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SHORT COMMENTARY

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Dental and Oral Care Under Clouds of COVID-19

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ABSTRACT

Coronavirus (SARS-CoV-2) made the headlines after its initial breakout in Wuhan, China in December 2019 . Viral by genome, lethal by nature, strongly contagious by character, it succeeded in making a new chapter in everyone's life in a very short span making it a pandemic. Despite the extensive efforts to limit its effects we stand at a point where more than 50 million people have lost their lives battling COVID. Its widespread growth has raised many concerns for global health, particularly health professionals and dentists precisely. As dentists are more prone to get affected in the course of their occupation, this review is an attempt to briefly summarize the virus and various protocols to be practiced by the dentists in their practices to protect their own health.

KEYWORDS: COVID-19, Dental Practice, Infection Control

BACKGROUND

No one could have imagined that the end of the year 2019 will witness the historic birth of one of the most deadly, an abstruse virus, the severe acute respiratory syndrome coronavirus (SARS-CoV-2). COVID-19 which has strangulated the world by spreading its tentacles in all spheres of life within no time, initiated as a pneumonia outbreak in Wuhan, China. Before anyone could have understood the virus WHO declared it as pandemic emergency on 11th March 2020 involving more than 216 countries in the world.[1]

Lethality of this virus can be envisioned as statistical figures are strongly petrifying. Till mid-January 2021, this pandemic has affected over 95 million people and resulted in 52 million confirmed deaths worldwide out of which India still holding a second position after United States with over 10 million confirmed cases and 1,50,000 confirmed deaths which is increasing everyday with an average of 0.12%.[2] Dental specialists will have to ensure stringent infection prevention and control to prevent its nosocomial spread. This article is aimed to provide a brief overview of this virus and to minimize its spread in dental office.

INTRODUCTION

The SARS-Cov-2, previously named 2019-novel coronavirus by the World Health Organization (WHO), is a beta-coronavirus containing an enveloped, non-segmented, positive-sense RNA genome with high rates of mutation and recombination.[3] Initially, it started as a zoonotic infection, followed by human-to-human transmission. SARS-CoV-2 uses angiotensin-converting enzyme (ACE-2) which is found in the lower respiratory tract as its entry receptor. It is transmitted through both microdroplets due to direct proximity (a distance less than 2 metres and an exposure duration greater than 15 minutes) and core droplets that remain suspended in aerosol. Its transmission has been mainly described through inhalation/ingestion/direct mucous contact with saliva droplets with the incubation period ranging from 5 to 14 days.[4] It is necessary to establish a clinical protocol to be applied in the working environment to avoid new infections and progressive virus spread. The sudden spread of SARS-CoV-2 has determined the need to modify both preventive and therapeutic protocols in dental practice.[5]

Presently patients are trepidated from disclosing the past medical history to clinicians particularly related to the COVID which could be due to many attributable factors including fear of getting isolated and quarantined as per government protocols, fear of postponing of their dental treatment and one section of the society even take it as social stigma too. Therefore, the safety of the dentist cannot be risked at the will of the patient.

PRE- TREATMENT PROTOCOLS

First and foremost a step towards this is teledentistry which includes telescreening, teletriage, and

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teleconsulting. If physical presence of the patient is unavoidable in the clinic only then patient should be called on pre-booked appointment.[6] Before allowing any patient into the dental office, his/her temperature and vitals including oxygen saturation must be recorded and patients should made to sit in the waiting area with social distancing following the protocols and patient should be provided with the minimum 70% ethanol-based hand sanitizer, disposable head cap, face mask, hand gloves, shoe cover and disposable patient gown.

The clinic staff shall be equipped with personal protective kits (PPE) and should start the screening after donning of all the particulars of the kit including double disposable gloves, surgical head cap, eye shield, N 95 mask, face shield, shoe covers and overall protective gown.[7] The European Standard classifies filtering facepiece respirators (FFP) into three categories: FFP1, FFP2 and FFP3 with minimum filtration efficiencies of 80%, 94%, and 99%. Consequently, FFP2 respirators are recommended for use in the prevention of airborne infectious diseases[8] as they are approximately equivalent to N95.

INTRA TREATMENT PROTOCOLS

Detailed medical history regarding the symptoms of COVID-19 (fever, cough and/or shortness of breath, sore throat, runny nose, diarrhea, lethargy discoloration of fingers or toes, rash of skin, and loss of taste and smell) must be investigated for every single patient and COVID testing should be advised if any positive symptomatic history is observed. Isolation room with negative pressure should be allocated for treatment of any suspected COVID-19 patients to minimize the exposure of patients and staff and an additional application of a portable high-efficiency particulate air (HEPA) filter may be considered.[9,10]

Aerosol production must be reduced for all patients and every patient should be considered carrier and the use of 3-way syringes, high-speed handpieces, and ultrasonic scalers must be avoided as far as possible. To prevent debris and fluids getting expelled or aspirated anti-retraction or electric friction grip hand pieces must be used with rubber dam. Aerosol production can be minimized by low- or high-volume suction. In radiography, extra oral radiography is favoured over intraoral techniques to reduce saliva production and gag reflex.[11]

POST-TREATMENT PROTOCOLS

Instruments should be cleaned, disinfected, and sterilized, while all disposables should be presumed to be infected and discarded appropriately. Ethanol, 0.1 and 0.5% sodium hypochlorite, and glutaraldehyde can be used as they decrease coronavirus infectivity and Hydrogen peroxide vaporizer can be utilized for operatory decontamination.[12]

CONCLUSION

As events are unfolding rapidly all dental practitioners should be abreast with the latest news and guidelines. This narrative review has some limitations. As this is a current emergency, in the literature there is a limited and heterogenous number of primary sources directly related to the repercussion of SARS-CoV-2 on the dental discipline. Further studies are needed in the future.

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