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ORIGINAL ARTICLE

Prognosis of Anosmia in Patients of COVID-19

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ABSTRACT

Background: The novel Corona virus (SARS COV-2) causes respiratory tract infection that has been labeled as Covid-19. It was declared a pandemic by WHO on 30th of January 2020. So far, COVID-19 has involved 218 countries and territories with 135,338,376 total cases and 2,929,315 total deaths. This virus causes severe respiratory distress syndrome and usually present with dry cough, fever, respiratory distress, and myalgia. Interestingly, patients have shown various nonspecific presentations and Anosmia is also a prominent nonspecific feature.
Aim: To find out the overall progress, duration and recovery of Covid-19 related loss of smell (anosmia).
Methods: This is a retrospective online study in which 45 patients were included. Data was collected by using 'Google survey form'. Only those patients, who were confirmed cases of Covid-19 (diagnosed by PCR) and who lost their smell at least 3 month earlier, were included in this study. The Statistical analysis of collected data was then carried out by using SPSS software.
Results: Out of 45 patients 17(37.8%) were male and 28(62.2%) were female (male to female ratio of 1:1.6). 71.2% of the respondents were up to 40years of age. 12(26.7%) patients were between 41 to 50 years, while only one patient (2.2%) was between 51 to 60 years. In 43 patients (95.6%) the anosmia was reversible. In two of our respondents (4.4%), the smell sensation didn't return even after 3 months.
Conclusion: The anosmia in Covid-19 is mostly reversible and in most of the patients its duration is less than 2 weeks.
Keywords: Anosmia, Covid-19, SARS COV-2

INTRODUCTION

The novel Corona virus (SARS COV-2), that was first reported in China (December 2019), causes respiratory tract infection that has been labelled as Covid-19 (Corona virus disease of 2019)[1]. After an extremely rapid spread, it was declared a pandemic by WHO on 30th of January 2020[2]. Currently, as of April 10, 2021, COVID-19 has involved 218 countries and territories with 135,338,376 total cases and 2,929,315 total deaths[3]. The first ever corona virus, which was an Alpha corona virus, was discovered in 1966 by Tyrell and Bynoe, in the patients of common cold[4]. But this novel corona virus (SARS-COV2) which is responsible for COVID-19 is a beta virus and, unlike the alpha version, it causes severe respiratory distress syndrome[5,6]. Patients of Covid-19 usually present with dry cough, fever, respiratory distress, and myalgia[7,8]. Interestingly, patients have shown various nonspecific presentations and Anosmia is also a prominent nonspecific feature of Covid-19 and has been mentioned in multiple studies[9,10]. Literature review suggests that Corona viruses have already caused anosmia in the past[11]. The initial studies from China didn't focus on anosmia as an important complaint, but later on the literature especially from Europe started to mention it in their studies as an important finding raising suspicion of Covid-19[9,12]. By the end of April 2020, the anosmia started to appear as an important clinical symptom of Covid-19 in many studies and some authors also revealed that it is present in more than half of the patients[9,10,13].

The objective of this study is to find out the overall progress, duration and recovery of Covid-19 related loss of smell (anosmia)

MATERIALS & METHODS

This is a cross sectional survey that was conducted during the months of February and March 2021. It was carried out in the form of an online survey using 'Google survey form'. Only those patients, who were confirmed cases of Covid-19 (diagnosed by PCR) and who lost their smell at least 3 month earlier, were included in this study. The participants who were less than 15 years of age, who shown a negative PCR or who didn't develop anosmia were not included in the study. Patients who were having anosmia even before getting diagnosed with Covid-19 were also not included. Ethical approval for this study was taken from Institutional ethical review board.

A total of forty seven participants participated in this study. Out those 47 people, 45 fulfilled the inclusion criteria and hence included in this study. The variable recorded were age group, gender and duration of anosmia. The Statistical analysis of collected data was then carried out by using SPSS (Version 26).

RESULTS

A total of 47 patients participated in this study out which 45 patients, who fulfilled the criteria, were included. Out of Forty five patients 17(37.8%) were male and 28(62.2%) were female with a male to female ratio of 1:1.6. We

distributed the patients in seven age groups (15-20, 21-30, 31-40, 41-50, 51-60, 61-70 and more than 70Years of age). Table 1 is showing the number of participants in each group. 71.2% of the respondents were up to 40years of age. 26.7% (12) patients were between 41 to 50 years, while only one patient (2.2%) was between 51 to 60 years.
In 43 patients (95.6%) the anosmia was reversible. Two of our respondents (4.4%) told that their smell sensation didn't return even after 3 months.

Table 1, Frequency distribution of gender.

Gender	No. of Patients	% age
Male	17	37.8
Female	28	62.2

Table 2. Distribution of age.

Age Group (in Year	No. of Patients	% age
15-20	3	6.3
21-30	16	35.6
31-40	13	28.9
41-50	12	26.7
51-60	1	2.2
61-70	0	0
>70	0	0

Table 3: Recovery from anosmia

	Smell Sensation returned back within;					Unable to smell even after 3 months
	1 week	2 week	1 Month	2 Month	3 Month	
n	23	15	2	3	0	2
% age	21.1	33.3	4.4	2.2	0	4.4

Table 4. Status after 3 months

	Recovered from Anosmia	Did not Recover from Anosmia
No. of Patients	43	2
% age	95.6	4.4

DISCUSSION

The purpose of this study was to determine the prognosis of Covid-19 associated anosmia. This study was carried out online on forty five patients who participated by filling "Google survey form". We found that in 43 patients (95.6%) the anosmia was reversible. 23 Patients (51.1%) regained their smell sensation within first week while another 15(33.3%) were also able to smell by the end of second week. By the end of second month 43 patients (95.6%) had recovered from anosmia. Two of our respondents (4.4%) have told that their smell sensation didn't return even after 3 months.

In our study females were found to be affected more than males with a male to female ratio 1:1.6. This finding is consistent with previous studies by Klopfenstein T et al and Hopkins C et al who also reported more female involvement[13,14]. Our study also shows that half of the patients (51.1%) regained their smell sensation within first week and 83.4% of the patients were able to smell by the end of second week. If we look into the literature, Lechien et al also reported 44% recovery in first 8 days[15]. Similarly, Klopfenstein T et al reports the mean duration of anosmia was 9 days in their patients [13]. We also searched regional literature and that also revealed the similar results. Ilyas et al, for example, studied the outcome of anosmia in 150 patients and they found that the mean duration of anosmia was 10 days [16]. In our study, two of our patients (4.4%) did not recover from anosmia even after a period of three months. These findings are consistent with those of Lechien et al who have reported persistent anosmia in 4.7% of their patients even after 6 months [17].
Here we also want to acknowledge a limitation to our study. We conducted this study in the form of an online survey form to collects patients data. Unfortunately, our older population is not much familiar with computer and internet and I think this was the reason why most of our participants were young people. Interestingly, none of our respondent was over 60 years of age; in fact 70.8% of the participants were less than 40 years of age.
Despite of limitations, we still believe that this study is a good contributory effort in helping to understand the prognosis of Covid-19 associated anosmia. As this is still a new disease, therefore more studies are needed with larger sample size to see the pattern, duration and outcome of anosmia in Covid-19.

CONCLUSION

The anosmia in Covid-19 is mostly reversible and in most of the patients its duration is less than 2 weeks. More studies with larger number of patients are required to determine the prevalence and outcome of Covid19-associated anosmia.
Limitations of study (Already mentioned in fourth paragraph of discussion): Here we also want to acknowledge a limitation to our study. We conducted this study in the form of an online survey form to collects patients data. Unfortunately, our older population is not much familiar with computer and internet and I think this was the reason why most of our participants were young people. Interestingly, none of our respondent was over 60 years of age; in fact 70.8% of the participants were less than 40 years of age.
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