

Frequency of Anosmia and Ageusia in COVID-19 Patients

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¹ Conception of study

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^{2,3} Critical Review

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Abstract

Objective: With little research about the disease progression and its variants from asymptomatic individuals to patients suffering from type 2 respiratory failure, it has been a challenge to diagnose the affected individuals and control its spread. Different initial researches indicated the presence of sudden anosmia and dysgeusia in asymptomatic or mild symptomatic carriers. Hence the purpose of my research was to find out the frequency of these symptoms in COVID-19 positive patients.

Materials and Methods: This is a retrospective study of 157 patients who were tested positive with COVID-19 between March and September 1, 2020. Because of restrictions on visits to clinics and hospitals and increased risk of exposure during the epidemic, patients were not examined. Data was collected through Google forms and telephonic interviews of patients who suffered from COVID-19 in the past.

Results: The data were analyzed using SPSS version 23. According to our result, of all the patients who suffered from COVID-19 59.2% of patients presented with sudden onset anosmia, and 55.3% presented with sudden hypogeusia without any previous history of such symptoms.

Conclusion: The purpose of my research was to conclude the frequency of symptoms of sudden onset anosmia and dysgeusia in COVID-19 patients in Pakistan. This will facilitate timely screening and thus isolation of affected individuals, thus decreasing the spread and lowering the curve. As proven, in addition to fever and sudden onset dry cough, isolated sudden onset anosmia (ISOA) should be considered one of the presenting complaints.

The study included 90 patients presenting with clinical symptoms of COVID-19 but with negative RT-PCR. All patients underwent chest computed tomography (CT). Patients having non-COVID-19 HRCT features with negative RT-PCR were excluded from the study.

Keywords: COVID-19, Anosmia, and Ageusia/Dysgeusia.

Introduction

The coronavirus disease is a new pandemic, first arising from Wuhan, China. It is caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2). It was considered a pandemic by World Health Organization on 30th January 2020. Ever since it has affected millions of populations.

The first case of Pakistan was confirmed on 26th Feb 2020. The government announced a worldwide lockdown on 24th March 2020. After a lockdown of 1 and a half months, it was lifted because of the economic crisis. The number of COVID patients is increasing ever since. Being a third-world country it is difficult to practice successful lockdown to practice social distancing and strict hygiene measures. Thus timely diagnosis and timely isolation are key to lower the spread of this infection.

With little research about the disease progression and its variants from asymptomatic individuals to patients suffering from type 2 respiratory failure, it has been a challenge to diagnose the affected individuals and control its spread. Different initial researches indicated the presence of sudden anosmia and dysgeusia in asymptomatic or mild symptomatic carriers.¹ It is thought to be caused by indirect neural pathway involvement (involvement of supporting neural tissues) instead of secondary anosmia caused by nasal congestion and blockage.²

We aimed to describe the prevalence of anosmia in our population with confirmed COVID-19.

Materials and Methods

This is a retrospective observational study of 157 patients who were tested positive with COVID -19 between March and September 1, 2020. The diagnosis was mostly confirmed by PCR on respiratory samples, mainly nasopharyngeal or oropharyngeal swabs. Few cases were reported after positive Blood IgG. Because of restrictions on visits to clinics and hospitals and increased risk of exposure during the epidemic, patients were not examined. Data was collected through Google forms and telephonic interviews of patients who suffered from COVID-19 in the past. Patients' contacts were taken from government hospital data after taking all the ethical considerations. Only patients who complained of new-onset anosmia were considered in the study to rule out chronic causes of anosmia. Smell and taste testing were also not performed due to security limitations in the COVID-19

pandemic. Usual descriptive statistics were used. Categorical variables were expressed as numbers, percentages, or mean. Continuous variables were expressed as mean with standard deviation (SD).

Results

The data was analyzed using SPSS version 23. The age of the subjects ranged from 9 years to 72 years with a mean of 37.4 ± 13.9 years. Majority of the subjects were aged between 30-60 years ($n = 81, 53.3\%$), followed by 60 (39.5%) patients aged <30 years and 11 (7.2%) patients aged >60 years. There were 80 (52.6%) male and 72 (47.4%) female subjects with a male to female ratio of 1:1.1.

Table 1:

Age	Frequency	Percentage
< 30 years	60	39.5%
30-60 years	81	53.3%
> 60 years	11	7.2%

Table 2:

Gender	Frequency	Percentage
Male	80	52.6%
Female	72	47.4%

According to our study, 90 patients (59.2%) patients suffered from loss of smell, and the median age of recovery was 8 days. 84 patients (55.3%) patients suffered from loss of taste and the median age of recovery was 10 days.

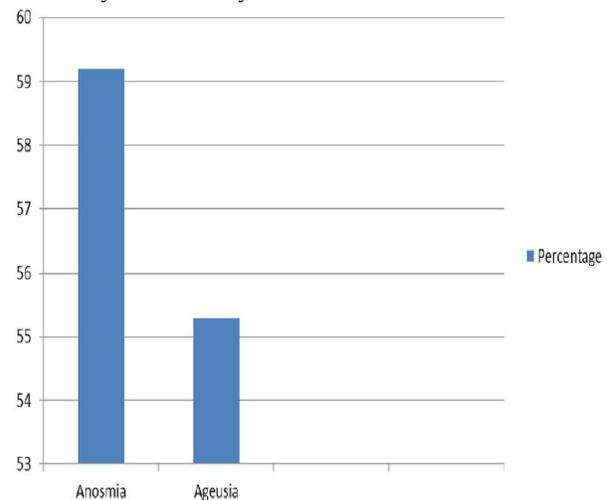


Figure 1: Percentage of Symptoms

My data also included the severity of symptoms ranging from no symptoms to severe symptoms requiring ICU admission. Deceased patients were not included in the study. Patients with mild symptoms (high-grade fever, severe cough, or severe body aches) were 62% ($n=62$) and patients with severe symptoms

(severe respiratory complication requiring ICU admission) were 13.2% (n=20)

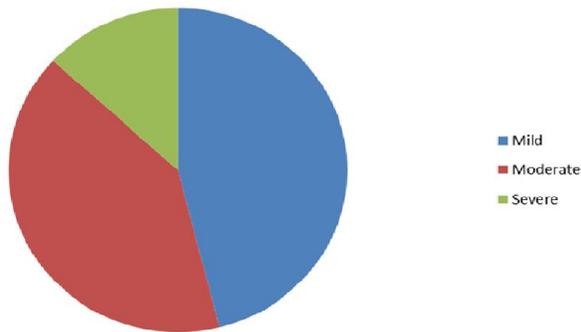


Figure 2: Severity of Symptoms

Discussion

In recent months, since the beginning of novel coronavirus, it has been seen that COVID causes loss of sense of smell and taste in affected patients, and in many, these are the only associated symptoms.

Anosmia and hypogeusia were initially not taken as key symptoms in China, reporting only 5% of COVID-19 patients to be affected with this symptom,⁸ but in Europe, the Middle East, and North America showed higher prevalence.

According to our study, 90 patients (59.2%) patients suffered from loss of smell, and the median age of recovery was 8 days. 84 patients (55.3%) patients suffered from loss of taste and the median age of recovery was 10 days.

Comparing my results with other studies, in research conducted in Italy, 73.6% reported complaints of chemosensory dysfunction during their COVID infection. The analysis of the patient confirmed that ageusia and anosmia are early symptoms in COVID-19, generally occurs within the first 5 days of the clinical onset.³

In a research published in the official journal of the American Academy of Otolaryngology-Head and Neck Surgery, conducted in Iran, it was noted that many COVID patients first presented with sudden symptoms of anosmia, hyposmia, and hypogeusia and a high proportion of seriously ill COVID patients had initial complain of anosmia alone.⁴

In another research conducted in the USA, it was noted that in 237 patients of COVID-19, 73% had complained of anosmia before the diagnosis.⁵ In a research conducted from 1st March 2020 to 17th March 2020 in France, 47% with a confirmed diagnosis of corona reported anosmia and 85% had dysgeusia.⁶

According to the above-mentioned studies, there is a huge variation in the key symptoms in different countries ranging from 40% to almost 80% of anosmia and ageusia in COVID-positive patients. The purpose of my research was to conclude the frequency of symptoms of sudden onset anosmia and dysgeusia in COVID-19 patients in Pakistan. This will facilitate timely screening and thus isolation of affected individuals.⁷ It will help in the isolation of affected non-symptomatic to mild symptomatic patients. In absence of PCR testing, anosmia can serve as a free and specific diagnostic tool for developing countries like us who are currently affected by the pandemic.

Conclusion

Sudden onset anosmia and ageusia are key features of SARS-COVID-19 present in half of the population studied and were often associated with dysgeusia. In this time of rapidly spreading disease, anosmia and ageusia can be used as tools to identify the carriers and mildly symptomatic patients of the corona virus. This will help in decreasing the load of pathologists and will facilitate the rapid isolation of patients.

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