Author's response to reviews

Title: Comparison of Localized Retinal Nerve Fiber Layer Defects in Highly Myopic, Myopic, and Non-myopic Patients with Normal Tension Glaucoma

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Author's response to reviews: see over
Reviewer’s report

Title: Comparison of Localized Retinal Nerve Fiber Layer Defects in Highly Myopic, Myopic, and Non-myopic Patients with Normal Tension Glaucoma

Version: 3 Date: 20 August 2013
Reviewer: Jean-Claude Mwanza

Reviewer’s report:

1. The papers still need editorial assistance with regard to language.

   We got the proof reading by special company.


   done

   Also I suggest that the conclusion be rephrased as follows: “Among subjects with NTG, localized RNFL defects are wider and closer to the fovea in eyes with high myopia than those with low to moderate myopia and emmetropia.”

   Thank you for your kindness. I corrected that according to your recommendation.

3. Method section, paragraph 3. The definition of localized RNFL defects is not clear, confusing. The expression "driving direction of RNFL" is uncommon and even unheard of.

   Actually, most of ophthalmologists may know the localized RNFL defect. Recently, in some article, such as IOVS or ophthalmology, the definition of localized RNFL defect was phrased simply like as wedge shaped RNFL defect. So we corrected that as below.

   “We defined the localized RNFL defect as a wedged shaped RNF defect encroaching upon Optic disc.”

   The last sentence does not seem to fit.
   I agree with your opinion. I omit that sentence.

4. Discussion: please add as limitation #4 the reason why the different groups were not age-matched and how it may have affected the results.

   We agree with your opinion. We added it as below.

   “Fourth, the different groups were not age-matched and we don’t know how it may have affected the results.”

5. Discussion: In relation to the fact that the size of RNFL defect increases with the degree of myopia tends to suggest that this is due to the degree of the RNFL stretching as a result of eye elongation. Then the question becomes: is the defect really glaucoma-related only of the result of the the combined effect of both glaucoma and eye elongation? Comparing the results in the manuscript with those
obtained after controlling of the effect of axial length for instance would have provided a definitive answer to whether the stretching plays a role or not. In other words, it is possible that the RNFL defects are comparable in size between subjects with same degree of glaucoma severity, but they are magnified relative to axial length. Please discuss this thoroughly.

We will address this query in two parts:

1. The magnification effect due to refractive error and axial length is not debatable. However, this magnification effect does not affect the ratio value of the angle. Because it increases at the same rate, it cannot be widened by more than 360 degrees by the magnification effect. We noted this fact in the limitation section and cited the appropriate studies. If the magnification effect is locally irregular, however, the effect may be different from that mentioned above. Because we cannot identify the exact magnification effect, these points were addressed in the limitation section:

In fact, the measured arterio-venous ratio in the retina did not change with refractive error.[25, 26] However, this does not apply to the cases in which there was irregular magnification, thus we cannot definitely determine whether this impacted our results.

2. Additionally, RNFL defects that occur with longer axial lengths can be further enlarged. As the axial length increases, the receptive field which is responsible for one axon is widened, and therefore the RNFL defect area may be widened. However, this concept is difficult to demonstrate in a cross-sectional study design. A longitudinal study would be helpful to better illustrate this process.

6. The other issues were addressed in a satisfactory manner.

Thank you for your kindness.

Level of interest: An article of importance in its field
Quality of written English: Needs some language corrections before being published
Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests: I declare that I have no competing interests.