

SYSTEMATIC REVIEW: THE ROLE OF ORAL MANIFESTATIONS IN THE DETECTION OF COVID-19 DISEASE IN ALGERIA

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Abstract: Since its appearance in December 2019, the new Corona virus made the world living an unexpected hard period, putting health authorities affront a big challenge especially in countries with fragile health system. In Algeria, the fragile health system and the unnecessary delay in announcing crucial measures have led to a huge lack of PCR test imposing health worker to detect Corona virus cases with clinical and imaging features. Dysgeusia, Dysosmia and aphthous are the most common oral signs of Covid19 infection's . Oral manifestations included also oral dryness, pulla, hemorrhagic crust, vesicule, , spontaneous bleeding, petechiae and white plaques. The most common sites of Covid-19 virus oral manifestation's are tongue(40%) , labial mucosa (36%), palat, gingiva and buccal mucosa. Reported in relationship with pulmonary and other extrapulmonary manifestations , the most common symptoms found are Dysgeusia (77%) and dysosmia (64%) , oral lesions including aphthous(34.4%), unilateral commissural fissures (30.5%), fissured tongue (19.5%) and erythema. At (88%), oral lesions were symptomatic, approximately equals in both genders (Male 50.7% , Female 49.3%). Stressed patients, patients with older age, immunosuppression and bad oral hygiene are more concerned by these manifestations. Although that these oral lesions can be directly due to Coronavirus infection or secondary resulting from the patient's immunity and systemic condition , it helped to create a new method of Covid19 detection's , especially when the lack of PCR tests was flagrant in Algeria.

Keywords: Covid-19, Oral lesions, PCR test, Dysgeusia, Aphthous, Dysosmia, Detection, Prevention, Contagiousness.

1. INTRODUCTION

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus ,this new virus discovered in China in December 2019 spread brutally and rapidly, its particular worrying does not include only its high contagiousness through direct contact , saliva and droplets generated (when an infected person coughs , speaks or after sneezing) requiring special hard protection measures , or the absence of acquired immunity or even its ununderstood case-fatality rate but also new symptoms that shows continuously such as skin and oral manifestations. ^[1] Even though fever, respiratory symptoms, fatigue, cough are initially considered major symptoms of Covid-19 infection, progressively , aspecific complaints of patients such as nasal congestion, loss of taste and smell , oral ulcerations have been the subject of a real explosion ^[2] , their role in Covid19 disease detection was highly recommended and well approved ; thus, taking emergency measures and necessary recommendations when patients presented only those oral symptoms without waiting for the availability of PCR tests helped enormously to avoid a sanitary disaster in Algeria.

The results of the previous statistics and the big panic created about the loss of taste and smell in the Algerian population both in reality and on social media were a serious incentive to look for the prevalence of oral manifestations concomitant with the Covid19 infection disease, and yet dental offices and oral health hospital services were strictly referred to emergencies, loss of taste and mouth ulcers were the main reason for consultation during the confinement period.

In this systemic review based on a literature search completed from December 2019 until February 2021, associated with our Algerian statistics, we prove the correlation between coronavirus disease and oral manifestations and their role in its diagnosis in Algeria.

2. METHODS

Sources of information

we searched PubMed library and Sciencedirect for published literature using keywords “COVID-19” or “coronavirus disease 2019” and “Oral manifestation” or “Oral lesions” in the abstract or title since December 2019 until Mars 2021.^[3]

Online data collection :

Due to confinement, our main method to collect data was using an online survey in which participated 500 patients who got recovered from Corona virus disease.

The survey included 20 questions about patient's age and gender, date of recovery from Covid19, existence or not of smell and taste disorders, their recovery or not yet, presence or not of oral lesions, their type, size and involvement site, with symptoms or not, consultation or not the dentist and the type of treatment taken.

One-to-One interviews :

We conducted a cross-sectional study of 100 recovered patients from Covid19 disease in Beni Messous Hospital (Algiers) and Frantz Fanon Hospital (Blida city).

All included patients were interrogated attentively then statistical results were carefully collected and analyzed.

3. RESULTS

Coronavirus 2019 (COVID-19) disease is a viral infection with several symptoms and variable severity of complications. Recent studies demonstrate dermatologic and oral alterations related to COVID-19 disease.^[3]

The most common oral manifestations in people with COVID-19 that we get after searching are taste disorder (77%) and smell disorder (64%), while oral lesions were aphthous in (34.4%) of patients, unilateral commissural fissures (30.5%) and fissured tongue (19.5%), these lesions were painful and symptomatic in (88%) of cases and sites of involvement were tongue (40%), labial mucosa (36%), palat, gingiva and buccal mucosa.

Oral lesions and taste and smell disorders were approximately equal in both genders (Male 50.7% , Female 49.3%), stress and poor oral hygiene increased significantly their appearance in positive tested patients.

Oral manifestations included also mouth dryness, spontaneous bleeding, petechiae, pulla, hemorrhagic crust and white plaques but with less and instable appearance percentage. In (87%), patients didn't consult and relied on traditional medicine while only (13%) of patients consulted by Telephone or in emergency services.

4. DISCUSSION

Most infected people with SARS-CoV-2 will develop mild to moderate symptoms, as fever, tiredness or dry cough, and it can also cause severe illness and even death.^[4] However; since up to 80% of Covid-19 patients are asymptomatic and as our research and previous researches show, nowadays smell and taste disturbances and oral ulcerations are no longer considered as an atypical symptom of infection with Corona virus 2019 but rather a real weapon of diagnosis especially in countries with a fragile health system, thus limiting the spread of the virus especially in patients with no altered general conditions.

The aim of this research is to prove and confirm that oral manifestations that appear during an infection with Corona virus 2019 are not random symptoms but rather almost stable signs.

I-Olfactory and taste disturbances

Despite that saliva is an essential mode of the Corona-19 virus transmission's , only few oral manifestations were reported⁵ , however dysgeusia (include ageusia and hypogeusia) is the most common sign and it was found in (77%) of Covid-19 confirmed cases, dysosmia (include anosmia and hyposmia) also is a very common symptom associated with (64%) of Covid-19 confirmed cases, both were nearly equal in both genders(50.7% male, 49.3% female).

Olfactory and taste disturbances due to Covid-19 are potential early markers, and helped in Algeria within the lack of PCR test to detect the disease at it's early stage.

Treatment of dysgeusia included zinc intake , as an essential trace element that contributes to the active center of approximately 300 enzymes , daily intake of 50mg orally administrated zinc showed its efficiency to improve taste and treat dysgeusia , however (70%) of patients have chosen home herbal remedies like cinnamon powder , lemon leaves, and coffee.

Regarding olfactory dysfunctions, deliberate sniffing of lemon, eucalyptus and mint for 1 minutes 4 times a day showed big efficiency in taste disturbance.^[5]

Meanwhile, a significant number of patients still suffer from loss of taste and smell even after recovery from Covid19 infection and use of drugs and herbal remedies , showing that the olfactory and taste impairments could in some cases present one of long-term affects of Covid19 or even a possible irreversible damage. There was a report of a 29 year old man recovered from Covid19 in December 2020 but still suffers until mars from taste and odor problems even after consultation, taking zinc and using natural home remedies , and often presents a metallic taste, an atypical sweet and taste.

II-Oral lesions

As for oral lesions, their appearance was not an early marker since for (50.7%) of patients oral lesions appeared simultaneously with systemic symptoms and (30.4%) appeared After systemic symptoms disappear.

Aphthous (34.4%) is the most common oral lesion found , presented as a painful ulcerations , from 2 to 10 mm in diameter, with a round or an oval shape. Commissural cheilitis (30.5%) and fissured tongue (19.5%) are also two types of oral lesions that have been frequently found. Site of manifestation is in descending order the dorsal surface of the tongue (40%), labial mucosa (36%), gingiva, palat and buccal mucosa.

In (88%) of cases, oral lesions were symptomatic (pain, itch , burning sensation) .^[6]

In this case, association of taste's loss and painful mouth ulcers was a real suffering for the patient.

During the confinement, because of the closure of the most dental clinics for four months except for emergencies, only (13%) of patients consulted because of oral lesions while others waited for spontaneous healing or used home herbal remedies. Treatment in dental clinics included chlorhexidine mouthwash, nystatin, topic or systemic corticosteroids, antibiotics, systemic acyclovir. ^[7]

Pomegranate peel extract, avoiding self-lacking the area, application of honey and controlling oral hygiene were treatment of choice in home.

The impact of painful ulcerations on the general health of the patient

There was a report of a 80 year old diabetic female who takes insulin and suffers from very painful oral ulceration concomitant with a covid19 infection transmitted by her son who is a nurse, the pain being rebellious to analgesic and natural remedies pushed her to avoid eating which provoked severe hypoglycemia.

This patient reports that these oral lesions were the worst and the most painful in her life.

Candidiasis and white plaques

An oral candidiasis was reported in a 42-year-old male patient with poor oral hygiene, under antibiotic therapy for urinary tract infection and azithromycin used to treat covid19.

Other rare oral manifestations

Hyposalivation, desquamative gingivitis, herpetic ulcers, hemorrhagic crust, spontaneous bleeding and petechiae are signs sometimes found in patients tested positive.

There was a report of a 67 year old male patient who tested positive and during his treatment suffered from a very uncomfortable mouth dryness that imposed him to increase his water intake.

5. CONCLUSION

The oral cavity is a complex organ with a huge number of local affections, but it is also a main health indicator because of manifestations with systemic origin, such as bacterial and viral infections. The dentist during his work should be attentive and consider any loss of smell and taste and sometimes oral ulceration as a very likely indicator of COVID-19 infection. With their recent re-opening and even if dental offices and primary health care centers are considered as a major source of contamination and transmission of COVID-19 disease; the dentist; after making sure that all protective measures have been taken, must contribute in diagnosis and orientation of COVID-19 infections suspected cases after well knowing its oral manifestations, especially when the world is facing a third dangerous wave and countries with weak health systems still suffer from a lack of PCR tests and delayed vaccination. Once receiving a positive patient, the dentist must relieve ulceration's pain by a suitable treatment and also reassure him and make him aware of the importance of reserving contact with people only when necessary and the necessity of using protective measures.

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