Author’s response to reviews

Title: Agreement Study between Color and IR Retinal Images Based on Retinal Vasculature Morphological Parameters

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Version: 1 Date: 09 Nov 2018

Author’s response to reviews:

Dear editor

Journal of BMC Ophthalmology

Sub: Revision of the manuscript, “Agreement Study between Color and IR Retinal Images Based on Retinal Vasculature Morphological Parameters”

We appreciate all the insightful comments from the reviewers and have revised the manuscript. We have addressed each comment and give below the list of the comments and our response.

Thank you,

Aqsa Ajaz

(on behalf of the co-authors)
Recommendations:

1. The sample size of the study is relatively low so your result may not precise. The solution is that you should recalculate the sample size a priori.

Our Response:

Thank you very much for your insightful comment. We agree with your assessment that the sample size of the study is relatively small which could affect the results, but this is the first study of its kind and we believe that its publication will lead to the target of investigating people with opacity. In response to your feedback, we have now calculated the power of the study and have also mentioned the number of participants being a limitation of this study.

2. Please keep provide the baseline characteristics for retinal vascular parameters,

Our Response:

In the revised manuscript, we have clarified that this is a baseline study where we have investigated the agreement between color fundus and IR images and have provided the details of the participants. All participants were volunteers and self-declared themselves as being healthy, non-smokers, moderately active and with no history of diabetes, hypertension or retinopathy.

3. Limit of the agreements (LOA) of the results are relatively high. It may lower the worth of the results. Please discuss this issue and what is your explanation?

Our Response:

We agree that the Limits of agreement of results are relatively high. This could be due to the small sample size used in this study that made the confidence interval (CI) appear larger and
limits of agreement (LOA) for results were found to be relatively high. We have now discussed this in the revised manuscript as being a limitation of this study.

4. Acceptable limits must be defined a priori so please explain your ways and discuss them.

Our Response:

This research study has explored the potential of considering the IR and RGB images for retinal vasculature analysis. Thus the acceptable limits were not known priori but determined experimentally.

5. You may delete the 95% CI for the LOA column and secondary p-value (** p-value) on the table 1 and table 2 because Regression Analysis is not meaningful for such a evaluation of a new imaging method.

Our Response:

The 95% CI for LOA column in table 1 and 2 has now been deleted in the revised manuscript. However, **p value from regression analysis has been retained and used to interpret the presence of proportional bias. For the statistical analysis we have referenced a paper which reports the comparison of different vessel caliber measurement software’s [1] and have used regression analysis to explain the results.

6. Regression Lines of some figures (Figure 4; B and C) and (Figure 5; A and B) are not horizontal. This shows that bias is not constant and the agreement might not be good. Please discuss this issue.
Our Response:

We thank your for your feedback, and agree that one limitation of this study is that the regression lines for few retinal vasculature parameters i.e. average branching angle (ABA, total angle count (TAC) and vessel calibre were not horizontal affecting the power of the agreement study. We have now mentioned this limitation in the discussion section of the revised manuscript.

7. In conclusion you say that ‘This study has shown that there is an agreement between Color and IR images based on retinal vessel features. ‘But you do not mention the power of the agreement, you should emphasize the power of agreement as poor, moderate, good, substantial.

Our Response:

We thank you for highlighting concern regarding the power of agreement. In the revised manuscript, e have described the statistical analysis and clarified in the Abstract, discussion and conclusion sections that the agreement between color and IR images was Fair for the different vasculature parameters.

Reference List