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## Reply to Comment on: Optical coherence tomography features in post-COVID-19 pneumonia patients: A pilot study



WE THANK THE AUTHORS FOR THEIR INTEREST IN OUR article<sup>1</sup> and we are grateful we have the opportunity to address their concerns.

Cordeiro Sousa and colleagues question whether the recovery time from a COVID-19 infection and the mild hypoxemia influenced the optical coherence tomography angiography (OCTA) outcomes. The authors suggested a comparison between patients with earlier vs later assessments. In addition, the authors suggest that it would be interesting to include in Table 1 the baseline saturation of peripheral oxygen values in both groups.

In our study, we found the recovery time had an average of  $4.1 \pm 1.3$  months, so we decided to standardize the OCTA measurement by performing it in all patients 6 months after full recovery from COVID-19 infection.

Moreover, the aim of our study did not focus on the correlation between oxygen saturation and OCTA parameters. We enrolled the patients who, during hospitalization, showed a saturation of peripheral oxygen of 94% or greater, not requiring supplemental oxygen, and so we avoided the influence of oxygen saturation on OCTA results.

Cordeiro Sousa and colleagues recommended to exclude the foveal avascular zone area from the vessel density (VD) analysis, and also to include the “perifovea” area instead of the “whole image.” The AngioAnalytic software of the Optovue Angiovue system, used in our study, calculated VD by automatically excluding the foveal avascular zone area<sup>2</sup> to not determine any bias.

However, the scanning area used was  $6 \times 6$  mm, centered on the fovea, allowed an overall evaluation of the whole macular region and we selected parafoveal area because it represents the highest vascularized region in the retina with highest density of cones.<sup>3</sup>

Moreover, because a minimum of six or above for scan quality index and a signal strength index (SSI) of greater than 70 have been suggested as the threshold for acceptable OCTA image quality,<sup>3</sup> we included only scans with good image quality in our study.

Regarding the OCT and OCTA measurements, the relatively large deviation standard values were not due to the presence of outliers; rather, these parameters presented similar deviation standard in two study groups and this did not affect the statistical significance in our results.

Last, all OCTA and OCT comparisons were performed using data from the right eye only, because both eyes of patients presented unremarkable ocular examination on the slit-lamp and fundus examination.

In response to Wylegała and associates regarding the effects of SSI on the OCTA measurements, there was no need to correlate the SSI with VD, since there were no significant variations in SSI of the patient and control groups, this is confirmed by the small standard deviation, that could influence the VD.

Moreover, Wylegała and associates stated that, in another study,<sup>4</sup> complement-mediated thrombotic microangiopathy was associated with thrombotic changes in post-COVID-19 patients.

The patients who we enrolled in our study had a normal fundus examination to identify early retinal vascular changes by OCTA, even in absence of evident microvascular impairment.

Finally, the analysis of different results from other studies such that conducted by Szkodny and coworkers<sup>5</sup> should take into account several bias, such as the concomitant diseases in patients enrolled.

GILDA CENNAMO

*Department of Public Health, University of Naples “Federico II”, Naples, Italy*

MICHELE REIBALDI

*Department of Surgical Sciences, University of Torino, Torino, Italy*

DANIELA MONTORIO, LUCA D'ANDREA

*Department of Neurosciences, Reproductive Sciences and Dentistry, University of Naples “Federico II”, Naples, Italy*

MATTEO FALLICO

*Department of Ophthalmology, University of Catania, Catania, Italy*

MARIA TRIASSI

*Department of Public Health, University of Naples “Federico II”, Naples, Italy*

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