LETTER TO THE EDITOR

Open questions about povidone–iodine based preventive measures. Comment to Martínez Lamas et al

The findings of Martínez Lamas et al. rise urgent questions which should become subject to further research.

First, antiseptic rinse and gargle with oxidative agents is suggested as a preprocedural measure for controlling cross infection during dental practice (Peng et al., 2020) and may be of special importance ahead of aerosol generating procedures that cannot be replaced by alternatives. Whereas in vitro experiments showed quick inactivation of SARS-CoV-2 by povidone–iodine (PVP-I) mouthwash or throat spray within 30 s (Anderson et al., 2020), salivary viral load showed no evident trend of reduction 5 min after a rinse with 15 ml of 1% PVP-I for 1 min (Martínez Lamas et al., 2020).

This is even more surprising since the simple procedure of gargling and spitting out may reduce viral load (Cimolai, 2020), at least for a short time. If the maximal reduction of salivary viral load occurs after two or three hours, this would have unfavourable consequences for the use of PVP-I in dental practice. However, one may ask whether the viral load detected in saliva 5 min after PVP-I rinse was alive and potentially infectious, or simply RNA from inactivated SARS-CoV-2? It would be important to repeat these experiments employing virus culture from saliva in order to examine potential infectivity.

Second, it is surprising that the effect of PVP-I persists so long (>3 hr). One may suppose that viral load will recover quickly after rinsing, since new saliva is produced and viral shedding from infected mucosa and possibly salivary glands goes on. The role of salivary glands as a potential source of viral shedding is still debated (Da Silva Pedrosa, 2020). Thus, it would be important to examine the underlying mechanisms for the apparent long-lasting effectiveness of PVP-I, especially since water-soluble PVP-I has a short contact time with the oropharyngeal mucosa (for nasal mucosa: see Liang et al., 2020) and no “depot effect” by long-lasting adhesion to mucosal surfaces like chlorhexidine or carrageenan.

Third, since the nasal epithelium is supposed to be the primary port of entry for the virus in most cases, administration of PVP-I into the nose is considered as local chemoprophylaxis and subject of a few registered trials. It would be helpful to repeat experiments like those of Martínez Lamas et al. in the nasal tract, that is, to measure the viral load in nasal swabs at different times following nasal administration of PVP-I, but not only by PCR but also by virus culture to be able to detect infectious virus. This may help to optimize the timing of nasal PVP-I administration in relation to potential risky exposures and the method of application (e.g., nose drops, spray, nasal douche). Moreover, it was hypothesized that administration of local antiseptics into the nasal tract may be helpful in the early treatment of infected individuals in order to reduce local viral load and prevent the expansion of the nasal/nasopharyngeal infection downward in the airways (Liang et al., 2020), thereby reducing viral spread into the lungs and risk of pneumonia.

CONFLICT OF INTEREST
None to declare.

PEER REVIEW
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