



Covid 19 - A New Normal for Dentistry during Pandemic

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Abstract

The corona virus disease also known as COVID-19, is a viral infection that first reported in Wuhan, China in last month of 2019, which rapidly involve the most of countries in world. Covid-19 infection transmitted through droplet, when a person is in close contact with Covid-19 positive person. Since dental professionals has an unique operatory environment which involve close examination of oral cavity and aerosol generation during the clinical procedures, the risk of Covid-19 transmission from an infected patient is very high. Present article provides the insight of Covid-19 infection and precautions and considerations to the practice dentistry in this pandemic.

Keywords: Covid-19; Dentistry; Pandemic

Introduction

The corona virus disease also known as COVID-19 is a viral infection that first reported in Wuhan, China in December 2019, which rapidly involve the most of countries in world [1]. Authorities of World Health Organization have reported more than 35 million confirmed case of Covid-19 with over 1 million Covid-19-related deaths globally. The incubation period for individual infected with Covid-19 infection is between 2 to 14 days [2].

Fever, dry cough, sore throat, loss of taste, loss of smell (anosmia), or tiredness are the most common symptoms at onset of illness and headache, haemoptysis, nausea, vomiting and diarrhoea are the less common symptoms [3]. Some patient may report difficulty in breathing or shortness of breath. Pneumonia is also developed in some cases which can be seen on chest X-ray or chest CT. Novel corona virus infection primarily target lung and most common symptoms is acute respiratory distress syndrome (ARDS), ef-

fect were also seen in other vital organ such as heart (acute cardiac injury), kidney (acute kidney injury), liver (liver impairment) and death can occur in severe cases [4,5].

The use of dental instruments such as airtor or ultrasonic scalers generate significant amount of aerosol particle which mainly contains water, blood, saliva, microorganisms, and other debris. Inhalation of aerosol particles generated during dental treatments is very risky as dentists can be exposed to the infection [6]. Therefore, it is the need of the hour for dental professionals to update their knowledge regarding disease control and modify their clinical strategies recommended by the authorities to provide safe environment for themselves and their team against infections [7].

Present article provides the insight of Covid-19 infection and precautions and considerations to the practice dentistry in this pandemic.

Covid-19 infection in healthcare workers [8]

Health care workers are at higher risk for covid-19 with high morbidity, transmission can occur due to respiratory droplets or emerging evidence suggests that it may also be transmitted through contact or fomites.

Guidelines for dental professionals in Covid-19 pandemic situation [9-11]

Modification required for dental set up can be divided in following three phases:

- Phase I - Preparatory phase.
- Phase II- Implementation phase.
- Phase III - Patient follow-up and review.

Phase I: Preparatory phase

Preparation of dental clinic ventilation and air quality management

Maintain air circulation through a frequent opening of windows and using an independent exhaust blower to extract the room air into the atmosphere. HEPA air filter system and UV light may be used.

Preparation of clinic entrance, reception and waiting

Display alerts at the clinic entrance and waiting areas about use of mask, hand sensitization, distancing disposal of contaminated waste.

Use of glass/plastic protective barrier at the reception desk or registration counter help in reducing the chances of infection and ensure safety of staff members. There should be provision of three-layer masks, head caps, shoe covers and sanitizers at reception desk, as well as in waiting area.

Changing room

Separate dedicated area to be available for dentist and other staff members to wear personal protective equipments and donning and doffing of PPE kit.

Sterilisation room

Dedicated and trained staff should be there to take care of all the instruments that include transport, cleaning, drying, sterilisation (as per manufacture's instruction), storage and testing the quality of sterilisation and maintaining the sterilization record.

Equipment and instrumentation

Dental operatories should be equipped with following equipments:

1. High volume extra oral suction
2. Fumigation systems
3. HEPA air filter system
4. Infrared thermometer
5. Pulse oximeter
6. N95 masks
7. Appropriate PPE kit
8. Non touched or automatic sanitizer dispenser.

Disinfection of dental clinic

According to the available literatures corona virus has ability to survive in the environment for several hours up to days. Therefore, it is necessary to disinfect the operatory area as before their re-use.

Surface disinfection

- **Floors:** 2 Step cleaning procedure either with detergent and water or with freshly prepared 1% sodium hypochlorite.
- **Rest of the surfaces:** Freshly prepared 1% sodium hypochlorite is used for non metal surface. For metallic surface like window, keys, door handle, etc. 70% alcohol is used to disinfect the surface. Frequency: it should be done after every patient.

Phase II implementation phase

Tele-screening/tele dentistry

Tele dentistry is a safe, convenient approach to resume dental practice during this pandemic. All instruction to the patient can be delivered effectively and at the same time dentist can also assess the need of the dental treatment.

Current medical history and past history

Complete evaluation of current and past medical history particularly pertaining to symptoms of covid-19 infection (fever, cough, chills, sore throat, headache and shortness of breath) must be analysed. All non-emergency dental treatment should be postponed for 3 weeks if patient give any positive response to these questions.

Arrival of patient at dental clinic

It is compulsory to all the patients to wear the surgical or similar masks at all times, remove footwear. Perform hand hygiene with

alcohol-based hand rub or soap and water. Taking temperature of every patient before initiating any dental procedure.

It has been reported that pre-procedural mouth rinse with povidone-iodine (PVP-I) in form of mouthwashes have a prophylactic effect on covid-19 transmission.

Personal protection in the operatory

For examination and non-aerosols producing procedures only wear a triple layer surgical mask and protective eyewear/face shield and gloves. It is advisable to wear N95 face masks for high risk procedures. Surgical mask can be used over the N95 masks to increase its shelf life after. Dentist and dentist assistant should wear personal protective equipments while treating the patient. Use of rubber dam is also helps reducing the spread of infection.

Phase III patient follow-up and review

It is mandatory to review patient health status telephonically after 24 hrs and in a week time if patient has developed any symptoms of covid-19 than appropriate action should be taken.

Conclusion

Since dental professionals involve close contact with patient and aerosol production during, the risk of Covid-19 transmission from an infected patient is high. As the number of Covid-19 cases may increase in future, dental professionals should be well informed and educated about not only the signs and symptoms of the condition but also how to follow stringent infection control measures in these cases.

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