Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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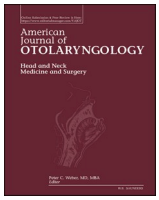

Chemosensory dysfunction in COVID-19: Is there really a correlation with viral load?

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Dear Editor,

We read with great interest the article by Jain et al. [1] which analyzed the correlations between viral load (VL) and the presence of olfactory and taste dysfunctions (OTD) in COVID-19 patients. This is one of the very few articles published on this topic so far [2,3]. Based on the results obtained, the authors found a significantly higher viral load in nasopharyngeal swab in patients with chemosensory dysfunction. As pointed out by the authors, this finding may have important public health implications as patients with higher viral loads, and therefore more contagious, could be identified on the basis of the presence of olfactory or gustatory dysfunction.

However, the results of this study should be interpreted with caution due to a few but important biases.

The most important methodological limitation is the lack of use of psychophysical evaluations of olfactory and gustatory functions. Many studies reported significant inconsistencies between self-reported and objective olfactory evaluations [4]. In recent months, we have gained experience regarding the objective assessment of olfactory function in COVID-19 patients [5–7]. We recently performed viral load determination and psychophysical olfactory evaluation in 34 COVID-19 patients. Based on the scores obtained at the Sniffin-Sticks' test, 18 patients presented anosmia, 6 hyposmia while in 13 cases the olfactory function was normal. The median olfactory score was 9.5 (IQR 5–13). The cycle threshold (CT) value on the PCR assay on the nasopharyngeal swab was determined for all patients (median 29.95, IQR 26.27–32.39). The correlations between CT and olfactory scores were analyzed with Pearson's correlation coefficient. Statistical analysis revealed a weak ($r_s = 0.025$) and not-significant ($p = 0.887$) correlation between the two variables. Our results, in line with those found by Cho et al. [2], seem to confirm that the severity of the olfactory disorder (OD) is related to individual susceptibility rather than to viral load and activity.

A second inconsistency that will need to be the subject of further research is linked to the fact that the viral load was higher in patients with chemosensory dysfunction. Most of the authors reported a higher frequency of olfactory and gustatory disturbances in patients with mild COVID-19 while such dysfunctions are uncommon in severe forms of the disease [8–10]. It is true that the prognostic value of viral load is still debated, but it seems difficult to think that patients who presented a symptom commonly associated with mild forms of COVID-19 concurrently have a higher viral load.

At present, clinical parameters that are correlated with the severity and duration of the OTD have not yet been identified. The latest evidence seems to correlate OD in COVID-19 patients to an inflammatory reaction at the level of the olfactory epithelium [11,12]. If particularly intense and prolonged, this inflammation can lead to apoptosis of the basal cells compromising the regenerative capacity of the epithelium [12]. We are now studying correlation between the severity of OD, VL and indices of systemic inflammation in order to detect clinical factors that may indicate which patients should start specific therapy to prevent the chronicity of the OD.

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None declared.

Declaration of competing interest

None declared.

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