

Dealing with Covid-19 in Dentistry

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ABSTRACT

The entire global community has been gripped by coronavirus 2 pandemic which was first reported in Wuhan city of China in December 2019. Although, all possible efforts are being made by the countries to contain the virus, but the cases of Covid-19 are still on rise. This virus primarily spreads through respiratory droplets and contact with the infected person. As the dental surgeons treat emergency and urgent dental procedures on patients which might have the virus, they should take extreme care to prevent nosocomial spread of infection. This article highlights the challenges in dentistry and treatment protocol as well as precautions to be taken by the dental surgeons in present times.

Introduction:

International Committee on Taxonomy of Viruses (ICTV) named the new coronavirus as

severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on 11 February 2020.⁽¹⁾

The reason for choosing this name was the genetic relationship of new coronavirus with the virus responsible for the SARS outbreak in the year 2003. Despite this relation, these two viruses are different from each other. World Health Organization (WHO) on 11 February 2020 announced the name of the new disease as COVID-19.⁽²⁾ The first evidence of the novel β -coronavirus (2019-nCoV), characterized by severe pneumonia, was reported in Wuhan city of China.⁽³⁾ WHO declared this viral pneumonia as public health emergency on 30th January 2020.^(4,5)

Global/Indian Scenario:

According to the [WHO Coronavirus Disease \(COVID-19\) Dashboard](#), total confirm cases are 9,472,473 with 484,236 deaths reported globally as of 26/06/2020.⁽⁶⁾ In India, the total confirmed cases are 490,401 with 15,301 deaths.⁽⁶⁾

Common clinical symptoms:

The common clinical symptoms of this virus infection include fever, myalgia, cough, or fatigue.⁽⁷⁾ The less common symptoms include headache, sputum production, hemoptysis, and diarrhoea. Radiologically, the most common Computerized tomography (CT) finding are ground-glass opacity and bilateral patchy shadowing.⁽⁸⁾

Possible Transmission Routs:

Dental professionals should be aware of possible routs of transmission of COVID-19 during the treatment of such patients. The possible routes of spread of the virus include:

1. Direct Transmission (Cough, Sneeze, and Droplet inhalation)⁽⁷⁾
2. Direct contact with eye, mucous membrane.⁽⁹⁾

3. The virus also detected in the stool of an infected person after 7 days of illness.⁽¹⁰⁾

However, further investigations are awaited to stablish the feco-oral transitions of the virus.

Challenges in Dental Practice:

There is high affinity of virus to human angiotensin converting enzyme 2 (ACE-2) positive cells which are abundant in salivary glands.⁽¹¹⁾ This makes the situation critical for the dentist and supporting staff. They are required to prevent themselves from aerosol contaminated with saliva and other potentially infective oral fluids during the treatment of positive or suspected patients.^(12,13) Research on different human Corona viruses concluded that inanimate surface remains infective for a long time up to 9 days. This duration depends upon type of material and surrounding temperature etc.⁽¹⁴⁾

Therefore, in the present scenario, three major concerns of a dental surgeon while treating a patient include direct contact with infected individual, contamination by droplet and aerosol, and touching a contaminated surface.

In view of these facts, it is extremely critical time for dental professionals to decide the emergency patients and what treatment should be offered to them.

Treatment protocol in Covid-19 situations:

Ministry of Health and Family Welfare has given clear guidelines for dental professionals in Covid-19 pandemic situation.⁽¹⁵⁾ Some of the important points of these guidelines are summarized below-

Screening of the patients:

- Only emergency and urgent procedures to be undertaken in dental offices.

- The assessment of the patient can be done by tele screening. The current and past medical history to be recorded by telephonic interview to rule out the possibility of infection with coronavirus. The screening questions should particularly focus on the symptoms of Severe Acute Respiratory Illness (SARI) such as fever, cough and or shortness of breath. Symptoms of Influenza like illness such as fever, cough, running nose and sore throat should also be analysed.
- In case, there is any positive response, the treatment should be postponed for 3 weeks if there is no dental emergency.

Tele consulting:

- If the requirement of emergency management is not identified based on the telephonic screening, the patient should be advised medications and other local measures to manage the dental problems.
- If there is need of the emergency/urgent treatment, the patient can be seen in the dental offices after calculation of the risk and benefits associated with each treatment.

Patient handling in dental office:

- It is advised to entertain those patients in the dental office whose history is already recorded by telephonic screening and who have prior appointment.
- Body temperature of the patient should be recorded at clinic entrance and a written informed consent should be obtained.
- Patient should be discouraged to wear/bring any accessories and using the dental office washrooms.

- 10 ml of 0.5% PVP-I solution should be used as a mouth rinse for 60 seconds.
- Waiting chairs should be kept distantly, preferably at one meter.

Precautions to be taken in dental office:

The dental surgeons must follow standard as well as airborne and contact precautions along with hand hygiene practices and appropriate use of personal protective equipment (PPE) to prevent the spread of infection. American Association of Endodontists has given following recommendations for the management of dental patients ⁽⁷⁾

- Dental surgeons should not treat COVID-19 suspected/confirmed patients in a routine dental setting. Negative pressure treatment room or Airborne infection isolation rooms (AIIRs) should be used to treat these patients.
- In case of need, health care centres with AIIRs and anticipatory knowledge would help dentist to provide the urgent dental care.
- Clinic premises, surfaces, instruments, and equipment etc should be cleaned/sanitized/sterilized as per the standard protocols/guidelines.
- Minimum invasive technique along with minimum aerosol generation techniques should be used.
- Rubber dam should be used, whenever possible, to reduce the contaminated aerosol.
- Wherever possible, extraoral radiographs should be utilised. Intraoral radiographs should be restricted because of possibility of excessive salivation and gag reflex.

- Cross-infection risk can be reduced by using disposable, single-use devices, and instruments.

As the dental surgeons are considered at a great risk of getting infection of coronavirus due to the nature of the procedures performed, extreme care and precautions should be taken by them to prevent themselves as well as supporting staff.

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