

## *Dentistry vs Severe Acute Respiratory Syndrome Coronavirus 2: How to face this enemy*

## *Odontologia vs Síndrome Respiratória Aguda Severa Coronavirus 2: Como enfrentar o inimigo*

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### **ABSTRACT**

Since the beginning of the SARS-CoV-2 pandemic, numerous restrictive measures have been taken by the governments of different countries. Recently, due to the high possibility of transmission in dental offices, there was a recommendation by the American, European and Brazilian governments to request the closing of the offices. In this commentary, we will give an overview of the reasons and perspectives of this scenario.

**Indexing terms:** SARS-CoV-2. Covid-19. Coronavirus. Dentistry. Dental office. Odontology.

A novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), associated with severe respiratory illness emerged in Wuhan, China, in late 2019 [1].

Several dental associations worldwide recommended or even obligate dentists postpone elective procedures on March 16th 2020. By a public health emergency perspective, when social distancing has been ordered at all levels of government, continuing practicing in the dental office even with personal protective equipment, would be irresponsible. Among the reasons is that the uncertain about the virus incubation time which has been estimated to vary from 5 to 6 days, with a range of up to 14 days [2] and even the reappearance in recovered patients [3]. Therefore, some asymptomatic or subclinical infected

patients characterized by mild symptoms, but both are contagious, which leads to the possibility of unintentional viral spread within dental offices.

Significant environmental contamination by patients with SARS-CoV-2 through respiratory droplets and fecal shedding suggests the environment as a potential medium of transmission and supports the need for strict adherence to environmental and hand hygiene [4]. The health care workers (HCWs) were recognized as high-risk group to acquire this infection. In a case series of 138 patients treated in a Wuhan hospital, 40 patients (29% of cases) were HCWs. When the viruses arrived to Singapore from a total of 47 cases have been confirmed among the first 25 locally transmitted cases, 17 cases (68%) were

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probably related to occupational exposure [5]. Thus, the dental office may be considered an important place to spread the SARS-CoV-2 and dentists are among the HCW to acquire the new pneumonia. In addition to the infected patient's cough and breathing, dental devices such as high-speed dental hand piece produces a large amount of aerosol and droplets mixed with the saliva or even blood is formed. Those particles of droplets and aerosols are small enough to stay airborne for an extended period before they settle on environmental surfaces or enter the respiratory tract. Besides, human coronaviruses like SARS-CoV (severe acute respiratory syndrome coronavirus) and MERS-CoV (Middle East respiratory syndrome coronavirus) can remain infectious on inanimate surfaces for up to 9 days. Surface disinfection with 0.1% sodium hypochlorite or 70% ethanol significantly reduces coronavirus infectivity on surfaces within 1 min exposure time, which is expected a similar effect against the SARS-CoV-2 [6].

Thus, after this worldwide effort to promote social distancing and thus community mitigation, the practical strategies to block virus transmission and for preventing the transmission of SARS-CoV-2 during dental diagnosis and treatment, include full patient evaluation, rigorous hand hygiene, personal protective measures for the dental professionals, mouthrinse before dental procedures, rubber dam isolation, anti-retraction hand piece, disinfection of the clinic settings, and wear a surgical mask and eye protection with solid side shields or a face shield to protect mucous membranes of the eyes, nose, and mouth during procedures correct management of medical waste [7].

Much of the actual uncertainty relates to the nature of a novel pathogen, especially a potentially lethal coronavirus with unique person-to-person transmission. Nobody has previous experience with it, immunologically or otherwise, and there is still much to learn about its wildlife origins and disease dynamics. Researchers are running to find some possible drugs to help patients recover, as well as possible vaccines and even rapid tests

to identify infected patients [8]. Immunological evidences on the recruitment of immune cell populations (antibody-secreting cells, follicular helper T cells and activated CD4+ and CD8+ T cells), together with IgM and IgG SARS-CoV-2-binding antibodies, in the patient's blood before the resolution of symptoms, shows that our immune system may control this virus [9]. We will win!

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