

Guidelines for Clinical Dental Practice for Oncology patients and COVID-19

Direcionamentos da prática clínica odontológica para pacientes oncológicos e COVID-19

Pautas para la práctica clínica dental para pacientes oncológicos y COVID-19

Ângela Guimarães Martins¹, José Lucas Sani de Alcântara Rodrigues², Fabrício da Silva Ribeiro³, Laise Nascimento Lobo⁴, Márcio Campos Oliveira⁵, Joana Dourado Martins Cerqueira⁶

Como citar: Martins AG, Rodrigues JLSA, Ribeiro FS, Lobo LN, Oliveira MC, Cerqueira JDM. Guidelines for Clinical Dental Practice for Oncology patients and COVID-19. REVISIA. 2020; 9(Spe.1): 618-30. Doi: <https://doi.org/10.36239/revisa.v9.nesp1.p618a630>

REVISA

1. Universidade Estadual de Feira de Santana. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0002-7281-8966>

2. Universidade Estadual de Feira de Santana. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0002-2135-6933>

3. Unidade Estadual de Feira de Santana. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0001-5548-4506>

4. Universidade Estadual de Feira de Santana, Graduate Program in Collective Health. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0002-4369-9662>

5. Universidade Estadual de Feira de Santana. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0002-1913-0417>

6. Unidade de Ensino Superior de Feira de Santana, Dentistry Department. Feira de Santana, Bahia, Brazil. <https://orcid.org/0000-0001-8606-0220>

Received: 12/04/2020
Accepted: 17/06/2020

RESUMO

Objetivo: realizar uma revisão integrativa a fim de compilar os conceitos vigentes sobre a prática odontológica para pacientes oncológicos e o COVID-19. **Método:** para a construção deste artigo foram realizadas buscas bibliográficas eletrônicas utilizando a base de dados Pubmed que abordassem o tema proposto até 2020. A busca dos artigos foi realizada em maio e junho de 2020 e para tanto, foi utilizada a string de busca (sars- CoV-2 OR coronavirus OR covid-19) e (dentistry OR oral health OR dental practice OR dental education). **Resultados:** foram selecionados 25 artigos lidos em sua versão completa, sendo ao final selecionados 16 artigos que apresentaram com clareza o protocolo clínico para atendimento odontológico durante a pandemia do COVID-19 e outros 09 artigos que relacionaram o atendimento odontológico de pacientes oncológicos durante a pandemia e perspectivas futuras. **Conclusão:** o protocolo para o atendimento odontológico em meio a pandemia do COVID-19 demanda adequação no ambiente de trabalho odontológico, um criterioso protocolo de equipamentos de proteção individual, bem como, uma mudança na relação com o paciente, lembrando sempre de humanizar o atendimento dos pacientes oncológicos.

Descritores: COVID-19; Odontologia; Câncer.

ABSTRACT

Objective: to carry out an integrative review in order to compile the current concepts on dental practice for cancer patients and COVID-19. **Method:** for the construction of this article, electronic bibliographic searches were performed using the Pubmed database that addressed the proposed theme until 2020. The search for the articles was carried out in May and June 2020 and for that, the search string was used (Sars-Cov-2 OR coronavirus OR covid-19) and (dentistry OR oral health OR dental practice OR dental education). **Results:** 25 articles read in their full version were selected, and at the end 16 articles were presented that clearly presented the clinical protocol for dental care during the COVID-19 pandemic and another 09 articles related the dental care of cancer patients during the pandemic and future perspectives. **Conclusion:** the protocol for dental care in the midst of the COVID-19 pandemic demands adaptation in the dental work environment, a careful protocol of personal protective equipment, as well as a change in the relationship with the patient, remembering to humanize the care of cancer patients.

Descriptors: COVID-19; Dentistry; Cancer.

RESUMEN

Objetivo: llevar a cabo una revisión integradora para compilar los conceptos actuales sobre la práctica dental para pacientes con cáncer y COVID-19. **Método:** para la construcción de este artículo, se realizaron búsquedas bibliográficas electrónicas utilizando la base de datos Pubmed que abordó el tema propuesto hasta 2020. La búsqueda de los artículos se llevó a cabo en mayo y junio de 2020 y para eso se utilizó la cadena de búsqueda (Sars-Cov-2 OR coronavirus OR covid-19) and (dentistry OR oral health OR dental practice OR dental education). **Resultados:** se seleccionaron 25 artículos leídos en su versión completa, y al final se presentaron 16 artículos que presentaban claramente el protocolo clínico para el cuidado dental durante la pandemia COVID-19 y otros 09 artículos que relacionaban el cuidado dental para pacientes con cáncer durante la pandemia y perspectivas de futuro. **Conclusión:** el protocolo para el cuidado dental en medio de la pandemia de COVID-19 exige adaptación en el ambiente de trabajo dental, un protocolo cuidadoso de equipo de protección personal, así como un cambio en la relación con el paciente, recordando humanizar el cuidado de los pacientes con cáncer.

Descritores: COVID-19; Odontología; Cáncer.

Introduction

In late 2019 cases referred to as pneumonia emerged in Wuhan, China. Shortly afterwards, the pathogen was classified as a new corona virus 2019 (2019 - n cov) belonging to a family of single-stranded RNA viruses, known as Coronaviridae, type β -coronavirus (β -VOC). Within a few months the disease spread worldwide, being named by the WHO as Corona Virus (COVID-19). In March 2020 it was declared a pandemic.¹⁻²

Commonly transmitted from person to person by hands, saliva, nasal secretions and contact with surfaces. Its transmission route then occurs, the virus transmitted through microdroplets and aerosol, spread mainly by coughing and sneezing. The distance and period of time that the particles remain in the air is determined by its size, settling speed, humidity and air flow.³

The main symptoms found are fever (87.9%), dry cough (7.7%), fatigue (38.1%). Secondly presenting diarrhea (3.7%) and vomiting (5.0%).⁴ Manifestations of the infection range from relatively mild (similar to a common cold) to severe (bronchitis, pneumonia and renal impairment).⁵ Patients may also have anosmia and dysgeusia.⁶

Since the beginning of the pandemic, it is clear that health professionals are affected in around 29% of infected cases, which is considered high. Inevitably, these professionals are in close contact with infected patients. Dental surgeons are at high risk of infection and may become potential carriers of the disease. This risk can be attributed mostly to the particularities of the dental clinical routine, which includes the generation of aerosols, the handling of sharp objects and the proximity of the professional to the patients' oropharyngeal region, due to face-to-face care.⁷⁻⁹

As a good proportion of patients infected with COVID-19 are asymptomatic, a major threat involves dentists and other members of the dental team, requiring these professionals to be extremely aware to deal with the disease and be able to control and manage its spread.⁸

In addition, if proper and judicious precautions are not taken, the dental office can potentially expose the patient to cross-contamination.⁷ As the understanding of this new disease is evolving, dental practices must be prepared to identify a possible COVID-19 infection and refer patients to referral centers, as well as the management of patients, especially those who already have conditions and more serious problems such as cancer patients.

Chronic diseases can lead to low immune function, generating a strong correlation between host immunity and the patient's prognosis of COVID-19. Therefore, immunosuppressed patients were added to the risk group for severe COVID-19. Therefore, immunosuppressed patients were added to the risk group for severe COVID-19 disease.⁴⁻⁹ SARS-CoV-2 has been found to use the angiotensin-2 converting enzyme (ACE2) cell entry receptor to infect humans. In patients with cancer and other comorbidities, the amount of circulating ACE2 is increased, favoring the infection of lung cells by SARS-CoV-2. This fact is accentuated by some drugs used to treat these diseases. More recently, obesity was included in the high-risk group, findings supported by current epidemiological evidence.¹⁰

With more than 18 million new cases per year worldwide, cancer affects a significant portion of the population. Cancer patients are more susceptible to infections, due to coexisting chronic diseases, poor general health condition and immunosuppression caused by cancer and antineoplastic treatments. As a result, these patients may experience more difficult results when infected with SARS-CoV-2 than other groups.¹¹ In addition, COVID-19 is expected to have a dramatic direct effect (among those infected) and indirect consequences (through the interruption of health services) for elderly cancer patients.¹²

To date, there are no specific antiviral treatments or vaccines for SARS-CoV-2. The treatment of affected people has been based mainly on symptomatic therapies. Some drugs have been used, but the final efficacy still requires further studies, as well as immunotherapy.⁴

Therefore, and among numerous questions, the question arises: How will the oral treatment of cancer patients be conducted with the advent of COVID-19? To this end, an integrative review was carried out to compile the current concepts on dental practice for cancer patients and COVID-19 based on scientific evidence possible due to the recent nature of the disease, in order to build and optimize an effective protocol.

Method

For the construction of this article, electronic bibliographic searches were performed using the Pubmed database that addressed the proposed theme until 2020. The search for the articles was carried out in May and June 2020 and for that, a search string was used, as follows: (*sars Cov-2 OR coronavirus OR covid-19*) and (*dentistry OR oral health OR dental practice OR dental education*).

Two authors individually analyzed the abstracts of the articles to verify which studies were relevant to the subject of this review. As inclusion criteria, articles were selected that were available in full online and that addressed the clinical protocols of dental care during the COVID-19 pandemic, while also emphasizing the particularities in the treatment of cancer patients. Studies published outside the established criteria and the databases adopted for the research were excluded. The relevant information from the selected articles was summarized in table format.

Results and Discussion

404 articles were initially selected. The titles and abstracts of these articles were read, 382 were excluded, as they do not address the clinical protocols of dental care.

The 25 articles were read in their full version, and at the end 16 articles were selected that clearly presented the clinical protocol for dental care during the COVID-19 pandemic (Table 1). The other 09 articles related dental care for cancer patients during the pandemic (Table 2).

Table 1- Dental care protocol in the context of COVID-19.

Protocol performed	Author / year
<p>Hygiene and PPE</p> <p><u>Hygiene</u></p> <ul style="list-style-type: none"> • The team must have shaved facial hair, clipped nails and avoid using accessories. • Remove all hand and wrist jewelry, check that the nails are clean and short, artificial nails or nail products are not recommended; • Cover all cuts or abrasions with a waterproof dressing; • The dentist must perform thorough hand washing for at least 60s using 60 to 85% hydroalcoholic alcohol solution; • Hand washing must include fingers, interdigital spaces, palms and back of hands and nails; • Drying done with a clean paper towel; • Friction with hydroalcoholic solutions should not be used exclusively, but must be regularly combined with " basic " and " regular " hand washing during the day. • Contact with surfaces such as drawers, computers, among others, must be minimized. <p><u>EPI</u></p> <ul style="list-style-type: none"> • The PPE protocol must be followed: the shoe covers (pro-foot), disposable hat, waterproof and disposable aprons, disposable gloves, protective glasses and visors and masks, the N95 or similar being recommended. Glasses and face shields should be disinfected with rubbing 70% ethyl alcohol before and after each procedure; • Disposable masks must be replaced between patients or even during treatment, if they get wet; • PPE must not be removed from the office because of the risk of the virus being suspended in the air; • PPE must be used as described in the instructions contained in the user manual and must be disposed of as special waste, always check the integrity of the PPE and, in case of violation of the integrity, dispose of the PPE immediately; • Do not wear personal clothes at work. Always wear a uniform with long sleeves and shoes; • Before washing the face shield, disinfect with a chlorine solution (500 mg / L) for 30 seconds. 	<p>PEDDITO <i>et al.</i>, 2020 ¹³</p> <p>FALLAHI <i>et al.</i>, 2020 ⁵</p> <p>PENG <i>et al.</i>, 2020 ²</p> <p>IZZETTE <i>et al.</i>, 2020 ¹⁴</p> <p>REN <i>et al.</i>, 2020 ¹⁵</p> <p>GE <i>et al.</i>, 2020 ¹⁶</p> <p>The French Society of Stomatology- 2020 ¹⁷</p> <p>LO GIUDICE 2020 ³</p> <p>PANESAR <i>et al.</i>, 2020 ¹⁸</p> <p>TURKISTANI <i>el al.</i>, 2020 ¹⁹</p> <p>KHADER <i>et al.</i>, 2020 ⁸</p> <p>AMBER ATHER <i>et al.</i>, 2020 ⁷</p>

Screening	<p>MENG, RUA, BIAN, 2020²⁰</p> <p>PEREIRA <i>et al.</i>, 2020²¹</p> <p>PENG <i>et al.</i>, 2020²</p> <p>IZZETTE <i>et al.</i>, 2020¹⁴</p> <p>REN <i>et al.</i>, 2020¹⁵</p> <p>GUO <i>et al.</i>, 2020²²</p> <p>LO GIUDICE 2020³</p> <p>PANESAR <i>et al.</i>, 2020¹⁸</p> <p>TURKISTANI <i>et al.</i>, 2020¹⁹</p> <p>AMBER ATHER <i>et al.</i>, 2020⁷</p>
Care for the environment	<p>FALLAHI <i>et al.</i>, 2020⁵</p> <p>PENG <i>et al.</i>, 2020²</p> <p>IZZETTE <i>et al.</i>, 2020¹⁴</p> <p>REN <i>et al.</i>, 2020¹⁵</p> <p>GE <i>et al.</i>, 2020¹⁶</p> <p>The French Society of Stomatology – 2020¹⁷</p> <p>LO GIUDICE 2020³</p> <p>KHADER <i>et al.</i>, 2020⁸</p> <p>AMBER ATHER <i>et al.</i>, 2020⁷</p>

<p>In the case of personal objects entering the operating rooms, these objects must be placed in special sealed bags;</p> <ul style="list-style-type: none"> • Ensure that hand sanitizer is available for patients and companions, possibly at the entrance to the office; • Remove potentially contaminating objects from waiting rooms (magazines, etc.); • Always allow fresh air to circulate between one patient and another and often in the waiting room. This action can be performed by opening the windows, taking care of the influx of air or using medical grade air purifiers; • Regularly sanitize common and operational areas, non-medical equipment, and surfaces accessible to the public (door handles, chairs, benches, etc.); • Have only the material strictly necessary on the surfaces of the operational areas; • Negative pressure treatment rooms / isolation rooms for airborne infections; • Cleaning and disinfection of the office must be done with the Dental Surgeon and the assistant, still fully dressed. 	
<p>Clinical Procedures</p> <ul style="list-style-type: none"> • Postpone all non-emergency care • The procedures performed must produce a minimum of aerosols; • Procedures that induce coughing should be avoided or done with caution; • Extraoral radiographs and cone beam tomography should be preferred; • Four-handed technique, using a vacuum pump sucker to reduce aerosol production; • Absolute isolation must be used to minimize the production of aerosols, avoiding the use of the triple syringe, high rotation (recommends the use of “anti-retraction handpieces designed with anti-retractive valves”) and ultrasound; • Before each treatment, the patient must use a mouth rinse with 1% or 1.5% hydrogen peroxide or 0.2% povidone iodine, and 0.12% chlorhexidine digluconate is also recommended, due to its substantivity; • The dentist must choose to use low rotation and high power suction; • The use of conscious sedation can be used in patients with phobias or anxious people who can hinder the conduct of treatment. 	<p>MENG, RUA, BIAN, 2020²⁰</p> <p>FALLAHI <i>et al.</i>, 2020⁵</p> <p>PENG <i>et al.</i>, 2020²</p> <p>IZZETTE <i>et al.</i>, 2020¹⁴</p> <p>REN <i>et al.</i>, 2020¹⁵</p> <p>GE <i>et al.</i>, 2020¹⁶</p> <p>The French Society of Stomatology– 2020¹⁷</p> <p>LO GIUDICE 2020³</p> <p>PANESAR <i>et al.</i>, 2020¹⁸</p> <p>TURKISTANI <i>et al.</i>, 2020¹⁹</p> <p>KHADER <i>et al.</i>, 2020⁸</p> <p>DAR ODEH <i>et al.</i>, 2020²³</p> <p>AMBER ATHER <i>et al.</i>, 2020⁷</p>

Table 2- Particularities of dental care for cancer patients during a pandemic.

Particularities for dental care	Author/Year
Delays in cancer diagnosis	YUEN, <i>et al.</i> , 2020 ²⁴ ; DESIDERI <i>et al.</i> , 2020 ¹²
Worsening prognosis	DOLAN, 2020 ²⁵ ; CAI <i>et al.</i> , 2020 ²⁶
Maintenance of dental evaluation and care prior to antineoplastic treatment	MARTINS-CHAVES <i>et al.</i> , 2020 ¹⁰ ; KOCHHAN <i>et al.</i> , 2020 ²⁷
Disruptions in cancer treatment	DOLAN, 2020 ²⁵ ; CAI <i>et al.</i> , 2020 ²⁶
Suspension of dental treatments prior to cancer treatments	YUEN, <i>et al.</i> , 2020 ⁹ ; DESIDERI <i>et al.</i> , 2020 ¹²
Care in dental care: - Screening, pre-screening via phone and app - Teleconsultation - Medication - Clinical procedures - Forwarding - Continuous monitoring and counseling	PARASHAR <i>et al.</i> , 2020 ²⁸ ; KOCHHAR <i>et al.</i> , 2020 ²⁷ ; MARTINS-CHAVES <i>et al.</i> , 2020 ¹⁰ ; FINI, 2020 ²⁹ ; COULTHARD, 2020 ³⁰ WARNAKULASURIYA, 2020 ³¹ ; CINAR <i>et al.</i> , 2020 ³²

Discussion

The COVID-19 pandemic substantially altered the dynamics of dental care, with major changes being necessary in order to offer safe dental treatment for patients and professionals.⁷ These care becomes even greater when dental care needs to be offered to special patients, thus including cancer patients.³³

For the cancer patient, the COVID-19 pandemic has had an unprecedented impact on global health, affecting routines in different countries, creating chaos in health systems, profoundly affecting oncologists, nurses, dentists and patients who need guarantees, support and protocols that can minimize damage and mitigate future uncertainties. An international task force has been built and the experiences lived in each country bring expert guidance on changes in standard practice, seeking to ensure quality care for patients, professionals and families.¹²⁻³²

With the operating rooms closure, care centers and outpatient clinics were closed and thus biopsy procedures and imaging for patients suspected of head and neck cancer were limited, bringing inestimable losses to these patients. In this pandemic moment, in some parts of the world, there is a lack of access to COVID-19 antibody tests, further complicating the screening of patients with head and neck cancer⁹, and it is necessary to search for ways to mitigate these changes. and alternatives to mitigate the future repercussion of these events.⁹⁻¹²

Head and neck cancer (CCP), usually squamous cell carcinoma (CPB), is considered to be at high risk for local progression and needs to be managed as early as possible and all decisions must be based on a multidisciplinary approach. The outbreak of COVID-19 has a potentially disproportionate impact on these patients, with delays in treatment and worsening of the prognosis, in addition, respiratory effects can increase morbidity and mortality, an aspect of great agreement among the reviewed authors.²⁵⁻²⁶

In patients who are candidates for antineoplastic therapy, dental evaluation and pre-treatment should be performed, if possible²⁷⁻²⁸, but it can be a great challenge during the pandemic, mainly due to the high risk of infection for patients and professionals. Patients should be made aware of the complexity of not performing an adequate dental evaluation before RT, the risk of osteoradionecrosis and worsening dentition. Dental protectors can be used to reduce toxicity.²⁸

Following the worldwide effort to control the spread of the SARS-CoV-2 virus, many cancer centers have introduced pre-screening and screening approaches to filter and screen patients with symptoms suggestive of COVID-19. Pre-selection is carried out via telephone or digital applications, videos, which may occur 1 or 2 days before the next patient visit.²⁹⁻³²

The screening aspects addressed in the reviewed studies range from telephone screening that includes a short anamnesis to investigate the history of SARS-CoV-2 infection to symptoms developed by the patient, travel history and contact with possible infected persons.⁷ Some authors even include, in this anamnesis, questions pertinent to the dental symptoms that lead the patient to dental consultation.^{3,14,20,31} In this context, Peng et al. (2020)² proposes the creation of an anamnesis protocol that also includes measuring the patient's temperature, based on the responses and data found and designating the best way to approach the patient. This management ranges from staying in your residence with a 14-day quarantine to the possibility of dental care, if necessary. This conduct is corroborated by Amber Ather et al. (2020)⁷ and Turkistani et al. (2020)¹⁹ who affirm that a patient who generates suspicion of asymptomatic patients with elective treatment should reschedule the consultation and guide him to quarantine.

For cancer patients, these screenings check for symptoms such as new or worsening cough in the last 14 days, shortness of breath, muscle pain, fever, which may include assessment of the risk of exposure, including travel history or exposure to an individual with COVID-19. Challenging the fact that many cancer patients undergoing cytoreductive therapy, especially those with lung cancer, may have similar symptoms. In addition to those asymptomatic or pre-symptomatic that may show that symptom-based screening may not be enough.⁹

Even with limitations, there is a need for the insertion and optimization of teleconsultations, reinforced for cancer patients, minimizing risks of exposing patients and professionals to SARS-CoV-2, this is a trend of professionals and researchers.³⁵⁻³⁶ Alves et al. (2020)³⁷ state that virtual visits can facilitate assistance in oral medicine and function as support for established consultations, allowing for more effective screening of potentially urgent cases that require immediate clinical attention. Teleconsultations may be even more useful for patients at lower risk for cancer progress.¹⁰ Teleorientation is allowed

with regard to emergency management and dental care.²⁷⁻³⁸

The principles of biosafety and clinical dental care protocols introduced for the COVID-19 pandemic period and the future perspectives of these routines for the individual with cancer do not differ profoundly from what has been discussed for non-cancer patients. The main divergence is the degree of systemic complexity that patients diagnosed with cancer have, bringing broader restrictions, multidisciplinary analyzes and assessing the cost-benefit of any approach becomes even more crucial.^{1,29,36,39-40}

Thus, confirmed by the widespread agreement of the premise of using complete and suitable PPE for any procedures for cancer patients, taking care of the dental environment is a fundamental measure for the control of cross infection.^{3,5,7-8,14-17} This care needs to start in the reception environment^{3,16} through notices that instruct patients on the cough and sneeze label¹⁶, the removal of potentially contaminating objects, guidance for disposing of utensils in a trash bin, immediately after use and ensuring the hygiene of the leaving 70% alcohol available, in addition to offering bags for electronic devices and bags to be left in this environment.^{3,17,31} Spatial separation of at least 1 to 2 meters must be maintained between patients^{3,16,19} or limit one patient in the waiting room at a time²¹, avoiding delays in their appointments so as not to increase the number of patients in the waiting room.

In treatment environments, patients should be treated in isolated, well-ventilated rooms or with a pressurization system / particulate respirator / with negative pressure.^{7,19-20} It is important to note that human coronaviruses can remain viable on inanimate surfaces such as metal, glass or plastic for up to 9 days (average of 3 to 5 days), depending on the type of surface, the worst being plastic.³¹ Thus, cleaning inanimate surfaces is crucial. they can be effectively inactivated through chemical disinfection, and it is important that outpatient clinics and offices have an area that prevents cross-contamination between patients and allows careful cleaning at each service of these surfaces, especially in critical proximity to the operating area.^{3,5,7-8,14-16}

Despite COVID-19, patients with suspected cancer should be evaluated and treated carefully, avoiding the possibility of any unnecessary referrals.⁴¹ It is also worth noting that dentists and their teams should continue to provide routine care to patients without Covid-19 or asymptomatic patients with no history of close contact and discourage symptomatic patients from attending.³⁰ Since, centers specialized in the treatment of cancer patients recommend following guidelines from the Ministry of Health, which includes seeking referral centers for COVID-19 and in case of being on chemotherapy or immunosuppressive drugs, seek immediate assistance in the oncology treatment centers..

In clinical dental practice, in this context, procedures should be done cautiously. So that they should produce as few aerosols as possible¹⁴⁻²⁰, it being preferable, in these circumstances, to resort to the use of the high power suction with the vacuum pump, absolute isolation and low rotation with refrigeration instead of high rotation when possible.^{5,20-21} Manual instruments instead of water-cooled or ultrasonic decontamination devices.³⁸ Therefore, instruments such as high speed, triple syringe and ultrasound should be avoided as much as possible, as they produce many aerosols.^{5,14,21}

Procedures that induce coughing should be avoided or done with

caution, such as stimulating cough and vomiting trigger zones, including the base of the tongue, fauces, uvula, palate and posterior pharyngeal wall.^{20,40} In cases of extraction, the resorbable suture thread must be used.²⁰ So it is recommended to replace and/or sterilize the high-speed handpieces, if necessary, and low speed after each use between one patient and another and the use of 3-way turbines and units equipped with valves and anti-reflux systems.³ So, in caries curettage, perforate with a handpiece and conventional root canal treatment instead of rotary instruments.²³⁻³⁸ In addition, the use of conscious sedation can be used in patients with phobias or anxious patients who may hinder the conduct of treatment.²¹

For the treatment of all patients seen during the COVID-19 pandemic, special attention must be paid to hygiene care, with vigorous hand washing and use of 70% alcohol. All PPE is essential during any procedures²², as well as disposable protective measures must be used on chair surfaces and attached devices, stool and surfaces. Then, after the procedure, all disposable barriers must be removed and a high performance disinfection carried out and the PPE must not be removed inside the office due to the risk of the virus being suspended in the air. So that it is advised that the procedure can be done on average within 15 min to reduce the risk of infection.¹⁴ Consequently, the use of the technique in 4 hands is beneficial (o) in the control of contamination.²⁰ Many of these care procedures that were already widespread in clinical dental practice, an area that adopted careful standards of biosafety, which needs intensification and greater rigor.

After clinical treatments, care and advice prior to oncotherapy must be maintained and carried out, aiming to motivate and reinforce oral hygiene measures, information regarding the possibilities of injuries during cancer treatment and the actions that can be taken to mitigate these effects, in addition to advice to improve mineralization of teeth (fluoridated toothpaste, topical fluoride, mouthwash with 0.05% fluoride and 0.12% non-alcoholic chlorhexidine¹⁰⁻²⁷, corroborated by Coulthard (2020) 30 who claim that dentists should continue to provide routine care to asymptomatic patients for COVID-19.

It is also important to monitor during and after cancer treatment, especially with regard to caries and osteoradionecrosis. In case of symptoms, dental surgeons can request photos and radiographs, to help in the diagnosis, advise measures and offer support through video consultations. If the patient needs urgent treatment, the professional can provide even with a contingency plan, while following all the necessary infection prevention and control procedures.²⁷

One of the most intriguing and worrying aspects of the outcome of this study is that in the context of a pandemic, standard treatment of patients may not be possible within a period of time. Most therapy centers can be forced to use less than ideal treatments.⁴² And these changes in treatment paradigms necessary due to COVID-19, especially with regard to CCP patients, can greatly increase the chances of adverse situations in terms of quality of life, survival and development of future injuries. Invaluable damage that can generate long-term repercussions. With positive actions by researchers, health professionals and treatment entities, it is hoped that these challenges can be mitigated and that they can be turned into benefits for this population.

Conclusion

Based on the literature reviewed in this study, we can conclude that the protocol for dental care in the midst of the COVID-19 pandemic demands adaptation in the dental work environment, a careful protocol of personal protective equipment, as well as a change in the relationship with the patient and the principles that guide the practice of Dentistry. With regard to dental care for cancer patients in the context of COVID-19, it is important that there is a joint effort to allow treatment to be carried out safely, aiming at preventing future problems. It is worth mentioning that, due to the knowledge that this new disease is increasing every day, it can be said that the information contained here is incipient and under construction, being modified and expanded in the near future, establishing long-term concepts by scientific evidence of longitudinal studies at the population level.

References

1. Ahmed SF, Quadeer AA, McKay MR. Preliminary Identification of Potential Vaccine Targets for the COVID-19 Coronavirus (SARS-CoV-2) Based on SARS-CoV Immunological Studies. *Viruses*. 2020;12(3):254.
2. Peng X, Xu X, Li Y, Cheng L, Zhou X, Ren B. Transmission routes of 2019-nCoV and controls in dental practice. *International Journal of Oral Science* 2020; 12(1), 1-6.
3. Lo Giudice R. The Severe Acute Respiratory Syndrome Coronavirus-2 (SARS CoV-2) in Dentistry. Management of Biological Risk in Dental Practice. *International Journal of Environmental Research and Public Health* 2020; 17(9), 3067.
4. Wang Y, Wang Y, Chen Y, Qin Q. Unique epidemiological and clinical features of the emerging 2019 novel coronavirus pneumonia (COVID-19) implicate special control measures. *J Med Virol*. 2020;92(6):568-576. ..
5. Fallahi HR, Keyhan SO, Zandian D, Kim SG, Cheshmi B. Being a front-line dentist during the Covid-19 pandemic: A literature review. *Maxillofacial Plastic and Reconstructive Surgery* 2020; 42, 1-9.
6. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, Zhong NS. Clinical Characteristics of Coronavirus Disease 2019 in China. *New England journal of medicine* 2020; 382 (18), 1708-1720.
7. Amber Ather B, Nikita B. Coronavirus Disease 19 (COVID-19): Implications for Clinical Dental Care. *Journal of Endodontics* 2020; 46(5).
8. Khader Y, Al Nsour M, Al-Batayneh OB, Saadeh R, Bashier H, Alfaqih M, Al-Azzam S. Dentists' awareness, perception, and attitude regarding COVID-19 and infection control: cross-sectional study among Jordanian dentists. *JMIR Public Health and Surveillance* 2020; 6(2), e18798.
9. Yang J, Zheng Y, Gou X, Pu K, Chen Z, Guo Q, Zhou Y. Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis. *International Journal of Infectious Diseases* 2020; 94, 91-95.
10. Martins-Chaves RR, Gomes CC, Gomez RS. Immunocompromised patients and coronavirus disease 2019: a review and recommendations for dental health care. *Braz Oral Res*. 2020;34:e048.
11. Dai WC, Zhang HW, Yu J, et al. CT Imaging and Differential Diagnosis of COVID-19. *Can Assoc Radiol J*. 2020;71(2):195-200.
12. Desideri I, Pilleron S, Battisti NML, et al. Caring for older patients with cancer during the COVID-19 pandemic: A Young International Society of Geriatric Oncology (SIOG) global

perspective [published online ahead of print, 2020 May 10]. *J Geriatr Oncol.* 2020;S1879-4068(20)30215-0.

13. Peditto M, Scapellato S, Marciànò A, Costa P, Oteri G. Dentistry during the COVID-19 Epidemic: An Italian Workflow for the Management of Dental Practice. *International Journal of Environmental Research and Public Health* 2020; 17(9), 3325.
14. Izzetti R, Nisi M, Gabriele M, Graziani F. COVID-19 transmission in dental practice: brief review of preventive measures in Italy. *Journal of Dental Research* 2020.
15. Ren YF, Rasubala L, Malmstrom H, Eliav E. Dental care and oral health under the clouds of COVID-19. *JDR Clinical & Translational Research* 2020 (10), 1-9.
16. Ge ZY, Yang LM, Xia JJ, Fu XH, Zhang YZ. Possible aerosol transmission of COVID-19 and special precautions in dentistry. *Journal of Zhejiang University-SCIENCE B* 2020; 1-8.
17. Stomatology TFS. Practitioners specialized in oral health and coronavirus disease 2019: Professional guidelines from the French society of stomatology, maxillofacial surgery and oral surgery, to form a common front against the infectious risk. *Journal of Stomatology, Oral and Maxillofacial Surgery* 2020; 121(2), 155-158.
18. Panesar K, Dodson T, Lynch J, Bryson-Cahn C, Chew L, Dillon J. Evolution of COVID-19 Guidelines for University of Washington Oral and Maxillofacial Surgery Patient Care. *Journal of Oral and Maxillofacial Surgery* 2020.
19. Turkistani KA. Precautions and recommendations for orthodontic settings during the COVID-19 outbreak: A review. *American Journal of Orthodontics and Dentofacial Orthopedics* 2020.
20. Meng L, Hua F, Bian Z. Coronavirus disease 2019 (COVID-19): emerging and future challenges for dental and oral medicine. *Journal of Dental Research* 2020; 99(5), 481-487.
21. Pereira LJ, Pereira CV, Murata RM, Pardi V, Pereira-Dourado SM. Biological and social aspects of Coronavirus Disease 2019 (COVID-19) related to oral health. *Brazilian Oral Research* 2020; 34.
22. Guo J, Xie H, Liang M, Wu H. COVID-19: a novel coronavirus and a novel challenge for oral healthcare. *Clinical Oral Investigations* 2020; 1.
23. Dar Odeh N, Babkair H, Abu-Hammad S, Borzangy S, Abu-Hammad A, Abu-Hammad O. COVID-19: Present and Future Challenges for Dental Practice. *International Journal of Environmental Research and Public Health* 2020; 17(9), 3151.
24. Yuen KS, Ye ZW, Fung SY, Chan CP, Jin DY. SARS-CoV-2 and COVID-19: The most important research questions. *Cell Biosci.* 2020;10:40.
25. Dolan S. What is the impact of COVID-19 on head and neck squamous cell carcinoma patients?. *Evid Based Dent.* 2020;21(2):52-53.
26. Cai H. Sex difference and smoking predisposition in patients with COVID-19 [published correction appears in *Lancet Respir Med.* 2020 Apr;8(4):e26]. *Lancet Respir Med.* 2020;8(4):e20.
27. Kochhar AS, Bhasin R, Kochhar GK, Dadlani H. Provision of continuous dental care for oral oncology patients during & after COVID-19 pandemic. *Oral Oncol.* 2020;106:104785.
28. Parashar B, Chen WC, Herman JM, Potters L. Diretrizes específicas de locais de doenças para tratamento de radiação curativa durante 'cirurgia limitada' e 'evasão hospitalar': uma perspectiva de oncologia de radiação do epicentro da pandemia de COVID-19. *Cureus* 2020; 12 (5).
29. Fini MB. What dentists need to know about COVID-19. *Oral Oncology* 2020; 104741.
30. Coulthard P. Dentistry and coronavirus (COVID-19)-moral decision-making. *British Dental Journal* 2020; 228(7), 503-505.
31. Warnakulasuriya S. Protecting dental manpower from COVID 19 infection. *Oral Diseases* 2020.
32. Cinar P, Kubal T, Freifeld A, et al. Safety at the Time of the COVID-19 Pandemic: How to Keep our Oncology Patients and Healthcare Workers Safe [published online ahead of print, 2020 Apr 15]. *J Natl Compr Canc Netw.* 2020;1-6.

33. Dai WC, Zhang HW, Yu J, et al. CT Imaging and Differential Diagnosis of COVID-19. *Can Assoc Radiol J.* 2020;71(2):195-200.
34. Segelov E, Underhill C, Preen H, et al. Practical Considerations for Treating Patients With Cancer in the COVID-19 Pandemic [published online ahead of print, 2020 May 13]. *JCO Oncol Pract.* 2020;OP2000229.
35. Prasad K, Khatoun F, Rashid S, et al. Targeting hub genes and pathways of innate immune response in COVID-19: A network biology perspective [published online ahead of print, 2020 Jun 26]. *Int J Biol Macromol.* 2020;163:1-8.
36. Quinn KL, Fralick M, Zipursky JS, Stall NM. Further developments in the literature on RAAS inhibitors and COVID-19. *CMAJ.* 2020;192(26):E727.
37. Alves FA, Saunders D, Sandhu S, Xu Y, de Mendonça NF, Treister NS. Implication of COVID-19 in oral oncology practices in Brazil, Canada, and the United States [published online ahead of print, 2020 Jun 17]. *Oral Dis.* 2020;10.1111/odi.13493. doi:10.1111/odi.13493.
38. Volgenant CM, Persoon IF, de Ruijter RA, de Soet JJ. Infection control in dental health care during and after the SARS-CoV-2 outbreak. *Oral Diseases* 2020.
39. Alharbi A, Alharbi S, Alqaidi S. Guidelines for dental care provision during the COVID-19 pandemic. *The Saudi Dental Journal* 2020.
40. Martins-Filho PR, Gois-Santos VTD, Tavares CSS, Melo EGMD, Nascimento-Júnior EMD, Santos VS. Recommendations for a safety dental care management during SARS-CoV-2 pandemic. *Revista Panamericana de Salud Pública* 2020; 44, e51.
41. Jones D, Neal RD, Duffy SR, Scott SE, Whitaker K L, Brain K. Impact of the COVID-19 pandemic on the symptomatic diagnosis of cancer: the view from primary care. *The Lancet Oncology* 2020; 21(6), 748.
42. Forner D, Noel CW, Wu V, et al. Nonsurgical management of resectable oral cavity cancer in the wake of COVID-19: A rapid review and meta-analysis [published online ahead of print, 2020 Jun 10]. *Oral Oncol.* 2020;109:104849.

Correspondent Author

Joana Dourado Martins Cerqueira
Unidade de Ensino Superior de Feira de Santana
Eduardo Magalhães Subaé Av. ZIP: 44079-002,
Aviário. Feira de Santana, Bahia, Brazil.
martinsjoana_1@hotmail.com