

Coronavirus (COVID-19): the potential contamination among dentistry professionals in Brazil

Coronavírus (COVID-19): a contaminação potencial entre profissionais da Odontologia do Brasil

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Abstract

The coronavirus (COVID-19) is considered a global pandemic with several respiratory syndrome caused by coronavirus 2 (SARS-CoV-2). The main symptoms of COVID-19 are fever, cough, and fatigue, while other symptoms include sputum production, diarrhea and alterations on the gastrointestinal system. The COVID-19 was recently identified in the saliva of infected patients and the transmission through of droplets and aerosols generated during clinical dental care is possible among dentists, oral health assistants and/or oral health technicians and others around the social cycle of the friendship of these health professionals, such as families and colleagues. Thus, there is very necessary to improve the several types of prevention to healthcare professionals that realize the liberation of aerosol during oral assistance. It's important to mention that these precautions are important to prevent human-to-human transmission and protect the global system of health. In addition, this care is essential to decrease the spread of COVID-19 in this moment.

Descriptors: Coronavirus Infections; Dentistry; Occupational Diseases.

Resumo

A doença popularmente denominada de coronavírus (COVID-19) esta sendo considerada uma pandemia global e é causada pelo coronavírus 2 (SARS-CoV-2) apresentando, principalmente, como sintoma a síndrome respiratória aguda. Os principais sintomas do COVID-19 são febre, tosse e fadiga, enquanto outros sintomas incluem produção de escarro, diarreia e alterações no sistema gastrointestinal. O COVID-19 foi identificado recentemente na saliva de pacientes infectados e a transmissão através de gotículas e aerossóis gerados durante o atendimento odontológico clínico é possível entre dentistas, assistentes de saúde bucal e/ou técnicos de saúde bucal e outros, considerando o ciclo social de amizade desses profissionais de saúde, como familiares e colegas. Assim, é necessário aprimorar os diversos tipos de prevenção para os profissionais de diversas áreas da saúde que realizam a liberação do aerossol durante a assistência oral. Além disso, é importante mencionar que essas precauções são importantes para impedir a transmissão de seres humanos entre si e proteger o sistema global de saúde. Contudo, esse cuidado é essencial para diminuir a propagação do COVID-19 neste momento.

Descritores: Infecções por Coronavirus; Odontologia; Doenças Profissionais.

Resumen

La enfermedad conocida popularmente como coronavirus (COVID-19) se considera una pandemia global y es causada por el coronavirus 2 (SARS-CoV-2), que se presenta principalmente como un síntoma de síndrome respiratorio agudo. Los principales síntomas de COVID-19 son fiebre, tos y fatiga, mientras que otros síntomas incluyen producción de esputo, diarrea y cambios en el sistema gastrointestinal. COVID-19 se identificó recientemente en la saliva de pacientes infectados y la transmisión a través de gotitas y aerosoles generados durante la atención dental clínica es posible entre dentistas, asistentes de salud oral y / o técnicos de salud oral y otros, considerando el ciclo social de amistad de estos profesionales de la salud, como familiares y colegas. Por lo tanto, es necesario mejorar los diversos tipos de prevención para profesionales de diferentes áreas de la salud que realizan la liberación de aerosoles durante el cuidado bucal. Además, es importante mencionar que estas precauciones son importantes para evitar la transmisión de seres humanos entre sí y para proteger el sistema de salud global. Sin embargo, este cuidado es esencial para reducir la propagación de COVID-19 en este momento.

Descriptores: Infecciones por Coronavirus; Odontología; Enfermedades Profesionales.

CURRENT VIEW POINT OF THE CORONAVIRUS COVID-19

The Coronavirus COVID-19 beginning in December 2019 in Wuhan, China and this infection have spread to the world. Now, this situation is considered a global pandemic with several respiratory syndrome caused by coronavirus 2 (SARS-CoV-2)¹. The symptoms of COVID-19 infection include cough, fever, shortness of breath and acute respiratory disease with severe cases of pneumonia and even death². Besides that, concurrent gastrointestinal alterations as abdominal discomfort, diarrhea and vomiting have also been described^{1,3}.

The main mechanism of infection of COVID-19 (SARS-CoV-2) in humans is yet unknown. Apparently, this microorganism has an affinity for cells present in the lower airways where it could replicate. Another hand, the transmission between humans of the coronaviruses mainly occurs through saliva, which is released from the salivary glands into the mouth and then the droplets of saliva could be direct and indirect contact on several types of surfaces, where the virus can survive by some days⁴. It is worth mentioning that salivary gland is

composed by epithelial cells can be infected by SARS-CoV and in a short time after infection

observed in rhesus macaques suggest that salivary gland cells could be a pivotal source of this type of virus solute in saliva fluid⁵. Whereas COVID-19 was currently identified in the saliva of infected patients using Real-time Reverse Transcription-Quantitative Polymerase Chain Reaction (qRT-PCR) in patients with a median age of 62.5 years old⁶. In this context, the transmission of COVID-19 could be promoting by salivary droplets originated from nasopharyngeal or oropharyngeal and released during the talking, coughing, sneezing (related to human respiratory activities), and/or aerosols generated during clinical procedures with the long-distance transmission⁷. Considering that dental surgeons also realize assistance where there is a release of blood from oral tissues, the transmission by contaminated blood should also be considered⁷. Another point that needs to discuss is the fact that the infections could be asymptomatic and the transmission may occur before the disease symptoms. A recent study realized in

Wuhan, China, indicates that 29% of 138 hospitalized patients with COVID-19-infected pneumonia are healthcare workers⁸.

In Brazil, in accordance with the Ministry of Health, the country has 27,283 public oral health teams present in 5,029 cities composed of the dental surgeon and oral health assistant and/or oral health technician⁹. Besides that, it is important to mention that in Brazil the life expectancy is about 73 years in 2010 and increase to 76 years old in 2018¹⁰. In other words, the population of Brazil is aging and the risk of lethal infections is possible since the elderly population belongs to the main group related to fatal infections by COVID-19¹¹. In this point of view, several types of professionals that work directly and close contact with blood and saliva can be a high-risk by contamination to COVID-19. Therefore, it is extremely necessary that health professionals, especially dentists, oral health assistants (OHA) and/or oral health technicians (ORT), who work in the treatment of oral changes and with preventive medicine against the conditions that affect one of the portions of the stomatognathic system (stomatognathic apparatus) refine their strategies to avoid contamination and spread of the infection caused by COVID-19. For this, it is essential that all these professionals work in the reorganization of care, thoroughly clean their hands using running water and soap or alcohol gel, use all the individual protective equipment available and intensely reduce the production of aerosols during dental treatments during this period of a global pandemic. It's important to mention that the Interim Guidance for Healthcare Professionals from Centers for Disease Control and Prevention (CDC) has been updated, and it is subject to change as additional information on COVID-19 infection and transmission and the professionals of health needs access the bank of data and update our knowledge about transmission and prevention of COVID-19 (SARS-CoV-2) in humans.

In addition to the data presented by the Ministry⁹ of Health in relation to the number of health professionals, another relevant point is the number of health professionals (dental surgeon, oral health technician and oral health assistant) registered with the Federal Council of Dentistry¹². The figures reveal that throughout the country, with the exception of the state of São Paulo, Brazil has 10,155 professionals. In the state of São Paulo alone, the epicenter of COVID-19 in the country counts 94,930 dental surgeons and 26,478 oral health technicians and assistants distributed throughout the state (data from the Regional Dentistry Council of the State of São Paulo)¹³. From this point of view, it is interesting that all these professionals take the precautions mentioned above and, considering that the transmission of COVID-19 in isolation is, on average, from 1 to 3 or 5 other individuals¹⁴, it is

extremely important that it be performed a reduction in dental care in this period of social isolation. Taking into account these transmissibility data, it is essential that dental treatments be reduced so that the families of health professionals can also be kept stable and that collaborate with the stability of the unique health system in Brazil, contributing that it does not enter into collapse.

Finally, complementary studies are needed to investigate whether the diagnostic of COVID-19 (SARS-CoV-2) in the saliva is really possible and then reduce the impact on the transmission of this virus contributing to reducing the effect the human-to-human transmissions, especially among dentists and healthcare professionals that perform aerosol during the procedures.

FINAL CONSIDERATIONS

The coronavirus (COVID-19) is considered a global pandemic with several respiratory syndrome caused by coronavirus 2 (SARS-CoV-2). The main symptoms of COVID-19 are fever, cough, and fatigue, while other symptoms include sputum production, diarrhea and alterations on the gastrointestinal system. The COVID-19 was recently identified in the saliva of infected patients and the transmission through of droplets and aerosols generated during clinical dental care is possible among dentists, oral health assistants and/or oral health technicians and others around the social cycle of the friendship of these health professionals, such as families and colleagues. Thus, there is very necessary to improve the several types of prevention to healthcare professionals that realize the liberation of aerosol during oral assistance. It's important to mention that these precautions are important to prevent human-to-human transmission and protect the global system of health. In addition, this care is essential to decrease the spread of COVID-19.

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CONFLICTS OF INTERESTS

The authors declare no conflicts of interests.

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Received 11/05/2020

Accepted 09/07/2020