Reviewer’s report

Title: Defective angles of localized retinal nerve fiber layer reflect the severity of visual field defect- a cross-sectional analysis

Version: 1 Date: 19 Dec 2019

Reviewer: Amal Elbendary

Reviewer's report:

Comments to author

Introduction

First paragraph lacks reference.

RNFL defect is commonly used for detecting early glaucomatous eyes. This statement dates to at least 20 years earlier before the advent of OCT. Modify it accordingly, adding a suitable reference. The same applies to this statement that dates back to 2003, "In recent years, Woo et al has established a convenient quantitative method….. "

Brief definition of angle α and β should be added to the end of first paragraph before coming across validation of their values in the second paragraph

Methods:

are myopic eyes are included or excluded?

the aim of the work is to correlate RNFL defects to VF analysis. Nonetheless, basic VF information is lacking. Since all patients represent mild stages of glaucoma, indicate the VF minimal criteria for glaucoma diagnosis in inclusion criteria. Grading of VF severity should be clear, adopting any of the staging systems criteria e.g Hodapp E, Parrish RKII, Anderson DR. Clinical Decisions in Glaucoma.

This article adopts the same angle measurement techniques of woo etal,2003. It can't be considered the authors original work. Cite the above- mentioned reference in methodology section
Results

Baseline data: add mean refraction of study sample,

Name of statistical test is restricted to footnotes of the corresponding table

How can you explain the high prevalence of central scotoma (76%) in a sample of mild glaucomatous eyes? According to the famous HPA classification of glaucoma, all points in the central 5 degrees must have sensitivity of at least 15dB. The definition of central scotoma as 10 central degrees of 30-2 program in the current study miscalculate the outcoming values

Lack of correlation between angle α and central scotoma may be explained by the fact that central 10-2 VF program is essential to confirm presence or absence of central scotoma. If medical records lack central 10-2 program, then you can't conclude lack of correlation. Redefine central scotoma by restricting deviation within the central 5 degrees of 30-2 were macular NFL thickness was calculated? if possible, correlate these values to RNFL angle α

Statistical relations in table 2 are too simple and better expressed as text

Table 4 appears heterogenous. The first row in table 4 is mere repetition of table 3 and had to be deleted. This table should indicate only correlation between OCT & VF parameters. The same applies to text where the explanation of table 3 had been repeated twice in page 4 (140-142, 147-148)

Former reviewer comments were not addressed properly within the revised manuscript. Authors replied to some inquiries, yet they didn't modify, highlight or show the corresponding changes in text. All modifications and responses to reviewers' recommendations should be added, implemented and highlighted within the revised manuscript e.g

-Issue of glaucoma subgroup analysis (POAG vs NTG) and corresponding β values

-Grading of VF severity and corresponding β values

-No of RNFL defects and corresponding β values

-Correlating Superior and inferior RNFL defects to visual field indices

-Correlating superior and inferior angular measurements of RNFLD with the superior temporal and inferior temporal RNFL thickness of the OCT.

-The control group is crucial to validate your methods. Normal people were found to have split RNFL defects characterized by lesser width than glaucoma patients, lacking the characteristic wedge shape. Quantification of these data in control subjects is beneficial to understand or propose whether certain angle values are critical, risk factors for future glaucoma development
Discussion

-Avoid copying results section while discussing the outcome, confusing the readers with p values, No of tables.

-Avoid writing methodology technique while discussing your results (line 211-215). This part should be included in methodology section. On discussion, you need to point out that the subjectivity is one of the limitation in the study

-You can't conclude that your method has a stronger correlation with visual field parameters than OCT parameters based on evaluation of single parameters (sectorial RNFL). The current study and Previous studies showed that average RNFL correlated with MD, PSD and VFI (Discriminating ability of spectral domain optical coherence tomography in different stages of glaucoma, SJO,2012).

-Line 166-168 page 8 : the sentence ( with unanimous ) is poorly constructed

Conclusion results can't be generalized to all glaucoma stages since all eyes in this sample were categorized as mild stage. Limit your conclusion to early stages of glaucoma

Avoid citation of any authors in conclusion section

Since RNFL defects were not graded according to severity, the conclusion should be modified. It is more appropriate to conclude that the quantification of localized RNFL defects is potentially useful for glaucoma diagnosis and that the width of RNFL defects was correlated to visual field indices in early stages.

Limitations

The main limitation is: Low inclusion rates over long period of time (5years), Subjective techniques in the era of quantitative imaging analysis limit the applicability of this study

Low inclusion rate possibly reflects the well-known low prevalence rate of localized RNFL defects in glaucoma (20%), although it has high specificity being restricted to glaucomatous eyes, yet it lacks sensitivity.

Language needs editing and attention not to implement personal expressions in scientific writing (we were not surprised …ect
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

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:

Not suitable for publication unless extensively edited

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