Original Research Article

Profile of ENT manifestations among COVID - 19 patients

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ABSTRACT

Background: The general and common symptoms of covid 19 disease are fever, dyspnoea, cough, cold, headache, sorethroat, dysphagia, loss of smell and taste, Gastrointestinal manifestations. The symptoms may be exhibited alone or in combination. The prime objective of the study is to know the frequency of occurrence of symptoms for better control of the infection. The purpose of study is to detect prevalence of ENT manifestations (dyspnoea, cough, cold, headache, sorethroat, dysphagia, alterations in smell and taste sensation).

Materials and Methods: Single center, retrospective study covered 1070 inpatients for a period of 2 months duration ie; from August and September 2020 in teritiary health care centre. A questionnaire with various parameters like age, gender, smoking, alcohol, HTN, DM, fever, cough, Nasal obstruction, Anterior nasal discharge, posterior nasaldrip, headache, sorethroat, dysphagia, dyspnoea, anosmia, hyposmia, dysosmia, ageusia, hypogeusia, dysguesia history was taken and analysed.

Result: The analysed patients sample size is 1070. Among them 901 patients (84%), exhibited symptoms & 169 patients (16%) were asymptomatic. Most of the patients age group were between 50-59yrs (24.7%) and with a gender ratio of M:F=1.8:1. Dominant observation in males noticed is positive history of smoking and alcohol consumption. The prevalence of symptoms was found to be: cough (44%), fever (39.3%), dyspnoea (32.4%), Nasal discharge (16.6%), sorethroat (9.2%), Headache (8.8%), dysphagia (8.2%), anosmia (7.3%), ageusia (6.8%), hypogeusia (6.3%), Hyposmia (3.2%). No patient presented with dysguesia and dysosmia. 150(14%) patients had only olfactory and gustatory loss.

Conclusion: Sudden olfactory or gustatory alterations need to be recognised as an important symptom in covid 19 patients for better prognosis and self isolation.

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1. Introduction

In China, Wuhan city, Hubei province, 41 patients with pneumonia of unidentified cause were detected at the end of December, 2019.¹ Throat swab samples were sent for culture on 7th January 2020 at Chinese Center for Disease Control and prevention (CCDC) and causative microorganism for the disease is named as severe acute respiratory syndrome, Coronavirus-2 (SARS- COV-2). This illness was named as COVID-19² by World Health Organisation (WHO) in February 2020. Millions of people were infected and hundreds of thousands were dead all over the world during this pandemic and it remains as a threat to the mankind.³ COVID-19 patients currently remain the primary source of infection. The disease spectrum varies from mild to life-threatening symptoms. To forestall spread of contamination and for isolation, it is critical to assess the prescient indicators of the illness. For COVID-19 assessed incubation period is up to 14 days from exposure, with a median of 4 to 5 days.⁴ The onset of disease, span of viral shedding and the period of transmission are not characterised. Among asymptomatic or pre-symptomatic individuals with SARS-CoV-2, viral RNA may be detected in upper respiratory specimens.⁵ The following symptoms were present among inpatient cases are fever, fatigue,
cough, dyspnoea, myalgia, diarrhoea, chest pain, Nasal obstruction, Anterior nasal discharge, posterior nasal drip, headache, sorethroat, dysphagia, anosmia, hyposmia, dysosmia, ageusia, hypogeusia, dysguesia. Significant increase in the cases presenting with ENT manifestations were noticed. An European multicenter study inferred that olfactory (85.6%) and gustatory (88%) anomalies are common side effects in European affirmed COVID-19 cases, who might not have other nasal objections. In mild cases anosmia and ageusia were present alone. It is therefore necessary to test or quarantine those individuals with these complaints.

2. Materials and Methods

In tertiary health care facility which is recognised to provide Covid services, a retrospective study was conducted during August and September 2020 among positive COVID-19 patients. The aim of study is to analysis the prevalence of all ENT manifestations at the time of admission of the patient ie, Nasal obstruction, Anterior nasal discharge, posterior nasal drip, headache, cough, dyspnoea, sorethroat, dysphagia, anosmia, hyposmia, dysosmia, ageusia, hypogeusia, dysguesia. The study included a questionnaire about fever, cough, Nasal obstruction, Anterior nasal discharge, posterior nasal drip, headache, dyspnoea, sorethroat, dysphagia, anosmia, hyposmia, dysosmia, ageusia, hypogeusia, dysguesia. History was taken from patients telephonically and those who were not responding to call thrice were excluded from the study.

2.1. Inclusion criteria

All COVID-19 positive patients admitted irrespective of severity, with no previous history of smell and taste dysfunction and who are willing to participate in study are included.

2.2. Exclusion criteria

All children <10 yrs and elderly people who cannot tell their symptoms, who have previous history of smell and taste dysfunction and individuals who haven’t agreed for study have been excluded.

3. Results

Demographic profile among Covid – 19 inpatients

Patients were predominantly seen in 6th decade of life with M:F ratio=1.8:1

2% patients were smokers and 17.8% were alcoholics

6% patients were hypertensives and 25.2% patients have diabetes

Among 1070 patients 901 patients (84%) were symptomatic and 169 patients (16%) were asymptomatic.

| Variables | Frequency | %  |
|-----------|-----------|----|
| Age Group |           |    |
| 10 – 19   | 27        | 2.5|
| 20 – 29   | 95        | 8.9|
| 30 – 39   | 134       | 12.5|
| 40 – 49   | 206       | 19.3|
| 50 – 59   | 264       | 24.7|
| 60 – 69   | 216       | 20.2|
| 70 – 79   | 109       | 10.2|
| 80 – 89   | 19        | 1.8|
| Gender    |           |    |
| Male      | 689       | 64.4|
| Female    | 381       | 35.6|
| Smoking   |           |    |
| Present   | 56        | 5.2|
| Absent    | 1014      | 94.8|
| Alcohol   |           |    |
| Present   | 190       | 17.8|
| Absent    | 880       | 82.2|
| HTN       |           |    |
| Present   | 317       | 29.6|
| Absent    | 753       | 70.4|
| DM        |           |    |
| Present   | 270       | 25.2|
| Absent    | 800       | 74.8|

Significantly cough (44%), fever(39.3%), dyspnoea (32.4%) and anterior nasal discharge (12%). We have observed that other symptoms were seen in less than 10%.

P Value is significant if the value is less than 0.05

With this study we have observed that Women were more likely to present with Anterior nasal discharge, sore throat, hypogeusia and Men were more likely to present with dyspnoea and cough.

4. Discussion

Patients with Covid-19 disease can encounter a scope of clinical appearances, from no symptoms to critical illness. In United States, a report on more than 370,000 affirmed COVID-19 cases - 70% of patients experienced fever, cough, or shortness of breath, 36% had muscle aches, and 34% had headaches. Issues during the pandemic COVID-19 emergency are Chemosensory dysfunctions and are the indicators for early diagnosis. Hu et al studied the cellular distribution of taste cells and ACE2 receptor distribution. They found that the percentage of ACE2 positive cells are more in taste cells, which indicated that SARS-CoV-2 might invade them and lead to ageusia in these patients. Olfactory dysfunction is generally found to be the initial symptom. Taste disturbance along with smell abnormality is that both chemosensory senses are intimately correlated. The analysed sample size is 1070. Among them 901 patients (84%) exhibited symptoms and prevalence was
Table 2: Prevalance of ENT manifestations among Covid-19 inpatients

| Symptom                  | Frequency | %  |
|--------------------------|-----------|----|
| **Nasal obstruction**    |           |    |
| Present                  | 40        | 3.7|
| Absent                   | 1030      | 96.3|
| **Anterior nasal discharge** |          |    |
| Present                  | 128       | 12 |
| Absent                   | 942       | 88 |
| **Posterior nasal drip** |           |    |
| Present                  | 49        | 4.6|
| Absent                   | 1021      | 95.4|
| **Sorethroat**           |           |    |
| Present                  | 98        | 9.2|
| Absent                   | 972       | 90.8|
| **Headache**             |           |    |
| Present                  | 94        | 8.8|
| Absent                   | 976       | 91.2|
| **Dysphagia**            |           |    |
| Present                  | 87        | 8.1|
| Absent                   | 983       | 91.9|
| **Dyspnea**              |           |    |
| Present                  | 347       | 32.4|
| Absent                   | 723       | 67.6|
| **Anosmia**              |           |    |
| Present                  | 78        | 7.3|
| Absent                   | 992       | 92.7|
| **Hyposmia**             |           |    |
| Present                  | 34        | 3.2|
| Absent                   | 1036      | 96.8|
| **Ageusia**              |           |    |
| Present                  | 73        | 6.8|
| Absent                   | 997       | 93.2|
| **Hypogeusia**           |           |    |
| Present                  | 67        | 6.3|
| Absent                   | 1003      | 93.7|
| **Fever**                |           |    |
| Present                  | 421       | 39.3|
| Absent                   | 649       | 60.7|
| **Cough**                |           |    |
| Present                  | 471       | 44 |
| Absent                   | 599       | 56 |

cough (44%), fever (39.3%), dyspnoea (32.4%), Nasal discharge (16.6%), sorethroat (9.2%), headache (8.8%), dysphagia (8.2%), anosmia (7.3%), ageusia (6.8%), hypogeusia(6.3%), hyposmia (3.2%) and 169patients (16%) were asymptomatic. No patient presented with dysguesia and dysosmia. Olfactory and gustatory alterations were found in 10.5% and 13.1% respectively. Among 1070 patients, 150(14%) patients ie; 89 males and 61 females had only smell and taste alterations irrespective of other symptoms. Speth et al. reported that the predominance of olfactory dysfunction was 61.2%. Paderno et al. demonstrated that the olfactory and gustatory dysfunctions were seen in 83% and 89% of patients, respectively. There have been not many investigations on the event of olfactory and gustatory dysfunction in Asia, only one study reported hyposmia as a symptom of the COVID-19. In our study, nasal obstruction is present in 3.7% of patients. In an investigation of 1099 patients Guan et al. revealed a prevalence of nasal obstruction in 5% of patient. In this study 128 patients (12%) had Anterior nasal discharge and 49 (4.6%) had posterior nasal drip. Chen et al. reported four patients with rhinorrhea (4%) in a case series of 99 patients. The limitation of this study is purely subjective study, didn’t register the time of onset and time taken for resolution of symptoms.
Table 3: Frequency of symptom versus Gender

| Symptom                | Male frequency (%) | Female frequency (%) | Chi square statistic | P value |
|------------------------|--------------------|----------------------|---------------------|---------|
| **Nasal obstruction**  |                    |                      |                     |         |
| Present                | 20(2.9)            | 20(5.2)              | 3.75                | 0.05    |
| Absent                 | 669                | 361                  |                     |         |
| **Anterior nasal discharge** |                |                      |                     |         |
| Present                | 65(9.4)            | 63(16.5)             | 11.74               | 0.00    |
| Absent                 | 624                | 318                  |                     |         |
| **Posterior Nasal drip** |                  |                      |                     |         |
| Present                | 28(4)              | 21(5.5)              | 1.17                | 0.27    |
| Absent                 | 661                | 360                  |                     |         |
| **Sorethrot**          |                    |                      |                     |         |
| Present                | 53(7.6)            | 45(11.8)             | 5                   | 0.02    |
| Absent                 | 636                | 336                  |                     |         |
| **Headache**           |                    |                      |                     |         |
| Present                | 54(7.8)            | 40(10.5)             | 2.16                | 0.14    |
| Absent                 | 635                | 341                  |                     |         |
| **Dysphagia**          |                    |                      |                     |         |
| Present                | 49(7.1)            | 38(10)               | 2.69                | 0.10    |
| Absent                 | 640                | 343                  |                     |         |
| **Dyspnea**            |                    |                      |                     |         |
| Present                | 253(36.7)          | 94(24.7)             | 16.25               | 0.00    |
| Absent                 | 436                | 287                  |                     |         |
| **Anosmia**            |                    |                      |                     |         |
| Present                | 55(8)              | 23(6)                | 1.37                | 0.24    |
| Absent                 | 634                | 358                  |                     |         |
| **Hyposmia**           |                    |                      |                     |         |
| Present                | 21(3.1)            | 13(3.4)              | 0.16                | 0.68    |
| Absent                 | 668                | 358                  |                     |         |
| **Ageusia**            |                    |                      |                     |         |
| Present                | 45(6.5)            | 28(7.4)              | 0.25                | 0.61    |
| Absent                 | 644                | 353                  |                     |         |
| **Hypogeusia**         |                    |                      |                     |         |
| Present                | 35(5.1)            | 32(8.4)              | 4.60                | 0.03    |
| Absent                 | 654                | 349                  |                     |         |
| **Fever**              |                    |                      |                     |         |
| Present                | 281(40.8)          | 140(36.8)            | 1.67                | 0.19    |
| Absent                 | 408                | 241                  |                     |         |
| **Cough**              |                    |                      |                     |         |
| Present                | 319(46.3)          | 152(39.9)            | 4.08                | 0.04    |
| Absent                 | 370                | 229                  |                     |         |

5. Conclusion

In this single centre, retrospective study, fever, cough and dyspnoea were the most common symptoms. It was discovered that the incidence of the ENT manifestation at the time of admission in the hospital among COVID-19 patients is not as high as cough and fever but 14% had only smell and taste alterations but preventive care and screening must be offered for such patients to avoid further spread. Sudden olfactory or gustatory alterations need to be recognised as an important symptom, for better prognosis and self isolation. With this study we also observed that woman were more presumed to present with anterior nasal discharge, sore throat, hypogeusia and men were more presumed to present with dyspnoea and cough. As the epidemic still continues better understanding of the ENT manifestations in Covid-19 is important in controlling the disease.

6. Conflicts of Interest

All contributing authors declare no conflicts of interest.

7. Source of Funding

None.
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