

Periodontal Hygiene: A Gentle Reminder During the COVID-19 Pandemic

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ABSTRACT

This manuscript briefly discusses the importance of periodontal hygiene and its relationship to severe acute respiratory syndrome coronavirus-2 infection.

Keywords: periodontal diseases, oral hygiene, COVID-19, SARS-CoV-2, pandemics

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Dear Editor,

Periodontal disease (PD) is one of the most prevalent oral conditions in the world, affecting from 20% to 50% of the world's population, that has been considered an endemic oral disease [1]. The prevalence of PD is expected to grow even more in the coming years due to the increasing aging population [2]. PD acts as an influencing factor in various systemic conditions, such as diabetes and cardiovascular abnormalities, as well as affecting the quality of life [3]. Different studies warn that poor oral health directly affects overall health [4, 5]. Despite this, PD and other oral conditions have not been prioritized by health program managers, dental professionals, and the population itself in various regions of the world, which represents a serious threat to the general well-being. Although it is possible to prevent the onset and progression of PD, many patients seek care only in the advanced stages of the disease [2]. This problem has worsened during the pandemic, when a large number of patients have chosen to cancel appointments due to fear of contamination [6, 7], at the same time that dental offices began to prioritize only urgent cases in periods of quarantine/lockdowns [7, 8].

It is known that periodontal pockets act as a reservoir for various pathogens. Harmful pathogens present in the oral cavity can lead to serious conditions including pulmonary infection, since such microorganisms can reach the lower respiratory tract, resulting in severe health consequences. Therefore, maintaining good oral hygiene (including periodontal hygiene) is essential to control the accumulation of harmful pathogens in the oral cavity, which may reduce the chances of their systemic dissemination [9].

Given the current scenario of the coronavirus disease 2019 (COVID-19) pandemic, it is worth noting that the oral cavity also is an important reservoir for chlamydia pneumoniae—a respiratory pathogen involved in cases of nosocomial pneumonia [10]. Although intubated

intensive care unit patients may be more likely to develop respiratory infections due to the colonization of oral pathogens associated with poor oral hygiene [11], this type of occurrence has been successfully prevented in many cases of critically ill COVID-19 patients through specialized actions by professionals in the field of hospital dentistry [12].

However, it should be noted that there are similarities between the cytokine storm observed in patients with severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection and periodontal conditions [10]. Patients with severe SARS-CoV-2 infection may experience pulmonary edema due to tissue destruction of lung tissue. In this case, the tissue damage resulting from the T helper 17 cells inflammatory response is similar to what occurs in PD.

Both PD patients and COVID-19 patients experience high levels of interleukin 17-generating cells [13]. Moreover, recent studies have shown the oral cavity and periodontal tissues as portals of entry of SARS-CoV-2, while many of the systemic diseases associated with PD are risk factors for severe forms of COVID-19, including diabetes mellitus, cardiovascular disease, and respiratory disorders [14].

While on the one hand there is growing evidence of an association between periodontal hygiene and SARS-CoV-2 infection [10, 14], on the other hand there is a general lack of awareness about oral health importance. Information on oral health and hygiene is often limited among many developing countries [15, 16], however many oral conditions can be prevented if information about them is made public in a timely manner [17]. In this context, dental professionals should play an important role as oral health educators at communities [3], since good oral hygiene may reduce both the risk of getting periodontal disease and associated complications in vulnerable individuals with COVID-19 [9].

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