

Cornea

Letter to the Editor:"Ocular Surface Impairment After Coronavirus Disease 2019: A Cohort Study" --Manuscript Draft--

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1 Letter to the Editor

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We read with interest the article of April 2021 issue of Gambini et al.¹ in which they study a cohort to evaluate the presence of objective signs and subjective symptoms of dry eye disease (DED) after coronavirus disease 2019 (COVID) patients group versus a control one. The authors have very accurately described a series of signs and symptoms such as tear break-up time (TBUT), Schirmer, ocular surface disease index (OSDI) or osmolarity. The results achieved demonstrated a deep and complete research that answers a very important clinical question today. However, from this authors team, we would like to make some observations. If we focus in the method section, the manuscript included two patients' group, post-COVID-19, and control group. Exclusion criteria include such as: previous ocular discomfort or DED diagnosed history, eyelid malposition or previous refractive surgery. Nevertheless, we have checked in Table 1, which describes the sample descriptive, that in the Post-COVID-19 group, 26.6% of the subjects were diabetic (without specifying the diabetes type) while in the control group only 6 % (3 subjects) were with this condition. This implied a statistically significant difference ($P < 0.01$), hence chronic and systemic diseases were not within the exclusion criteria list for the sample used.

Diabetes mellitus (DM) is considered one of the main causes of dry eye syndrome (DES)². De Freitas et al.³ achieved that DM have more DES sign and symptoms than healthy patients. The prevalence described was 38.3%. Regarding DES and DM link, Cousen and colleagues⁴ showed that diabetic neuropathy reduced corneal sensation and tear production. The presence of glucose and advanced glycation waste product is higher con DM patient tears. Therefore, tear film hyperosmolarity increase and could alter corneal epithelium disorders related to DES. This point was evident on Gambini et al.¹ work, post-COVID-19 group achieved 312.19 ± 16.98 mOsm/L and control group 301.6 ± 12.82 mOsm/L ($P < 0.05$). In addition, another potential bias could be the age. The mean age in post-COVID-19 group was 56.2 ± 14.2 years while the control group achieved 49.8 ± 12.2 years ($P = 0.01$). In elderly, tear production, caliciform cells, corneal sensitivity, eyelid abnormalities are reduced or alter.⁵ This situation was worse in elderly woman

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51 due to hormones situation.⁶ Hence, all these issue alter the quality and frequency of blinking and
52 implies a tear film break and evaporation.

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54 Finally, the exclusion of diabetic patients and the inclusion of patients with similar ages could
55 have determined the true relationship between dry eye and post-COVID patients. This team of
56 authors consider that these comments can be extended to the scientific community since the
57 homogeneity between study groups is decisive in the results of the study.

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