ending points are practically identical. The Xalatan users start with a mean first-eye pretreatment IOP of 20.4 mmHg and a mean second-eye pretreatment IOP of 18.6 mmHg (a difference of only 1.8 mmHg). This IOP difference is less than the 2 mmHg necessary to call the starting pressures asymmetrical. The mean first-eye and second-eye posttreatment IOPs are 15.2 mmHg and 15.4 mmHg, respectively. Once again, the pretreatment and posttreatment IOPs in both eyes are practically the same. Because the pretreatment IOPs are established at only one time point, it is reasonable to assume that the small variance observed could have resulted in the contralateral eye having the higher pressure at a different time point and receiving treatment first.

The other 2 subsets of patients, primary open-angle glaucoma patients and patients without a history of surgery, did not have their mean IOPs reported in the article. We suspect that a similar pattern would have been revealed in that data.

So, should we discount the utility of the uniocular drug trial when initiating glaucoma therapy and make bilateral simultaneous therapy the standard of care? We believe not. To do so, a baseline IOP would need to be established in both eyes over 2 to 3 visits. This would equate to an increased number of visits for the patient and an increased cost. It would also cause a delay in initiating glaucoma therapy. Based on this line of reasoning, the uniocular drug trial seems to be a good method to assess the effectiveness of a given medication, while not delaying treatment. If the second eye—theoretically, the eye with a lower pressure and less glaucomatous damage—did not respond well to the initial agent, it could be started on a trial of a different IOP-lowering agent. In conclusion, the uniocular drug trial remains a useful clinical tool; however, we believe there are exceptions when it would be appropriate to start drops in both eyes (i.e., cases of equally high pressures in both eyes that have already been documented over time, with bilateral glaucomatous visual field changes). In this situation, the patient could return in 3 to 4 weeks to determine if both eyes adequately responded to treatment.

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References


Author reply

Dear Editor:
We thank Drs Jones et al for their interest in our recent study of the uniocular drug trial.

Jones et al take exception to our use of correlation analysis to describe fellow-eye responses to intraocular pressure (IOP)–lowering therapy. Based upon their comments, they would have preferred that we compare mean IOP reductions between fellow eyes, which they claim fails to reflect an intereye difference.