Reviewer’s report

Title: Retinal blood flow is increased in type 1 diabetes mellitus patients with advanced stages of retinopathy

Version: 0 Date: 16 Jan 2016

Reviewer: Delia DeBuc

Reviewer's report:

The paper reported results on blood flood measurements in T1DM patients and healthy controls as well as in T1DM/T2DM subjects before and after laser surgery. The paper is well structured and organized. The field of research is a very contradictory one based on the variability of technologies used to measure BF. I do believe the work of the authors merits publication once all minor revisions are completed.

I have the following suggestions/comments that could help the authors to improve the paper:

- Some acronyms are not clearly explained: ICD, MRI, VU -- please add the corresponding labels

- The analysis performed for the panretinal laser photocoagulation included both T1DM and T2DM subjects. Based on the lack of significance observed for the BF measurements before and after the procedure and that mean results were generated with all diabetic subjects with different type of diabetes in the same dataset, I do recommend to create two subgroups and run the analysis (basically calculate the mean separated) again. It is clear the small amount of eyes in the group is not good enough for a decent statistical analysis but subtle changes may be revealed. I noticed in about 4 eyes the BF slightly increased after surgery while for 3 decreased. For example, the line/trend plotted in Figure 3 for the mean BF result should be generated for the T1 and T2 groups. I will also recommend to label/color the lines in Figure 3 based on type of diabetes.

- Figure 1 should identify the nasal and temporal locations. The images are inlets of a complete image of the retina. The figure should be better designed for easy interpretation mainly for readers not familiar with the software or device used in the study.
- Table 1 is misleading: type of diabetes should be a category to include in the demographics info.

- Some diabetic patients have hypertension. This condition really affects the BF measurements and confound the results. Therefore, the authors should consider separating such patients from the non-hypertensive diabetics.

**Are the methods appropriate and well described?**

If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**

If not, please specify which controls are required in your comments to the authors.

No

**Are the conclusions drawn adequately supported by the data shown?**

If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**

If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**

Please indicate the quality of language in the manuscript:

Acceptable

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