Otorhinolaryngological Manifestations and Its Management in COVID 19 Patients

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Abstract COVID 19 pandemic is caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The first case was identified in December 2019, in Wuhan, China. It is an infectious disease and has led to the ongoing global pandemic. This pandemic has also started in Assam, with its first case reported on 31 March, 2020. A prospective study was conducted on 2000 laboratory confirmed coronavirus cases. Proper history were taken and clinical examinations were performed. They were also advised to do the necessary blood investigations, electrocardiogram and chest X- rays. Olfactory functions were assessed using substances like scented soap, mint toothpaste, vicks vaporub, etc. Gustatory functions were also assessed. In our study, we found that 83% (1650) patients presented with otorhinolaryngological or ENT (Ear, nose, throat) manifestations and 17% (350) did not have any otorhinolaryngological manifestations. The most common ENT symptoms with which the patients presented were sore throat (80%) and headache (76%). The other ENT symptoms were hyposmia (44%), dysgeusia (32%) and nasal congestion (28%). The most common non-ENT symptoms were fever (92%) and cough (85%). The other non-ENT symptoms with which the patient presented were malaise, generalized bodyache and abdominal symptoms

(like diarrhea). This prospective study gives a view of the incidence of otorhinolaryngological manifestations in COVID 19 patients. But, no significant co-relation was seen between presence of ENT symptoms and the severity of the disease. However, further studies are required to know the pathogenesis of causing ENT symptoms properly and also for definitive treatment of these symptoms.

Keywords Coronavirus · Hyposmia · Dysgeusia · Pandemic · Otorhinolaryngological manifestation

Introduction

Towards the end of 2019, the first case of COVID 19 was detected in Hubei Province, Wuhan, China. It is caused by a novel coronavirus, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). Because of its high potential for transmission from man to man has led to a global pandemic. This pandemic has also started in Assam, with its first case reported on 31 March, 2020.

The possible modes of transmission of this virus are through contact, droplet, airborne, fomite, fecal–oral, bloodborne, mother to child and animal to human transmission [1]. To slow down the transmission of this virus, certain measures like face covering, frequent handwashing, social distancing, self isolating oneself on development of symptoms etc. should be strictly followed by the society.

The most common manifestations of COVID 19 are fever, dry cough and tiredness. The less common symptoms are bodyache, sore throat, diarrhea, conjunctivitis, headache, loss of taste, loss of smell, skin rash, discolouration of fingers or toes.

Most of the patients infected with COVID 19 virus will have mild illness and recover without requiring special

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treatment. Patients having co-morbidities (cardiovascular disease, diabetes mellitus, chronic respiratory disease, cancer, kidney disease) and older people are likely to develop complications (acute respiratory failure, pneumonia, acute lung injury, acute kidney injury, acute cardiac injury, septic shock, disseminated intravascular coagulation). These patients require intensive hospital care and treatment.

Many clinical trials are going on currently to improve the treatment for COVID 19. However, at present no specific treatment for COVID 19 has been found.

Aims of the Study

1. To contribute to current knowledge about COVID 19.
2. To study about the otorhinolaryngological manifestations and its effects in COVID 19 patients.
3. To study about the potential treatment and current effectiveness of the available treatment.

Materials and Methods

- Consent was taken from the patients included in the study.
- Sample size: 2000
- Study design: Prospective study.
- Detailed history, physical examination and all the necessary investigations were done for the patients.
- Proper treatment given to all the patients.
- Ethical clearance were obtained from the Ethical Committee of Guwahati Medical College & Hospital.

Inclusion Criteria

- Laboratory confirmed COVID 19 cases.
- Patients giving consent for the study.

Exclusion Criteria

- Patients having past history of surgery or radiotherapy in oral or nasal cavities.
- Patients having history of allergic rhinitis or chronic rhinosinusitis.
- Patients having history of psychiatric disorders.

Methodology

Proper history of all the confirmed COVID 19 patients were taken and clinical examinations were performed. They were also advised to do the necessary blood investigations (routine blood examination, blood sugar level, platelet count, prothrombin time, liver & renal function test etc.), electrocardiogram and chest X-rays. These investigations were done in our hospital and no extra financial burden were given to the patients. Olfactory functions of the patients were assessed using substances that were easily available like ethanol, scented soap, pepper, coffee, mint toothpaste, vicks vaporub etc. Gustatory functions were assessed for the four tastes, keeping in mind to assess bitter taste at the last. All the patients were treated conservatively with injectables, oral medications and nasal irrigation.

Results

A total of 2000 laboratory confirmed cases were included in the study. Out of these 1150 (58%) were males and 850 (42%) were females (Table 1).

Among these, maximum number of patients were more than 60 years of age and the least number of cases were seen in 0-20 years of age (Table 2).

The most common symptoms with which these patients presented were fever (93%) and cough (85%), and the least common symptoms were malaise, generalized bodyache and abdominal symptoms like diarrhea (Table 3).

The most common ENT manifestations with which the patients presented were sore throat (80%) and headache (76%) (Table 4).

Out of the 2000 patients, 83% complained of otorhinolaryngological (ENT) problems (Table 5).

Co-morbidities (like coronary artery disease, diabetes mellitus, kidney diseases etc.) were seen in 66% of the cases with ENT manifestations and death was seen in 10% of the cases.

78% of the cases with ENT manifestations said to have recovered from the symptoms within 10-20 days. Even after recovery from the primary disease, 22% patients presenting with anosmia/hyposmia and dysgeusia said to have residual symptoms even after 30 days. However, proper follow-up and definitive objective tests for these patients could not be done during the current COVID 19 pandemic situation.

All the patients were given symptomatic and supportive treatment. They were given antibiotic, five doses of antiviral (remdesivir), oral/injectable steroid and low molecular weight heparin (LMWH). The patients were also given symptomatic treatment like paracetamol for fever

Table 1 Showing the gender distribution of cases

Gender	No. of cases	Percentage (%)
Males	1150	58
Females	850	42

Table 2 Showing the age distribution of cases

Age group (years)	No. of cases	Percentage (%)
0-20	140	7
21-40	400	20
41-60	660	33
>60	800	40

Table 3 Showing the Non-ENT manifestations in the cases

Non-ENT manifestations	No. of cases	Percentage (%)
Fever	1850	93
Cough	1700	85
Respiratory distress	665	33
Malaise, bodyache	280	14
Abdominal symptoms	89	4

Table 4 Showing the ENT manifestations in the cases

ENT manifestations	No. of cases	Percentage (%)
Sore throat	1600	80
Headache	1520	76
Hyposmia/anosmia	880	44
Dysgeusia	640	32
Nasal congestion	550	28

Table 5 Showing cases with ENT manifestations

ENT/Non-ENT manifestation	No. of cases	Percentage (%)
ENT manifestation	1650	83
Non-ENT manifestation	350	17

and headache, gargle and soothing agent for sore throat. Nasal irrigation and nasal decongestants were given to patients with anosmia/hyposmia and nasal congestion. They were also advised to take Vitamin C and multivitamins regularly.

Discussion

COVID 19 disease has rapidly spread across the whole world. Otorhinolaryngologists are at high risk due to the close contact with the mucus membrane of the upper respiratory tract.

According to studies conducted previously [2, 3], it was found that non-ENT manifestations like fever and cough are more common in COVID patients than ENT manifestations. However, it is not uncommon to see the ENT manifestations in these patients. These symptoms are more commonly seen during the early stages of the disease [4]. The identification of these symptoms may help in isolating the pauci-symptomatic patients [5].

In our study, we found that 83% of the COVID patients presented with ENT manifestations and 17% patients had no ENT manifestations. The most common ENT manifestations were sore throat and headache, and the least common symptom was nasal congestion. Hyposmia and dysgeusia were seen in 44% and 32% patients respectively. Stridor, epistaxis and hoarseness are the less common symptoms seen in these patients [6] and were not reported in any of the patients included in our study. These patients were given both symptomatic and supportive treatment as mentioned above. Most of the patients said to have recovered from these symptoms within 20 days. However, few patients (22%) complaint of having residual symptoms even after recovery from the primary disease. Proper follow-up and definitive tests could not be done for these patients in the current global pandemic situation.

According to studies, hyposmia and dysgeusia are early symptoms found in COVID 19 patients, occurring in the first 5-7 days [5]. It is recommended to consider patients with these symptoms as COVID 19 suspects, and isolate and test them [7]. This may help in early identification of cases and thus, help in breaking the chain of transmission of the disease. However, proper objective studies could not be performed to analyse the extent of loss of smell and taste. No clear predominance of disturbance of taste in particular, also could be made. Most of the patients, however complained of decrease in sweet and sour taste. This study was entirely based on the subjective experience of the patients regarding their symptoms. Also, no significant co-relation were seen between the presence of ENT manifestations and the severity of the disease. A study conducted by Liu Y et al., shows that the severity of clinical picture is related to the viral load [8].

At present, no definitive study has been conducted to know the mechanism of causing olfactory and gustatory dysfunction in these patients, and also to assess the improvement of these symptoms. Subjective questionnaire

for ENT manifestations in the current pandemic scenario may lead to overestimation of cases [9].

Auditory complications due to COVID 19 infection are little mentioned in the literature [6]. However, studies conducted by Mustafa [10], shows that coronavirus can damage cochlear hair cells, despite being asymptomatic, causing reduction in the high frequency pure tone thresholds.

Conclusion

ENT manifestations should be kept in mind while making the diagnosis of COVID 19. Symptomatic treatment was found to be effective in most of the cases. However, further studies need to be done using the objective tests to rule out otorhinolaryngological manifestations to avoid overestimation of cases, to know about the pathogenesis of these symptoms in COVID 19 patients and for improvement of the current treatment regime and development of specific treatment. Further evaluation of the recovered patients also need to be done for the late sequels of the disease.

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Compliance with Ethical Standards

Conflict of interest The authors have no conflicts of interest to disclose.

Consent to Participate Consent was obtained from all the patients that were included in the study.

Ethical Approval The study was approved by the Ethical Committee of Gauhati Medical College and Hospital.

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