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A Review Article

Title:Otorhinolaryngology Manifestations of Covid-19 Patients Short Title: ENT Manifestations of Covid-19

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Abstract:

Objective:

Our main aim is to review the published literature under the ENT manifestations in COVID19 positive patients having underlying causes.

Materials and Methods:

We have read about 45 peer-reviewed Elsevier, springer, wild pub, Jama network, British health magazine, Pub Med, Wiley's online booksellers, Karger journals, Europe PMC, new England newspaper, American Roentgen ology journal, and Nature's Public Health Emergency Series. We read about 45 peer-reviewed articles. The authors then summarized, collected, and analyzed the findings of research that met these criteria for inclusion and exclusion.

Results:

According to the possibilities the ENT manifestations included sore throat in 49 patients, cough in 799 patients, rhinitis in 87 patients, fatigue in 415 patients, loss of sense of taste in 80, loss of sense of smell in 171 patients, fever in 959 patients, headache in 189 patients, nausea and vomiting in 64 patients was reported. It also had dyspnea in about 64 patients. non-ENT symptoms that

were more common and were more than the ENT manifestation were diarrhea in 9 patients, myalgia in 52 patients, hypertension in 79 patients, diabetes in 26 patients, heart disease in 20 patients, Urticarial in 15 patients

Conclusion:

ENT manifestations are not always the same as people suffering from COVID-19. They may vary with the underlying conditions such as hypertension, diabetes, and cardiovascular diseases as discussed in the article.

Keywords: COVID19, New Coronavirus, SARS-CoV-2, ENT, Ear, Nose, Throat, ENT, Ear, Nose and Throat, Larynx

Introduction:

SARS-CoV-2, the virus that causes COVID-19, is a new member of the coronavirus family, appeared in the Hubei region of China in late 2019 and quickly became a global pandemic. Although the virus can cause severe respiratory failure and even death in infected patients, it spreads rapidly and continues to spread among humans, as in most cases it can cause mild symptoms. or no symptoms.

WHO officially named the new illness caused by the SARS-CoV-2 virus "COVID-19" on February 11, 2020. The strong ability of eye transmission has contributed to the rapid outbreak. of COVID-19 in China and a possible global pandemic. On March 30, 2020, WHO announced a total of 638,146 confirmed deaths from COVID-19 and 30,039 cases (1).

The most effective strategy is to stop the spread of the virus and detect and isolate those infected in the early stages. The most common symptoms of COVID-19 are fever, cough, muscle aches, fatigue, and difficulty breathing. Also, ear, nose, and throat (ENT) symptoms have been identified as those caused by a virus, including loss of smell and/or taste (ASD). Rhinitis, Epstein-Barr virus, parainfluenza virus, and certain coronaviruses have been shown to cause upper respiratory tract infections, nasal infections, and rhinitis and can lead to sexually transmitted diseases (2). Although the pathology of STL production following infection with these viruses is unclear, there is an assumption that the virus or its spread in the central nervous system occurs due to traumatic injury. sense. Historically and in peer-reviewed medical literature, there have been growing numbers of reports that SARS-CoV-2 caused RSS. However, in some patients, unlike other viruses that infect the upper respiratory tract, SARS-CoV-2 infection has been reported to cause TCS without a runny nose and/or nasal irritation and other symptoms. In some patients, the activity of SARS-CoV-2 was inconsistent with the results of other patients. This clinically avoids the fear of the disease, delays the diagnosis and quarantine of the infected patient, thus complicating the treatment of the disease. Therefore, the first and most important step in identifying an infected patient is to fully understand the symptoms that may be related to the virus (3).

Existing studies have been performed to determine the frequency and severity of general symptoms in patients with signs of SARS-CoV-2 infection in the laboratory, as well as the frequency and severity of ENT symptoms, and the time for recovery after symptoms.

This research is about analyzing the most common ENT manifestations in COVID19 positive patients having underlying causes.

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Methods:

Studies have shown that events that occurred in COVID-19-positive patients were confirmed by the laboratory with various general manifestations such as fever, cough, and shortness of breath. Unpublished studies in the journals that were indexed or without reviews were excluded from the search. Studies that did not reveal ear, nose, and throat symptoms during the presentation focused on single expression studies, reported studies, and cases not in English were also excluded. To find related articles, we searched for many medical databases in April 2020 (4). We read about 45 peer-reviewed Articles from Elsevier, springer, sage pub, JAMA network, British medical journal, PubMed, research square, Wiley online library, Karger journals, Europe PMC, the new England journal of medicine, American journal of roentgenology and Nature Public Health Emergency Collection. Then, the authors synthesized, compiled, and evaluated the research results that met these inclusion and exclusion requirements.

Results:

We evaluated about 15 articles that came to fulfill our criteria. According to the possibilities the ENT manifestations included sore throat in 49 patients, cough in 799 patients, rhinitis in 87 patients, fatigue in 415 patients, loss of sense of taste in 80, loss of sense of smell in 171 patients, fever in 959 patients, headache in 189 patients, nausea and vomiting in 64 patients was reported. It also had dyspnea in about 64 patients in table 1 and figure 1.

The non-ENT symptoms that were more common and were more than the ENT manifestation were diarrhea in 9 patients, myalgia in 52 patients, hypertension in 79 patients, diabetes in 26 patients, heart disease in 20 patients, Urticarial in 15 patients was reported in table 2.

No sneeze, stuffy nose, drop nose, Swelling or pain, hearing loss, dizziness, palpitations, or stiffness was there in these patients.

The most common ENT events in COVID-19 were sore throat, fatigue, and fever which were cough in 799 Patients, 415 patients, and fever in 959 patients. The incidence of non-ENT manifestations in COVID-19 patients is not as high as fever and sore throat. However, the underlying factors in these patients mostly Included hypertension, MYALGIA, and diabetes containing 78, 51, and 26 patients respectively.

Discussion:

In December 2019, a new outbreak of coronavirus developed in China, causing acute coronavirus-2 (SARS-CoV-2) respiratory syndrome. WHO confirmed this new COVID-19 virus disease developed on February 11, 2020. Due to its widespread and infection,

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COVID-19 is an important health hazard. COVID-19 presents a wide range of clinical problems, from omitted symptoms to septic shock and various forms of dysfunction. Although the clinical features of COVID-19 are rapidly spreading worldwide, they are largely ambiguous (1). Nasal, nasopharyngeal, and/or pharyngeal tissue is one of the main areas for infection, the primary test site, and the source of infection. Most of the published studies on COVID-19 have focused on the manifestations and lower layers of the airways due to their risk of death. Although data on ENT manifestations during the COVID-19 outbreak is limited, the manifestations of ENT of the new virus deserve to be studied and need to be more precise in characterizing the epidemic Patients with SARS-CoV-2 have many (2,3) symptoms related to ENT and/or in general, and new indications are frequently added to the list. Over the past few weeks, anecdotal observations of COVID-19 and published articles have shown that this virus can cause sexually transmitted diseases. This deviation can lead to a decrease in the sensitivity to odor loss in the patient for reasons such as difficulty breathing in the patient, as well as a loss of odor in a study measuring odor loss. Odor in hospitalized patients compared with non-hospitalized patients with serum positive for SARS-CoV-2. The presence of first clinical symptoms meant that patients with SARS-CoV-2 infection were not always identified. This also applies to ENT symptoms, and it should be understood that, as our research shows, completely different symptoms will appear. In the literature, the most common symptoms of SARS-CoV-2 infection are a sore throat and mild cough followed by hypotension/anosmia or loss of taste. Many studies have focused specifically on olfactory functions. However, our research shows that many ear, nose, and throat findings, such as dizziness, headache, and even voice changes, may contribute to the development of COVID-19. If only these symptoms are treated, errors in the initial diagnosis and referral of the patient may (2, 4, 5) occur. The ENT symptoms of COVID-19 are usually no fever or cough. However, for the COVID-19 data to be reliable, complete, and consistent, a universal questionnaire is required with clearly defined COVID-19 characteristics. An earlier study found that the ENT changes in patients with COVID-19 were extremely random, as changes in smell or taste. However, the variance of the total population was analyzed as a method of recruitment. Symptoms appear to coincide (6, 7) with the appearance of the ENT organs. The subjective odor (in all patients) has a partial and complete loss of odor, which is fully reversible in most patients before and after symptoms appear.

Ear symptoms before and during symptomatic (all patients). Hazard signs before and after symptoms appear (all patients) (8,9).This suggests that the tendency to lose taste is, in most cases, completely reversible. However, chemical changes associated with COVID-19 are well known and lead to marked changes or changes in the taste sensation between (11,12) symptoms of COVID-19 in most organizations around the world. However, some new patients have not been suspected or tested for COVID-19 infection. Of course, there are many explanations for the lack of research, which may be largely due to limited availability and lack of taste/taste awareness and COVID-19 in secular medical communities. Of all participants with odor disorders in our study, 11.7% reported the first or only symptom of a chemical radiation disorder (12,13). This corresponds to the original (5,14)11.7 percent, but is much higher than that of

other studies targeting patients with milder conditions and patients with COVID-19 who have reported the disease. smell or taste. Many of the known symptoms of COVID-19 indicate that many of these people have not been diagnosed with COVID-19 infection. Some patients reported that Covid-19 suffered from bilateral mineral discomfort and moderate bilateral hearing loss (8,9).

The quantitative odor test, showing reduced odor, but not always abnormal function, is a major marker of SARS-CoV-2 infection and odor testing guidelines (15, 16). In some cases, patients with COVID-19 can be treated or isolated early. Anosmia has been reported in coronavirus conjunctival lesions but has been reported as a distinct symptom in one in six recent anosmia patients. This can help the carrier detect illnesses that have no symptoms and get them for specific tests. Studies are expected on the incidence of new anosmia due to COVID-19, followed by an analysis of COVID-19. (5,13,14). There was no significant difference in the meantime of day between the onset of symptoms and the length of hospital stay between critically ill (7 days) and non-severe (8 days) patients. Almost all patients had symptoms of fever, as observed in Huang2 and Wang 3, but much higher than in Guang. However, 4 out of the majority of patients (87.9%) in the Guan study experienced fever on admission. Therefore, fever is the most common symptom in patients with COVID-19. Cough is also a common symptom in these patients. In our study, 75% of patients had a cough (17, 18); These numbers are close to other studies. In this study, the frequency of fatigue was 75%, which was higher than that reported by Huang and Guan (13, 14, 19, 20, 21), but similar to that reported by Wang. higher than Huang and Guan, but comparable to Wang's analysis.

Limitations:

Collecting and reviewing the data was difficult due to the large COVID-19 health emergency. Consequently, this review has the same limitations as for new virus studies COVID-19. Second, inadequate incident registration without universal knowledge, accurate description of clinical symptoms, second differences in clinical data collection method and structure, and lack of tables and Universal questions can be easily used for these patients from time to time. Third, most articles ignore mild or asymptomatic medical cases. Fourth, the COVID-19 diagnosis is based on the unresponsive RT-PCR assay, which may decrease sensitivity. More accurate diagnostic tests will have a more detailed diagnosis and therefore different results. Fifth, there are no consecutive start dates or simple descriptions or definitions of the COVID-19 expression. Sixth, there were no endoscopic and ENT data in the written record. These are all characteristics of all the COVID-19 studies published to date and should be considered in further studies.

Conclusion:

ENT manifestations are not always the same as people suffering from COVID-19. They may vary with the underlying conditions such as hypertension, diabetes, and cardiovascular diseases as discussed in the article.

What is already known about this topic

SARS-CoV-2, the virus that causes COVID-19, is a new member of the coronavirus family, appeared in the Hubei region of China in late 2019 and quickly became a global pandemic. Although the virus can cause severe respiratory failure and even death in infected patients, it spreads rapidly and continues to spread among humans, as in most cases it can cause mild symptoms. or no symptoms.

What this study adds

Otorhinolaryngology manifestations are not always the same in Covid-19 patients .They may vary with the underlying conditions such as hypertension, diabetes, and cardiovascular diseases as discussed in the article.

Authors' contributions:

SKA is the only one who created the concept, designed and wrote the whole manuscript.

Conflict of interest: The authors declare that they have no conflict of interest.

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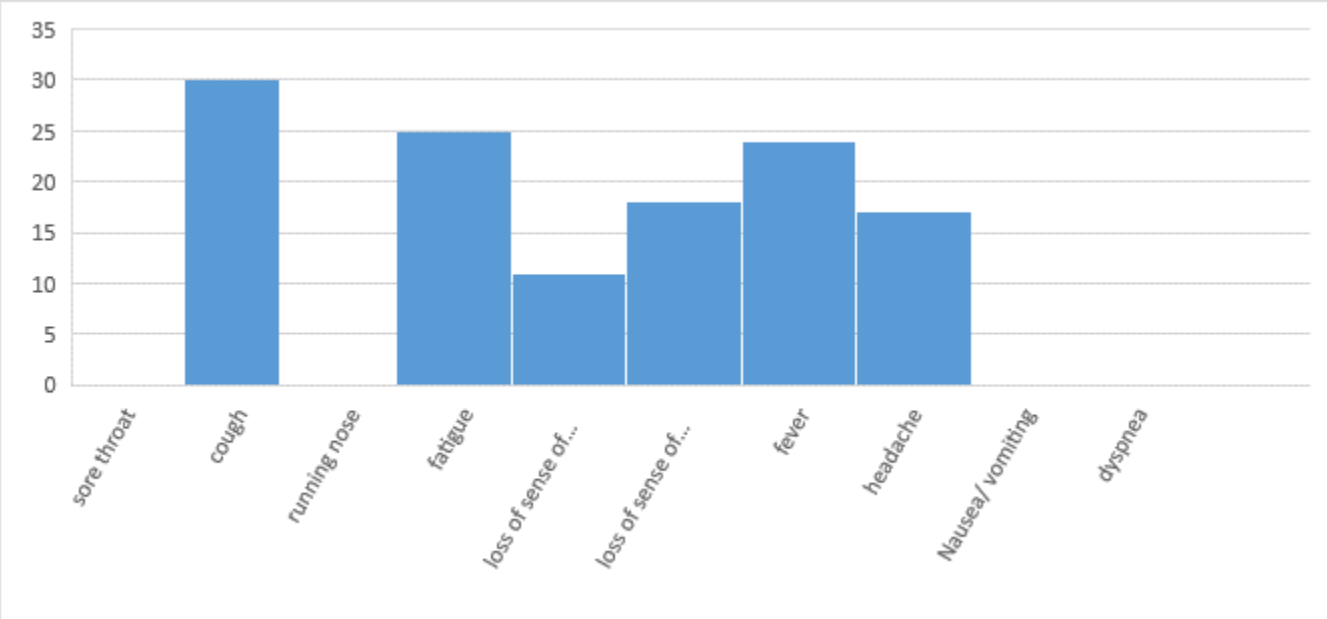

Figure 1 ENT manifestation in COVID-19

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Figure 2 non-ENT manifestations in COVID-19

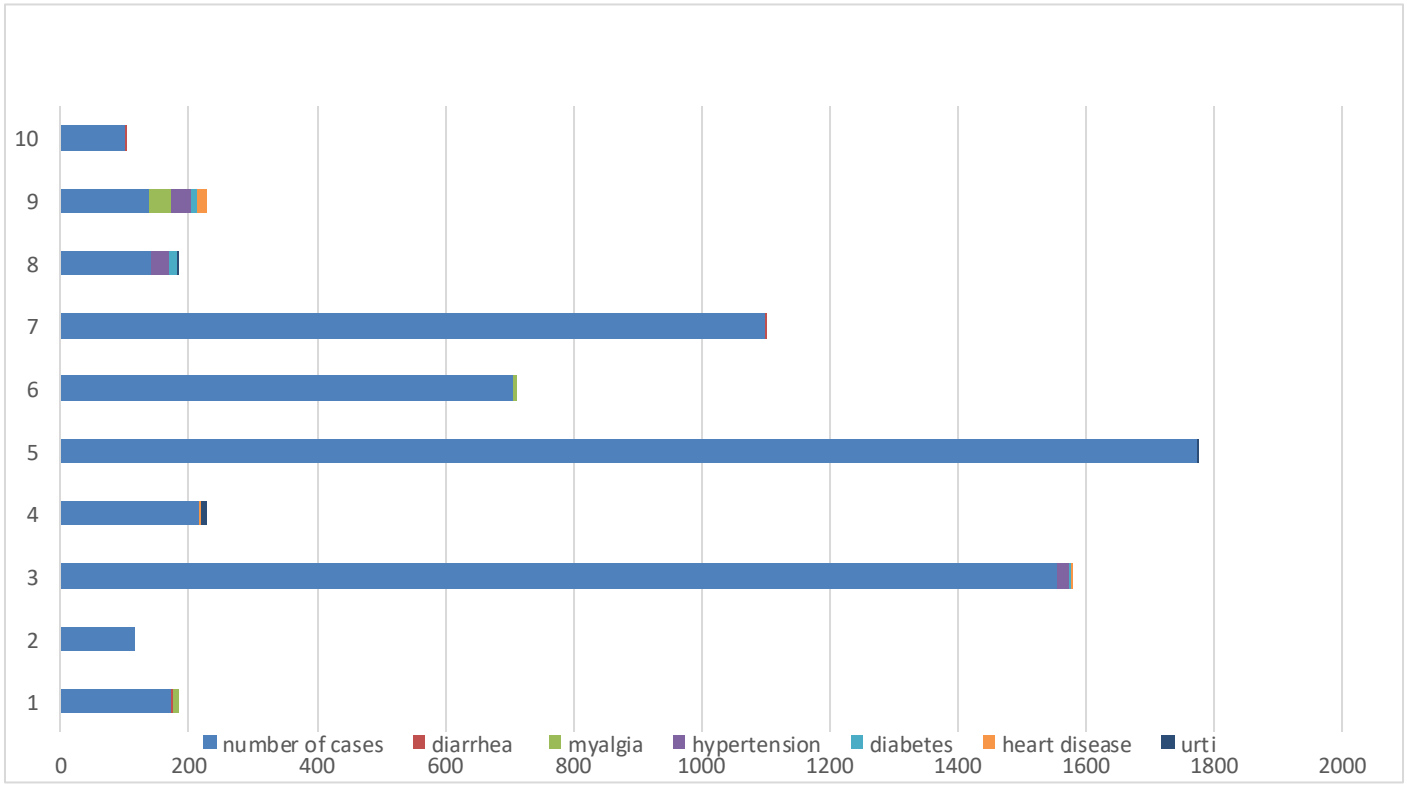

Table 1 ENT manifestations in COVID-19

ENT manifestations of Covid-19 patients											
Study	**Number of cases**	**Sore throat**	**Sough**	**Running nose**	**Fatigue**	**Loss of sense of taste**	**Loss of sense of smell**	**Fever**	**Headache**	**Nausea/ vomiting**	**Dyspnea**
(Sakalli et al., 2020)	172		30		25	11	18	24	17		
(Özçelik Korkmaz et al., 2020)	116	32.7				41.37	37.9		37.1	31	
(Lovato & de Filippis, 2020)	1556	0	68.7		39.4			85.6			
(Ma et al., 2020)	216			11.6			2.8				
(Wu et al., 2020)	38										2
(El-Anwar et al., 2020)	1773	11.3		2.1					10.7		
("ENT Manifestations in COVID-19 Positive Patients," 2020)	465		326	47	190		88	395	56		
(Beltrán-Corbellini et al., 2020)	79			4		28	25				
(Lechien et al., 2020)	417		79					49	45	22	

(Mizrahi et al., 2020)	706		11.6	17	5.9			10.3	16		
(Guan et al., 2020)	1099		67.8					43.8			
(Zhang et al., 2020)	140		75	1.4	75			91.7			
(Wang et al., 2020)	138		59.4		69.6			98.6		10.1	31.2
(Zhao et al., 2020)	101							78.2			
(N et al., 2020)	99	5	82	4	11			83	8	1	31
Total	**7115**	**49**	**799.5**	**87.1**	**415.9**	**80.37**	**171.7**	**959.2**	**189.8**	**64.1**	**64.2**

Table 2 non-ENT manifestation in Covid-19

Study	**Number of cases**	**Diarrhea**	**Myalgia**	**Hypertension**	**Diabetes**	**Heart disease**	**Urti**
(Sakalli et al., 2020)	172	2.32	9.3				
(Özçelik Korkmaz et al., 2020)	116						
(Lovato & de Filippis, 2020)	1556			17.4	3.8	3.8	
(Ma et al., 2020)	216					1.9	11.6
(El-Anwar et al., 2020)	1773						1.9
(Mizrahi et al., 2020)	706		7.7				
(Guan et al., 2020)	1099	3.8					
(Zhang et al., 2020)	140			30	12.1		1.4
(Wang et al., 2020)	138		34.8	31.2	10.1	14.5	
(N et al., 2020)	99	2					