

Micro vascular Damage in Patients with Long-Term COVID-19: Usefulness of Nail fold Video capillaroscopy

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Background: The COVID-19 is a multisystem disease due to in part the vascular endothelium injury it causes. Lasting effects and long-term sequelae could persist after the infection, affecting patients' (pts) return to work and quality-of-life. Some studies suggest that Long-COVID 19 symptoms may be due to persistent endothelial dysfunction. The aim of our study was to assess microvasculature damage in long-term COVID-19 pts. by means of Nail fold-Video capillaroscopy (NVC) that is nowadays considered one of the best diagnostic techniques of non-invasive imaging to study the microcirculation in vivo.

Methods: We examined 32 pts. (21F and 11M), aged 56.8 years (range 22-85) with recent diagnosis of COVID-19 and two successive or pharyngeal swabs resulted negative for the SARS-CoV-2 genome, hospitalized in our ward for other acute pathologies or related to our NVC clinic. The control group

consisted of 30 healthy subjects (hs) without previous or current SARS-CoV-2 infection with overlapping demographic characteristics. The evaluation of the microcirculation was carried out with a VideoCap3.0 (DS-Medica), equipped with 200x optics.

Results: Long-term COVID-19 pts., compared to control subjects, showed a higher prevalence of meandering capillaries, enlarged capillaries, loss of capillaries, hemosiderin deposits expression of micro-haemorrhages and micro-thrombosis, sludge flow and per capillary edema.

Conclusions: These data suggest that long-term COVID-19 pts present greater micro vascular abnormalities at NVC compared to hs, confirming the observations of our previous study. However, further studies with larger case series are needed to assess the clinical relevance of NVC in long-term COVID-19.