

## LETTER TO THE EDITOR

# Mouthwashes in COVID-19: Benefit or harm to the oral microbiome?

Sir,

The human oral microbiome (HOM) is the second largest and most complex microbial community after that of the gut in the human body (Caselli et al., 2018). Dysbiosis of the HOM is often associated with various local and systemic disease conditions (Baghban et al., 2020). The microbial component of a eubiotic HOM can inhibit pathogen colonization by competitive exclusion and/or by enhancing the immune response (Soffritti et al., 2021).

Respiratory viruses, such as SARS-CoV-2 spread by aerosol transmission encounter the oral microbiota, are modulated in their ability to establish infection and are capable of inducing changes in the resident microbiota (Soffritti et al., 2021). Faced with the potential risk of virus transmission in dental offices international health authorities have suggested the use of antiseptic mouth rinses as an infection control measure prior to dental procedures (Volgenant et al., 2021). However, there are currently few robust studies on the effect of mouth rinses on SARS-CoV-2 viral load. The first report on the efficacy of mouth rinses in reducing SARS-CoV-2 viral load in saliva was published in Korea (Yoon et al., 2020). Subsequently, (Martínez Lamas et al., 2020) in a case series of four patients suggested that mouthwash with iodopovidone could reduce SARS-CoV-2 viral load in saliva in patients with higher viral loads. Despite these results, further controlled clinical studies with larger populations confirming its efficacy are still recommended (Eduardo et al., 2021).

Although recent findings have been able to demonstrate bacterial taxonomic changes at both the individual and population level, only the tip of an iceberg has been revealed regarding the complexity of host-microbiota interactions (Freire et al., 2021). Thus, so far, there are no studies available that measure the impact of the use of mouthwashes on oral microbiomes. The use of these antiseptics for antiviral purposes that have not been reliably demonstrated could be turning them into disruptors of the oral microbiological balance, therefore, they could not be recommended without knowing their real implications. Likewise, if studies in these areas of research are intensified, it will probably be possible to implement the signatures of the host microbiome as a clinical timeline capable of indicating with certainty not only a desired therapeutic effect but also a harmless one for the microbial balance.

## CONFLICT OF INTEREST

No conflict of interest exists.

## AUTHOR CONTRIBUTIONS

**Pablo Alejandro Millones Gómez:** Conceptualization; investigation; visualization; writing—original draft; writing—review and editing.

## PEER REVIEW

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