Saliva is a Non-Invasive Body Fluid for Rapid Detection of Coronavirus

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Coronavirus (SARS-CoV-2) causes Coronavirus Disease 2019 (COVID-19), which has been rendered the toughest pandemic of the current century.[1] Like other zoonotic viruses (anthrax) the Coronavirus has been transmitted from vertebrate animals to human beings and further spreads through direct, indirect contact transmission. The associated symptoms of COVID-19 are fever, cough, tiredness, and impairment of taste, and more adversely chest pain and difficulty in breathing or other respiratory diseases.[2] The current SARSCoV2 began in Wuhan, China, in December 2019, and now many variants of them have been reported in many countries around the world. Coronaviruses are positive-sense single stranded RNA viruses. Coronaviruses belong to the subfamily Orthocoronavirinae that has been divided into i.e. alpha, beta, gamma, and delta genera.[3]

The current approved laboratory approach for diagnosing SARS-CoV-2 acute infection is RT-qPCR in respiratory samples. RT-qPCR, on the other hand, necessitates the use of specialized equipment and qualified laboratory employees who are knowledgeable with molecular procedures. Furthermore, molecular tests are costly and laborious. On the other hand, Enzyme-Linked Immunosorbent Assay is cheap, easy to perform, and repaid in the detection of SARS-CoV-2. Ag Respi-Strip is a 15-minute dipstick ICT test that detects SARS-CoV-2 antigens in the nasopharyngeal sample.[4]

Salivary fluid is an exocrine secretion of salivary glands that is 99 % water and contains a range of electrolytes, mucus, enzymes, and other antimicrobial agents. The average daily saliva output of a healthy person ranges between 1 and 1.5 L. Saliva is an essential fluid for keeping and maintaining the integrity of oral tissues and has been employed as a non-invasive source of research for a variety of disorders.[5]

The identification of SARS-CoV-2's RNA from nasopharyngeal swabs (NPS) is the acceptable known technique for diagnosing coronavirus illness (COVID-19). However, there are some concerns to using NPS like required specialized consumables [6], hazards to healthcare personnel, and the need to use personal protection equipment.[7] In this regard, saliva is a good candidate for detection of SARS-CoV-2 because (1) is non-invasive and may be self-administered and causes less patient discomfort, (2) less expensive in analysis, and (3) most significantly, possesses a lower danger of SARS-CoV-2 contamination among healthcare workers.[7] Wang *et al.* (2004) reported the affordability of saliva fluid for the viral load of SARS-CoV and found that saliva contains a higher load as compared to throat wash.[8] In other studies, To *et al.* compared saliva and nasopharyngeal swabs for detection and viral load of SARS-CoV-2 and found concordance in result.[9] Vaz *et al.* further emphasized the use of saliva as it can be collected outside hospitals or health care centers area. Moreover, a large population would be screened timely.[10]

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