

Orthodontic practices in COVID -19 period

¹Gurjeet Kaur Randhawa , ²Tushar Patil , ³Vijaysinh RamchandraTanpure , ⁴Firoj Meshram, ⁵Sneha Sonkate

¹Consultant, ² Professor and HOD Y.C.C.M & R.D.F's Dental College, Ahmednagar , ³Senior Lecturer Rural Dental College, PIMS, Loni , ^{4,5}Post graduate Aditya Dental College, Beed.

Corresponding Author: Gurjeet Kaur Randhawa, Consultant

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Abstract

The outbreak of COVID -19 have created a public health emergency of international concern. As the Coronavirus continues to spread in India, it is necessary for orthodontists allover to take strict and effective infection control measures in clinics to prevent further spread and risk of cross infection that can be very high between orthodontist, patients and staff. This article is meant to shed light on relevant guidelines and measures to prevent nosocomial infection in orthodontic practices.

Keywords: Covid -19, WHO, CDC, SARS, Infection.

Introduction

World Health Organization (WHO) on 30 January 2020 announced that the outbreak of COVID -19 had constituted a public health emergency of international concern. COVID-19, is a beta coronavirus—one of four different categories of coronaviruses categorized by the Centers for Disease Control and Prevention (CDC).This virus belongs to the same family as MERS (Middle East respiratory syndrome) and SARS (severe acute respiratory syndrome). As Tedros Adhanom Ghebreyesus, director

general of the World Health Organization (WHO), mentions -This is not SARS, it's not MERS, and it's not influenza. It is a unique virus with unique characteristics.The incubation period of COVID-19 has been reported to be 5 to 6 days on average and to be as long as 14 days .The symptoms ranges from mild to severe . Common symptoms are dry cough , fever ,sore throat, headache, body aches , loss of sense of smell and taste , difficulty in breathing and chest pain .Few people having coronavirus have been reported to be a symptomatic.The fatality rate of COVID-19 is 0.39% to 4.05%which is lower than that of SARS (severe acute respiratory syndrome; ≈10%) and MERS (Middle East respiratory syndrome; ≈34% (Malik et al. 2020) and higher than that of seasonal influenza (0.01% to 0.17%)^{1,10}.The way and the speed with this virus is spreading in world generally and in India particularly it is necessary for Dental practitioners to make strict measures to control the spread in clinical practise as our profession is categorised as high risk profession for the COVID -19 spread .The cross infection can be minimised by taking measures as

discussed in this article. As reported by government on 26 August 2020, India has crossed 32 lakh mark on COVID - 19 cases and number of deaths due to COVID- 19 nears around 60,000. The community transmission has started in several parts of country. With the country unlocking , the spread is rapid .After around 230 scientists over the world claimed over airborne spread of disease, WHO has alerted about the airborne mode of transmission of disease . This has raised the concern again world wide and particularly amongst health care workers . So it utmost important and our national duty to take all measures necessary to prevent the spread in Dental Clinics.

Transmission and spread

The virus is likely to spread mainly from person to person including

1. Between people who are in close contact with one another within about 6 feet.
2. Through respiratory droplets produced when an infected person coughs or sneezes. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into lungs.
3. It may be possible that person can get COVID-19 by touching a surface or object that has SARS COV -2 on it and then touching their own mouth nose or possibly their eyes but this is not thought to be the primary way the virus spreads .
4. People are thought to be most contagious when they are most symptomatic.
5. Some spread might be possible before people show symptoms^{2,14} .

Basics for prevention of disease transmission

1. Thorough and frequent hand washing by clinician ,patients and workers using soap and running water .

In case soap and running water not available, alcohol based hand rubs with at least 60% alcohol should be used⁵ .

2. Practice to increase physical distance among clients by giving proper appointments schedules.
3. Follow respiratory etiquette, like covering mouth when coughing and sneezing.
4. Promote use of face masks by clients and workers .
5. Encourage patients and staff to stay home if they are sick .
6. Practice regular house keeping ,routine cleaning, disinfecting of surfaces equipment and other elements of work place (follow instructions for use of all cleaning and disinfectant products like concentration, application method contact time, Personal Protection Equipment).
7. Provide dustbins for patients and workers tissue disposals.
8. Discourage workers and clients to use each other's tools ,phones² .

Policies and procedures for prompt identification and isolation of sick people

Prompt identification and isolation of potentially infectious individuals is critical step in protecting clinician ,staff and patients. Inform and encourage staff and patients to self

Monitor for signs and symptoms of COVID -19. When appropriate clinician and staff should develop policies for immediately isolating people with COVID-19 symptoms and signs.

Questionnaire for identification and isolation of sick

Coronavirus Disease (COVID – 19) Patient Triage Plan

Patient Screening Prior to Visit

Patient Name:

DOB

Home Address:

Phone Number:

Do you have any respiratory symptoms?

Yes

No

List symptoms:

Have you traveled outside of the City in the past 14 days?

Yes

No

If yes, where did you travel?

Have you been in close contact with a patient with COVID-19

Yes

No

Close contact: within 6 feet of symptomatic patient

Information review by:

For positive responses to travel or close contact and symptoms, contact your local or state health department. Have patient contact their healthcare provider.

Patient Screening Prior to Elective or Emergency Procedure

Patient Name:

DOB

Home Address:

Phone Number:

Do you have any respiratory symptoms?

If yes, ensure the patient is wearing a mask.

Yes

No

List symptoms:

Have you traveled outside of the City in the past 14 days?

Yes

No

If yes, where did you travel?

Have you been in close contact with a patient with COVID-19

Yes

No

Close contact: within 6 feet of symptomatic patient

Information review by:

For positive responses to travel or close contact and-symptoms, contact your local or state health department.

Engineering controls

These controls involve isolation from work related hazards. They reduce exposure to hazards without relying on workers behaviour and can be efficient solution to implement .For examples

1. High efficacy air filters.
2. Increased ventilation in the rooms.
3. Negative pressure ventilation for aerosol generating procedures.
4. The 4-handed technique is beneficial for controlling infection. The use of rubber dam and saliva ejectors with low or high volume can reduce the production of droplets and aerosols⁹.
5. Use special precaution related biosafety of specimens and disposal of biowaste^{1,2}.

Personal Protective Equipment (PPE)

While above basic and engineering control measures are more effective in reducing chances of exposure to SARS COV -2 ,PPE may also be required to prevent certain

Respirator

	N95 respirator	Surgical N95 respirator	Surgical mask
Function	Reduce small particles inhaled by wearers	Reduce small particles inhaled and expelled by wearer plus fluid resistance	Protect wearer from splashes and large droplets and minimise particles expelled from wearer
Covid19 applicability	With good fit protect wearer from small particles and have simpler design than N 95	With good fit protect wearer from small particles but required unless invasive procedure or risk of fluid exposure is present	Limited protection from exposure due to material type and air leakage due to loose seal to wearer 's face

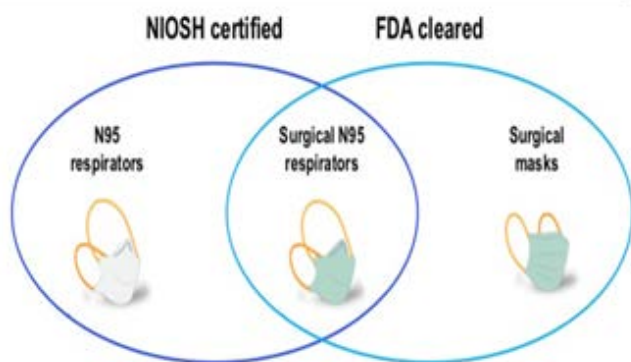
exposure. But remember PPE should not take place of other preventive measures . PPE for orthodontist includes gloves ,gown, face shield, respirator.

The PPE must be consistently and properly worn, regularly inspected , maintained and replaced as and when necessary.PPE should be properly removed cleaned and stored or disposed to avoid contamination of self or others or environment.

Orthodontic procedures

Major Surgical procedures like orthographic surgeries can be postponed till the situation is under control. Minor surgical can also be postponed until utmost important. If any emergency is there it is necessary to use high filters and anti septic mouthwashes and irrigation to minimise aerosols and microbial count . For bonding , use of rubber dam and single arch at one time can be helpful and utmost care to prevent cross infection by proper handling of materials^{5,9} . For routine check ups and appointments use of mouthwash n gargles is advised².

CDC states that only Healthcare professional (HCP) who are working in a sterile field or who may be exposed to high-velocity splashes, sprays, or splatters of blood or body fluids should wear surgical respirators, such as in operative or procedural settings. Social enterprise SmartAir notes that surgical masks offer little protection against small particles. According to CDC non surgical respirators protect the wearer from hazardous airborne particles while surgical ones act as barrier to fluids



Conclusion

The entire process may look different for the orthodontist and patient but not to worry the time is here to reopen the clinic to a new beginning. From treatment and waiting room and reception disinfection and with the strict and proper use of engineering controls and PPE, everyone's safety can be taken care of. Remember to constantly upgrade your knowledge related to COVID 19 spread and measures and means for prevention and control. Also follow all the recommendations from disease control centres according to situation.

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