

COVID-19: Special Precautions in Dentistry

Adel Bouguezzi^{1,2*}, Imen Cherni^{1,2}, Sameh Sioud^{1,2}, Hajer Hentati^{1,2} and Jamil Selmi^{1,2}

¹Faculty of Dental Medicine, Oral Health and Oro-Facial Rehabilitation Laboratory Research (LR12ES11), University of Monastir, Tunisia

²Dental Clinic of Monastir, Department of Medicine and Oral Surgery, Tunisia

ABSTRACT

A novel coronavirus (COVID-19) is associated with human-to-human transmission. Due to the unique nature of dentistry, most dental procedures generate significant amounts of droplets and aerosols, posing potential risks of infection transmission, the routes of transmission are direct contact, and droplet and possible aerosol transmissions. The aim of this article is to provide specific recommendations for dental practice and patient management protocol.

KEYWORDS: Corona virus disease 2019; Infection control; Dental practice management

SHORT COMMUNICATION

Why Dentistry is a Risk Branch?

Dental patients and professionals can be exposed to pathogenic microorganisms, including viruses and bacteria that infect the oral cavity and respiratory tract. Dental care settings invariably carry the risk of 2019-nCoV infection due to the specificity of its procedures, which involves face-to-face communication with patients, and frequent exposure to saliva, blood, and other body fluids, and the handling of sharp instruments. The pathogenic microorganisms can be transmitted in dental settings through inhalation of airborne microorganisms that can remain suspended in the air for long periods [1], direct contact with blood, oral fluids [2], or other patient materials, contact of conjunctival, nasal, or oral mucosa with droplets and aerosols containing microorganisms generated from an infected individual and propelled a short distance by coughing and talking without a mask [3], and indirect contact with contaminated instruments and/or environmental surfaces [1]. Infections could be present through any of these conditions involved in an infected individual in dental clinics and hospitals, especially during the outbreak of 2019-nCoV.

Strategies to Reduce Droplet Generation in Different Dental Disciplines

Up to now, there has been no consensus on the provision of dental services during the epidemic of COVID-19. Based on relevant guidelines and research (Guideline for the Diagnosis and Treatment of Novel Coronavirus Pneumonia (the 5th edition) [4] and the Guideline for the Use of Medical Protective Equipment in the Prevention and Control of Novel Coronavirus Pneumonia [5] released by the National Health Commission of the People's Republic of China, certain specific measures are discussed here for dental patient management in this epidemic period of COVID-19.

Preprocedural mouth rinse: Although the effect of preprocedural mouth rinse against coronavirus is still unknown, it has been proven that CHX is effective against several infectious viruses, including herpes simplex virus (HSV), human immunodeficiency virus (HIV), and hepatitis B virus (HBV) [6].

Endodontics: Rubber dam must be applied during endodontic treatment. Root canal treatment usually requires several endodontic

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Address for correspondence: Adel Bouguezzi, University of Monastir, Faculty of Dental Medicine, Oral Health and Oro-Facial Rehabilitation Laboratory Research (LR12ES11), Tunisia

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instruments and devices, therefore minimizing unnecessary hand contact with surfaces and equipment in the dental office to reduce possibility of fomite transmission [7].

Restorative dentistry and pediatric dentistry: Avoid using rotary instruments during cavity preparation. In selective cases, consider using chemochemical caries removal or atraumatic restorative techniques. If rotary instrumentation must be performed, rubber dam isolation should be applied.

Periodontics: Hand and ultrasonic instrumentation are equally effective in removing plaque and calculus deposits; if required, manual scaling and polishing are recommended [8].

Prosthodontics: Salivary suction must be performed with care to avoid gagging. Select and adjust trays to the right size for impression taking to avoid cough reflex. For highly sensitive patients, consider applying oral mucosa anesthesia to the throat before impression taking. During fixed partial denture or single-crown preparation, treatment alternation may be considered to incorporate rubber dam application. For example, design supra-gingival margin for posterior bridge or use a split-dam technique [7]. During removable partial denture or complete denture try-in, avoid touching other objects in the dental office after contacting patients' saliva. Upon removal from patient's mouth, dental prosthesis, impressions, and other prosthodontics materials (e.g., bite registration) should be thoroughly disinfected by a disinfectant having at least intermediate level activity.

Oral-maxillofacial surgery: When performing simple extraction, treat the patient in a supine position to avoid working in the breath way of a patient [7].

CONCLUSION

Dentists, by nature, are at high risk of exposure to infectious diseases. The emergence of COVID-19 has brought new challenges

and responsibilities to dental professionals. A better understanding of aerosol transmission and its implication in dentistry can help us identify and rectify negligence in daily dental practice. In addition to the standard precautions, implementation of special precautions could prevent disease transmission from asymptomatic carriers. These special precautions would not only help control the spread of COVID-19 but also serve as a guide for managing other respiratory diseases.

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