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Letter to the Editor

Coronavirus pandemic: is H₂O₂ mouthwash going to overcome the chlorhexidine in dental practices?

Dental biofilm (plaque) control always has been one of the greatest challenges among dentistry practitioners all over the world. Widely known as primary etiology factor of many oral disorders like dental caries and periodontal diseases, its control is one of the most important conditions for any mouth treatment to be successful. Nevertheless, worldwide dentistry might be facing a much more threatening enemy: the new SARS-CoV-2, the causing agent of one of the greatest pandemics of history – the Covid-19. Besides killing hundreds of thousands of people and affecting the economy in almost all countries of the globe in a way never seen since 1929, the Covid-19 caused an even stronger impact in Dentistry. The inevitable contact with our patient’s saliva (already described as a virus containing fluid) allied to the aerosols producing nature of many procedures might increase the risk of transmission of the virus in dental offices.

As if it was not enough, recent studies show that two entirely different diseases like SARS-CoV-2 infection (viral) and gingivitis (bacterial) might lead to similar problems in human body: increased levels of IL-6 (interleukin), an inflammatory mediator protein that is elevated in gum disease and can be related to a greater risk of developing life threatening respiratory problems. COVID-19 patients with higher levels of IL-6 are more likely to need a ventilator to breathe [1]. Therefore, preventing gum diseases may also lead to a more mild respiratory infection.

Additionally, both dental biofilm and SARS-CoV-2 may share a common enemy: mouthwashes. Widely used to help controlling diseases such as caries and gingivitis, it is possible to assume these disinfectant solutions could temporally reduce the virus count inside the oral cavity. Therefore, mouth washing the patients before dental care sections could also reduce the chance of contamination inside the offices. These assumptions lead to one main question: which oral antiseptic solution should be used?

It is well described that Chlorhexidine (CHX) has a broad-spectrum antimicrobial effect, decreasing the formation of dental biofilm and clinically improving bacteria related diseases like gingivitis and periodontitis [2]. However, its effectiveness against viral infections lacks evidence. On the other hand, hydrogen peroxide (H₂O₂) once preferred by clinicians only in certain conditions like necrotizing periodontal diseases, shows encouraging results regarding inactivation of the SARS-CoV-2 in respirators and inanimate surfaces in general due the virus sensitivity of oxidation [3–5].

Therefore, despite the current absence of papers researching H₂O₂ mouthwashes specifically over the new coronavirus, the efficacy of this agent against the virus in oral mucosa can be reasonably hypothesized. This assumption combined with the lack of side effects in short period use are enough for us to state a recommendation to use a 1% to 1.5% H₂O₂ mouthwash during one minute for every patient to come to our offices prior dental care section.

However, despite of also showing antibacterial effects, H₂O₂ solutions should not replace other mouthwashes commonly prescribed for other purposes, such as dental biofilm control. Long period use of H₂O₂ mouthwashes at home should not be recommended due its current lack of evidence in reducing any of the Covid-19 symptoms or preventing the virus to spread to the lower respiratory tract. Moreover, despite the safety of this substances in short period, their long-term use might have co-carcinogenic effects [6]. Furthermore, the main role in controlling the new coronavirus infection inside dental offices should not be played by any type of oral antiseptic agents, but by measures such as controlling the number of patients per day, use of proper personal protective equipment, aerosols reduction and air circulation increase (whenever possible). The use of any chemical method should yet be considered, currently as a supporting additional measure. However, we admit that chemical mouthwashes prior dental procedures contributes do microorganisms reduction inside oral cavity, consequently reducing contamination inside dental offices. Therefore, in agreement with current evidence, we recommend that oral antiseptic solutions should be used according the following protocol: 15 ml of 0,12% CHX for 30 seconds, followed by a 30 seconds 15 ml 1% H₂O₂ mouthwash [5].

Declaration of Competing Interest

No conflict of interest.

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