THE CONNECTION BETWEEN ORAL HEALTH AND COVID-19 SEVERITY

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Conflicts of Interest: Nil

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DOI: <https://doi.org/10.32553/ijmsdr.v5i5.790>

Abstract:

“Oral health is a reflection of the physiological, social, and psychological factors that are essential to our quality of life”. COVID -19 is becoming a threat all over the world. Obesity, diabetes, and hypertension are common underlying conditions in patients that develop serious COVID-19 complications. In the meantime, evidence of a correlation between oral health and severity of COVID-19 disease is growing. According to various studies, the particular ingredient in some affordable and readily available mouthwash products is highly effective at inactivating the SARS-CoV-2 virus, which causes COVID-19. Simple oral hygiene measures may help reduce the risk of the novel coronavirus spreading from the mouth to the lungs, as well as prevent serious COVID-19 infections. This article briefly reports the importance of oral hygiene and its link with COVID-19 severity.

Keywords: COVID-19, Oral health, severity, global pandemic

Introduction:

Simple oral hygiene measures may help reduce the risk of transmission of the novel coronavirus from the mouth to the lungs and prevent serious cases of COVID-19. The study, which was published in the Journal of Oral Medicine and Dental Science, found that specific ingredients in some low-cost, widely available products are highly effective at inactivating the SARS-CoV-2 virus, which causes COVID-19. The coronavirus could enter people's lungs via saliva, with the virus moving directly from mouth to bloodstream, according to the researchers, particularly if they have gingival or periodontal disease. Evidence suggests that COVID-19 lung disease affects blood vessels first, rather than airways, with elevated virus concentrations in saliva and periodontitis linked to an increased risk of death. Dental plaque accumulation and periodontal inflammation increase the chances of the SARS-Co-2 virus reaching the lungs and causing more serious infections. Simple steps including diligent tooth brushing and interdental brushing to reduce

plaque build-up, as well as specific mouthwashes and saltwater rinsing to reduce gingival inflammation, may help lower viral concentrations in saliva. The public should take easy, but efficient, regular measures to maintain oral hygiene and minimize factors that contribute to gum disease, such as plaque accumulation. Accordingly, experts, who believe that this finding may make effective oral health care a potentially life-saving intervention.[1]

Discussion:

Oral well-being has been shown to have a significant effect on overall health in recent years. According to several reports, cytokines or microbial products released systemically in response to oral infection induce inflammation in distant organs, which promotes the development of systemic diseases such as Alzheimer's disease, diabetes, atherosclerotic heart disease, and cerebrovascular disease.[2-5] Bad oral health has also been linked to the development of complications in systemic diseases such as diabetes, chronic kidney disease, and liver

disease. Oral pathogens' ability to intensify lung infection may be explained by a number of mechanisms, including aspiration of oral pathogens into the lower respiratory tract, particularly in high-risk individuals; salivary enzyme alteration of mucosal surfaces along the respiratory tract, which facilitates pathogen colonization; and secretion of pro-inflammatory cytokines during periodontitis, which can promote adhesion to lung epithelium and lung colonization by respiratory pathogens [6,7]. The concluding statement in the article titled "Is there an association between oral health and severity of COVID-19 complications?" states that older individuals and people of any age who have serious medical conditions such as chronic lung disease, diabetes, heart conditions, or chronic kidney disease are at high risk for developing severe illness due to SARS-CoV-2 infection. At the same time, poor oral health increases the risk of developing the same medical conditions. Therefore, improving oral health in people of any age, by reducing their risk of developing non-oral systemic diseases, may reduce the morbidity of COVID-19. [8]

The more serious the COVID-19 infection, the more likely it is to cause complications like pneumonia, ARDS, sepsis, septic shock, and death. A number of hosts and viral factors that affect a patient's immune response influence the growth, severity, and risk of complications following a COVID-19 infection. Though 80 percent of COVID-19 patients have moderate symptoms, 20% develop a serious form of infection.

The authors of the article titled, "Could there be a link between oral hygiene and the severity of SARS-CoV-2 infections?"[9], suggested that, in order to better understand the outcomes of COVID-19 disease, the connection between the oral microbiome and COVID-19 complications should be examined. According to the authors, the four major comorbidities linked to an increased risk of COVID-19 complications and death are also linked to altered oral biofilms and periodontal disease, which explains why the association between poor oral health and COVID

-19 severity. Bacterial superinfections are clearly common in patients with a serious case of COVID-19, with bacterial superinfections accounting for more than half of all deaths. About 80% of ICU patients had an abnormally high bacterial load, which was successfully treated with a combination of antiviral and antibiotic therapy.

Despite the fact that superinfections have been shown to play a role in the severity of respiratory viral diseases, they are often understudied due to the difficulty of diagnosis and the fact that culture-based microbiological testing becomes less sensitive once antibiotics are administered. More researches on bacterial superinfections, as well as the relationship, if any, between the oral microbiome and COVID-19 complications, is urgently needed to determine the role of oral hygiene and pre-existing oral disease in the seriousness and mortality risk of COVID-19. Although the association between oral health and severity of COVID-19 symptoms appear logical, more research is needed to demonstrate the association empirically. [9]

Meanwhile, maintaining, if not improving, oral hygiene during a SARS-CoV-2 infection is recommended to reduce the bacterial load in the mouth and the risk of bacterial superinfection. Poor oral hygiene should be considered a risk factor for post-viral complications, particularly in patients who are already predisposed to biofilm changes due to diabetes or hypertension, or cardiovascular diseases. Bacteria found in patients with extreme COVID-19 are linked to the oral cavity, suggesting that better oral hygiene may help reduce the risk of complications.

Conclusion:

Fortunately, by merely practicing good oral hygiene, you can be able to reduce the risk of developing COVID-19 complications. Brushing your teeth twice a day for two minutes each time and flossing every day eliminate plaque and bacteria from the surface of your teeth, allowing your mouth's natural defenses to function properly. In addition, professional teeth cleanings should be done at least every six months, if not

more often in some cases. Plaque and bacteria are eliminated from the entire surface of your teeth, including the hard-to-reach areas, during regular dental cleanings. This would not only protect you from tooth decay and gum disease, but it can also help you avoid COVID-19 complications.

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