Editorial on Periodontal Sickness a Danger Factor for Serious Covid-19 Ailment

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EDITORIAL NOTE

Periodontal Disease (PD) comprises a group of diseases involving inflammatory aspects of the host and dysbiotic events that affect periodontal tissues and could have systemic implications. Diverse factors and comorbidities have been closely associated with PD such as diabetes, obesity, aging, hypertension, and so on; although, underlying mechanisms or causal associations have not been established completely. Interestingly, these same factors have been widely associated with progression or severe coronavirus disease 2019 (COVID-19), an illness caused by coronavirus SARS-CoV-2. Since inflammatory and dysbiotic factors as well as comorbidities affect systemic health, it is possible that periodontal status indicates the risk of complication of COVID-19. However, assessment of oral health history including periodontal status in COVID-19 patients has not been reported.

Periodontal diseases are a group of chronic inflammatory diseases, including gingivitis and periodontitis. These diseases are driven by several microbial agents that cause inflammation and destruction of tooth-supporting tissues. According to the World Health Organization (WHO), PD affects 10% of the global population. Poor oral hygiene, tobacco smoking, diabetes, medication, age, hereditary, and obesity have been related to increasing the risk of PD. Similarly, other studies suggest the association between PD and other diseases such as diabetes, hypertension, asthma, liver diseases, among others.

COVID-19 is a disease caused by novel coronavirus named SARS-CoV-2 that triggers damage to the lungs and other organs. Most COVID-19 patients present mild symptoms; however, a few could develop severe illness having pneumonia, pulmonary edema, Acute Respiratory Distress Syndrome (ARDS), multiple organ dysfunction syndromes, or even die.

Diabetes Mellitus (DM) is a chronic disease determined by loss of control of glucose homeostasis that can affect the organs of the body (WHO). This disease is associated in a bilateral way with PD. That is, the PD can be a complication of diabetes by out of control the level of glycemia, and having diabetes increases the possibility the proposed mechanisms to understanding this association include alterations in vascular, cellular, and host repair processes. Diabetes is a significant predictor of severe COVID-19 and periodontal disease, so that the latter could be useful to identify risk groups of COVID-19. Pregnancy allows various physiological changes, and suppresses the mother's immune system to allow gestational development. Over the last few years, some epidemiological studies have suggested the vulnerability of pregnant women to PD due to an affected inflammatory response. Furthermore, it has been established that increased progesterone levels trigger the gingival response causing dysbiosis. In this way, high periodontopathogens growth occurs, causing clinical manifestations in the supporting and protective tissues of the teeth. Oral dysbiosis is the loss of the homeostatic balance of the oral microbial communities with the host, and it has associated with oral diseases like as PD.

The main pathogens associated with PD are Porphyromonas gingivalis, Tanerella forsythia, and Treponema denticola (red-complex), but there more pathogenic bacteria including species of the genera Prevotella, Desulfobulbus, and Selenomona as well as Aggregatibacter and others. Even though some of the reported risk factors have not been strongly associated with PD or their causal relationships are not completely established, it is convincing to propose an association between PD and COVID-19, where the latter could be affected by the intervention of periodontopathogenic bacteria outside its ecological niche and cause chronic inflammation. Future studies on the periodontal status of patients with COVID-19, including from mild to severe forms, could allow the opportune identification of people in risk of severe illness, and generation of relevant recommendations.

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