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Whether Human Saliva a Useful Tool for the Diagnosis of COVID-19

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ABSTRACT

Background: COVID-19 may be present in the saliva of contaminated patients. There is a need to build tools for diagnosis of COVID-19 in oral liquids which helps in prompt diagnosis.
Methodology: Article tracks the use of saliva in the modern diagnosis of COVID-19. Different web searches like Google scholar, Scopus, PubMed to search the content.
Results: There is strong evidence for the presence of a viral genome in human saliva which suggests that it can be used in the diagnosis of a deadly virus.
Conclusion: Saliva can be considered as an effective tool for the diagnosis of COVID-19.

Key words: Human saliva, diagnosis, COVID-19

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SHORT COMMENTARY

The current epidemic of 2019 coronavirus strain (COVID-19) makes a general wellbeing crisis of worldwide apprehension [1]. Centres for illness control and counteraction had observed the irresistible malady episode over the globe. The serious respiratory sickness brought about by the COVID-19 was first seen in Wuhan, Hubei, China, and diseases had extended around the world [2]. Different side effects of COVID-19 infection incorporate intense respiratory ailment, cough, fever, and serious cases prompting pneumonia to kidney failure, and yet demise. At present, accessible COVID-19 genome successions from scientific examples indicated the infection belongs to bat coronaviruses [3].

As of now, the COVID-19 transmission occurs through many means, yet man-to-man transmission from oral secretions is confirmed. In Pakistan, the extent of dynamic and affected patients has been continually expanding. Transmission using getting in touch through vapours from talking, coughing, sneezing (identified with human respiratory exercises), and aerosols created during clinical procedures is normal. The source of infection may come from nasopharyngeal or oro-pharyngeal droplets, typically connected by salivation. Bigger droplets could add the spread of viruses in nearby places and subjects while the long-distance spread is possible by little drops contaminated the air-suspended virus genome [4]. WHO has updated the definition of close contact—any person within 1 m with a confirmed case at their symptomatic period, starting from 4 days before symptom onset? However, the airborne transmission could also be set up, especially within the same indoor space and aerosol-generating procedure is implemented [5].

Screening for COVID-19 incorporates the history of traveling the most recent three months as well as the nearness of side effects. The corroborative diagnosis includes the discovery of infection DNA through polymerase chain response (PCR). It has been apparent, COVID-19 was newly distinguished in the saliva of contaminated individuals [6]. The dental/oral and other healthcare experts should consistently be steady in ensuring against the spread of irresistible malady, and it allows deciding whether a non-obtrusive spit symptomatic methodology for COVID-19 could help with recognizing such infections and decreasing the spread.

This short communication summarizes the diagnostic value of saliva for 2019-nCoV, possibly direct invasion into oral tissues, and close contact transmission of 2019-nCoV by saliva droplets, expecting to contribute to 2019-nCoV epidemic control. With the nature of noninvasive and less hazard to healthcare workers, saliva specimen collection has the advantages of being more acceptable for patients

and more secured for healthcare workers for diagnosis of coronavirus [7]. For SARS-CoV, the salivary gland is a significant reservoir of the virus in saliva. The positive rate of COVID-19 in the saliva of patients can exceed about 92%, and the live virus can also be cultivated through saliva samples. This proposes that COVID-19 spread through asymptomatic infection may come from the contaminated saliva. Consequently, the source of asymptomatic infection could be salivary glands.

The determination of COVID-19 may be achieved after utilizing salivary detection of the genome contamination. An investigation conducted in 2020 shows that the non-invasive technique of salivation could improve disease identification [8]. Saliva can be gathered in subjects depicting symptoms of COVID-19. Remembering the prerequisite of close contact between human services infected patients to gather nasopharyngeal or oropharyngeal samples, the chance of saliva self-assortment can unequivocally decrease the danger of COVID-19 transmission. Plus, the nasopharyngeal and oropharyngeal assortment advances inconvenience advanced draining particularly in contaminated patients with thrombocytopenia. The sputum of a lower respiratory tract was created by just 28% of MERS coronavirus contaminated patients, which demonstrates a profound restriction as an example to analytic assessment6. Presently the inquiry is how many numbers of COVID-19 patients produce sputum because of contamination? Besides, research facility researchers ought to assess demonstrative precision, affectability, and particularity of various examples including blood, salivation, and sputum. It has been accounted for in an examination in 2018 that throat wash and saliva had a high popular burden up to 6x 106 and 6x108 RNA duplicates per ml [9]. Another examination distributed in 2020 in China uncovered that Corona was identified in 91.7% (11/12) patients on the first example and total viral burden was 3.3 × 106 duplicates/ml (extend, 9.9 × 102 to 1.2 × 108 duplicates/ml) [10,11].

The benefits of salivary diagnostic tests are to be economical, noninvasive, healthier to apply than serum sampling, diagnostic values in real-time, no requirement for specialized healthcare workers, numerous samples are simple to obtain, collecting and monitoring are doable at home, minimizing the possibility of cross-infection, better shipping and storage than serum sampling, lesser agitation during the diagnostic process, screening assays are commercially available, and saliva does not clot and can be handled more easily than blood. Thus, salivary diagnostic testing can offer a convenient and cost-effective mechanism for early-diagnosis of Covid-19 [9]. There can be three potential courses of salivary contamination for COVID-19: first, from COVID-19 within inferior and superior respiratory tract [2] which gain access to the mouth directly along with fluid drops mostly substituted by these organs. Second, COVID-19 within the blood may be accessed in the oral cavity through the crevicular liquid, a hole explicit exudate which has native proteins received from extracellular lattice and serum-derived proteins [10]. At last, other paths for COVID-19 to contaminate the oral cavity through major-and minor-salivary gland contamination, the resulting arrival particles in saliva through saliva conduits.

It is also recommended that consultants and laboratory staff, working as the frontline warriors, should develop strategies for the salivary diagnosis of COVID-19. It is also recommended that further studies and research should be conducted regarding the diagnostic accuracy of saliva for COVID-19 patients.

CONCLUSION

It is concluded that saliva should be considered as an effective tool for the diagnosis of COVID-19 because of its ready availability, ease of access, and possibly cheap diagnostic methods. The presence of a viral genome in human saliva may help in the diagnosis of active disease and or asymptomatic carrier stage of the disease.

CONFLICTS OF INTEREST

None.

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