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CORRESPONDENCE

Effect of surgical intraocular pressure lowering on retinal structures—nerve fibre layer, foveal avascular zone, peripapillary and macular vessel density: 1 year results

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To the Editor:

We recently read a published paper by Ch'ng et al. [1] entitled "Effect of surgical intraocular pressure lowering on retinal structures nerve fibre layer, foveal avascular zone, peripapillary and macular vessel density: 1 year results". In this study the above-mentioned authors evaluated the effect of surgical intraocular pressure (IOP) lowering on peripapillary retinal nerve fibre layer thickness (RNFL), fovea avascular zone (FAZ), peripapillary and macular vessel density (VD) in glaucoma using optical coherence tomography angiography (OCT-A). In this regard, they performed serial OCT-A scans in 40 eyes with open-angle glaucoma before glaucoma surgery, and at 1-month, 3-month, 6-month and 12-month post-operatively and assessed IOP, RNFL, FAZ and VD at the same times. Because they evaluated the IOP, RNFL, FAZ and VD in the same patients in five time-points of assessment, therefore their comparisons are in category of dependent comparisons. As stated in the statistical analysis section, Table 2 and Fig. 3 of the article, the authors used one-way analysis of variance (ANOVA) and Kruskal Wallis tests to compare means of IOP, RNFL, FAZ and VD before glaucoma surgery, at 1-month, 3-month, 6-month and 12-month post-operatively. They also used Post-hoc tests for pairwise comparisons of measurements between the visits. The authors found that macular vessel density shows a "delayed response" to surgical IOP reduction; filtering surgery can restore near-normal macular vessel densities and filtering surgery causes a significant transient increase in FAZ area, which subsequently decreases to normal values within 12 months after surgery. One way ANOVA and Kruskal Wallis tests are used to determine statistically significant differences of continuous variable with parametric and non-parametric distribution between two or more independent groups, respectively [2]. Therefore, after investigation the normality of numerical data, the authors must use Repeated-Measures ANOVA or Friedman test and paired *t*-test or Wilcoxon signed-rank test to compare the means of IOP, RNFL, FAZ and VD between five and two time-points of measurement (i.e., before glaucoma surgery, 1-month, 3-month, 6-month and 12-month post-operatively), respectively.

Taken together, analysis of differences of IOP, RNFL, FAZ and VD between five and two time points with appropriate statistical tests is strongly suggested to improve the reliability of results of this valuable research.

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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