Reviewer's report

Title: Effects of bimatoprost and latanoprost on ocular hemodynamics in normal tension glaucoma: a randomized trial

Version: 1 Date: 24 November 2004

Reviewer: Josef Flammer

Reviewer's report:

General
Drug studies should, whenever possible, be done by controlled double blind studies. It should be stated in the paper that this was not the case in the present study.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Methods: Please calculate the resistivity index on CDI. This is a very useful parameter.
Statistics: It is not enough to simply compare first with second examination. It would be even more interesting to test whether the different drugs have different influence on the change over time. As the IOP-lowering effect also has an effect on circulation (especially when autoregulation is disturbed) the IOP should be taken into account in a statistical model. This e.g. could be done by using IOP as a covariate.

Results: The term positive control is not very adequate. I would replace this term by putting the name of the drug (dorzolamide). This is also true for the title. You either mention all three drugs or none. You could simply write in the title: The effect of glaucoma drugs on ocular hemodynamics . . .

Discussion: Your wrote: "While both substances do not improve ocular blood flow to a significant degree, they are both suitable for treatment of normal tension glaucoma". In your results you showed that dorzolamide had a better influence on ocular perfusion. Please discuss the usefulness for NTG treatment in a more neutral way.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Your wrote: "An altered blood flow velocity due to vasoconstricting activity of bimatoprost reported from Allemann and colleagues is not detectable in humans by CDI measurements". We agree that in-vitro studies can not automatically be extrapolated to humans, even less to glaucoma patients. Nevertheless the fact that both bimatoprost and latanoprost did not significantly improve ocular circulation in these normal tension glaucoma patients, despite a good IOP-lowering effect would rather point in the direction that the drugs themselves are not neutral. If they were neutral, we would rather expect a significant improvement of circulation.

Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes

Declaration of competing interests:

I declare I have no competing interests.