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Choroidal thickness changes in post-COVID-19 cases

Mudanças de espessura da coroide nos casos após COVID-19

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Dear Editor,

We have read and reviewed the article entitled "Choroidal thickness changes in post-COVID-19 cases" by Konuk et al. with great interest[1]. The authors evaluated the effects of the coronavirus disease-2019 (COVID-19) on the choroidal thickness (CT) using enhanced depth-imaging optical coherence tomography (OCT).

The authors reported that post-COVID-19 cases exhibited a significantly thicker choroid when compared to healthy subjects at the subfovea, 500-μm temporal to the fovea, and 500- and 1000-μm nasal to the fovea ($p=0.011$, $p=0.043$, $p=0.009$, and $p=0.019$, respectively). They found that CT was increased in post-COVID-19 patients, possibly in relation with inflammation associated with the pathogenesis of COVID-19.

We express our gratitude to the authors for this valuable study. However, we would like to request Konuk et al. to clarify some important points that may affect CT measurements and the results of the present study.

The choroid is one of the most vascularized regions of the human body. Therefore, various local and systemic physiologic/pathologic conditions and environmental factors affect CT. The literature expounds that age, sex, systemic/local diseases and their treatments, use of medicine, intraocular pressure, refractive error, and several other factors affect CT[2]. In addition, body mass index, menstrual cycle, and systemic blood pressure have a remarkable effect on CT. Moreover, CT exhibited shows considerable diurnal variation and a choroid can increase its thickness by 50% in an hour and by 4-times in a few days[3]. Furthermore, consuming food and caffeinated and/or non-caffeinated beverages and even exercising before OCT measurements can induce significant changes in CT[2]. We would like to ask authors whether all these factors were assessed during data collection and extraction in their study.

REFERENCES

1. Konuk SG, Kilic R, Turkyilmaz B, Turkoglu E. Choroidal thickness changes in post-COVID-19 cases. Arq Bras Oftalmol [Internet]. 2022 [2022 may 24]; Mar. ahead of print. Available from: SciELO - Brasil - Choroidal thickness changes in post-COVID-19 cases Choroidal thickness changes in post-COVID-19 cases
2. Nickla DL, Wallman J. The multifunctional choroid. Prog Retin Eye Res [Internet]. 2010 [cited 2021 jun 24]:29(2):144-68. Available from: THE MULTIFUNCTIONAL CHOROID - PMC (nih.gov)
3. Tan KA, Gupta P, Agarwal A, Chhablani J, Cheng CY, Keane PA, et al. State of science: choroidal thickness and systemic health. Surv Ophthalmol. 2016:61(5):566-81.

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Reply: Choroidal thickness changes in post-COVID-19 cases

Resposta: Mudanças de espessura da coroide nos casos após COVID-19

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Dear Editor,

First, we would like to thank the authors for their interest in our study.

As mentioned, the choroid is one of the most vascularized regions of the human body. Therefore, various local and systemic physiologic/pathologic conditions and environmental factors affect the choroidal thickness[1]. We reported in our study that there was no significant difference between the study groups in terms of age and gender (p=0.063 and =0.51, respectively)[2]. We evaluated the study files and added the missing portions of the results. No participant showed any systemic/local disease without COVID-19 disease in the study. There was a history of anticoagulant and antiviral drug use in the Covid group. However, to the best of our knowledge, no study has yet evaluated the effect of these agents on the choroidal thickness.

Comparison of the intraocular pressure and spherical equivalent between the groups revealed no statistically significant difference (p=0.15 and =0.21, respectively). Our measurements were made between 10 and 12 AM to reduce the effects of diurnal variation on the choroidal thickness.

However, the participants were not questioned about their body mass index, menstrual cycle, caffeine use, and food consumption in our study, which can be considered as a limitation of the study. We thank the authors for pointing out the deficiency in the article and their valuable contribution.

REFERENCES

1. Nickla DL, Wallman J. The multifunctional choroid. Prog Retin Eye Res [Internet]. 2010 [cited 2021 jun 24]:29(2):144-68. Available from: THE MULTIFUNCTIONAL CHOROID - PMC (nih.gov)
2. Konuk SG, Kilic R, Turkyilmaz B, Turkoglu E. Choroidal thickness changes in post-COVID-19 cases. Arq Bras Oftalmol [Internet]. 2022 [2022 may 24]; Mar. ahead of print. Available from: SciELO - Brasil - Choroidal thickness changes in post-COVID-19 cases Choroidal thickness changes in post-COVID-19 cases

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