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Corona Virus Impacts to Dental Practice and Potential Salivary Identification

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Abstract

A novel corona virus (COVID-19) is associated with human to human transmission. The COVID-19 was recently identified saliva of infected patients. The possibilities of transmission by the saliva of this virus are discussed in this article. The dental clinical procedures are expected to transmit COVID-19 through contact with droplets & aerosols. In order to improve efficient strategies for prevention, especially for dentists & healthcare professionals performing aerosol generation procedures, it is an essential strategies that more investigation into detection & impact of COVID-19 in oral fluids be made-savior which can play a crucial role in human to human transmission, can be convenient and economic health care platform for quick and early detection of COVID-19 infection through non- invasive salivation diagnostics.

Keywords

Novel corona virus; Human transmission; Healthcare professionals; Dentists; Salivation

Introduction

A global public health emergency is the current outbreak of the 2019 novel corona virus strain (COVID-19) [1]. This infectious disease epidemic, which involves fever, inflammation, acute respiratory disorders with serious pulmonary infections, kidney failure, and even mortality, has been controlled by international centers to prevent and control disorders. The COVID-19 was found in Wuhan, Hubei, China for the first time, as a severe air condition and the worldwide spread of infections [2]. Currently, the genome sequences of clinical samples available for COVID-19 indicate that bat corona viruses have been identified with this viral development [3]. Although the infection with corona virus is frequently mild, either a Severe ARS-CoV or Middle East Respiratory Syndrome Corona virus (MERS-CoV) beta-corona virus infection caused greater death rates [4,5,6]. Due to COVID-19 novelty, some virus characteristics are still unknown. Given that COVID-19 has recently been found in saliva in infected patients, the outbreak COVID-19 reminds that dental/oral health professionals and other medical professionals must always protect themselves against the spread of infectious disease and offers the opportunity to determine whether a non - invasive saliva diagnosis for COVID-19 can help detect such viruses and reduce the spread of the COVID-19 [7]. The COVID-19 has been isolated by the Chinese Institute for Disease Control and Prevention. The data on the viral genome sequences were subsequently published in international GenBank and GISAID database [8,9]. In many countries this action allowed laboratories to perform specific COVID-19 diagnostic PCR tests. Currently, transmission routes of COVID-19 still have to be defined, but transmission between human to human have been established [10,11]. Transmission routes are nasopharyngeal, oropharyngeal and blood extracts which will be used for the lab diagnostic testing. Expectorated sputum and other specimens in severe respiratory disease should be considered as lower respiratory tract samples [12,13]. Numerous COVID-19 transmission potential scenarios were identified. Goutlets are typically associated with saliva which may come with nasopharyngeal and oropharyngeal illness. Long-distance transmission of larger drops to local people may help spread virus and, on the other, smaller droplets contaminated with air-suspension viral particles will spread long-distance transmission [14]. Since laboratory experiments are also carried out in blood samples, infected blood circulation should also be considered. In this case, healthcare professionals, such as dentists, can provide clinical treatment unknown to patients who have been compromised and who have been diagnosed with COVID-19 or are suspected of being infected. Asymptomatic infection initiated even before the disease's signs appear and transmission may occur [15]. A recent clinical study has shown that 29% of 138 COVID-19 pneumonia hospital patients in Wuhan, China, work for healthcare professionals [16]. Inhalation of airborne particles and aerosols produced in patients with COVID-19 during dental procedures, bronchoscopying is a high risk procedure where dentists are exposed to this virus directly and in a close manner [17]. Therefore, it is important to avoid COVID-19 contamination in Dental clinics/hospitals/private chambers by concentrating on patients' location, hand hygiene, all personal protective equipment (PPE) and vigilance when carrying out aerosol producing procedures. The Temporary Advice for CDC health staff has been revised to improve as more research is available on COVID-19 infection and spread. Theoretically, COVID-19 can be associated with salivary networks. Some strains of viruses in saliva were found within 29 days after infection showing that a non-invasive platform to quickly distinguish biomarkers from saliva might improve the detection of diseases [18-20]. For patients with oropharyngeal secretions a drop of saliva should be obtained as a sample [12,13]. In

order to collect nasopharyngeal or oropharyngeal samples by close interaction with health workers and contaminated patients will significantly reduce the risk of COVID-19 transmission. In addition, the compilation of the nasopharyngeal and oropharyngeal induces malaise and may facilitate bleeding especially in thrombocytopenia infected patients. Only 28 percent of COVID-19 patients produced sputum in the lower respiratory tract, which indicates a significant diagnostic limitation. We believe there are at least 3 separate channels in saliva for COVID-19: in the lower and upper respiratory tract which are usually mixed in the oral cavity with the liquid droplets. Secondly, COVID-19 containing local proteins derived from extracellular and serum proteins can enter the mouth through shrinkage fluid, oral exudates of cavity [21]. Lastly, the major and minor salivary glandular infections, which then release particles into the saliva via salivary duct, can also occur for COVID-19 in the oral cavity. It is important to note that epithelial salivary cells can be infected with SARS-CoV in rhesus macaques shortly after infection, suggesting that salivary cells may be a pivotal source of SARS-CoV in saliva [22].

In addition, intranasally immune saliva of animal models was previously shown to develop SARS-CoV specific secreta immunoglobulin-A (sIgA) [23]. Taking into account the similarities of the two strains, we are speculating that COVID-19 can also be used to treat salivary using specific antibodies for this virus. More studies are required to explore COVID-19's possible diagnosis in saliva and its effect on the transmission of the virus, which is important for enhancing successful preventive strategies, particularly for dentists and healthcare professionals who perform aerosol generation procedures.

Clinical Features

The featured encountered in the clinical course of the disease are multiferrous spanning from fever, weakness, breathing problem, coughing, sneezing.

Modern Treatment Challenges: A Lacunae Re-visited

Epidemiologically COVID-19 has a greater prevalence in the global prospectives. So we decided to zero in on COVID-19 in our work ahead. As suggested in the literature the course of the COVID-19 is often complicated due to the multifactorial etiology under pinning the conditions which demands closer over. Coming to the option available for management they include both non pharmacological aspects & pharmacological aspects. Under non pharmacological aspects life style changes like monitored dieting, exercise plays a pivotal role & keeps distance, used hand sanitizer to control the functional aspects of the disease. On the other hand Azithromycin & 8-Hydroxychloroquine are still considered as a corner stone of the therapy as per as pharmacological aspects. Azithromycin is a macrolide antibiotics which binds with 70s ribosome & inhibit protein synthesis. Another pivotal point is that Hydroxychloroquine act as chemotherapeutic agents against erythrocytic forms of the plasmodium parasites. The drugs also inhibit parasite growth by interfering with the conversion of toxic heme, released from the parasite digestion of hemoglobin to the non toxic hemozoin. Since, Remdesivir plays an instrumental role to manage COVID-19 as per as pharmacological aspects which is deployed in the WHO Guideline.

Conclusion

As we know COVID-19 is an emergent nuance that dramatically impacts quality of life. From this review we concluded that Azithromycin & 8-Hydroxychloroquine plays a pivotal role with lower side effects.

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