PROCEEDING OF THE INTERNATIONAL WEBINAR COVID-19 PANDEMIC:

Impacts, Strategies, and Challenges on The Urban Health

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20 - 21 and 27 - 28 August 2021

PAPER PRESENTATION
"Impact of Covid-19 pandemic on health, medical education, healthcare, physical activity, and others"
3 - 4 September 2021

School of Medicine and Health Sciences
Atma Jaya Catholic University of Indonesia 2021

PROCEEDING OF THE INTERNATIONAL WEBINAR COVID-19 PANDEMIC:

Impacts, Strategies, and Challenges on The Urban Health

EDITOR

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PENERBIT UNIVERSITAS KATOLIK INDONESIA
ATMA JAYA

PROCEEDING OF THE INTERNATIONAL WEBINAR COVID-19 PANDEMIC:
Impacts, Strategies, and Challenges on The Urban Health

Penerbit Universitas Katolik Indonesia Atma Jaya
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INTERNATIONAL WEBINAR
"COVID-19 PANDEMIC: IMPACTS, STRATEGIES, AND CHALLENGES ON THE URBAN HEALTH"

20-21 August 2021, 27-28 August 2021, 3-4 September 2021

FOREWORD

from the Chair – Organizing Committee:

I want to extend a warm welcome to all participants of Atma Jaya Catholic University of Indonesia's International Webinar 2021!

This international webinar is entitled 'COVID-19 Pandemic: Impacts, Strategies, and Challenges on the Urban Health'. The COVID-19 pandemic that began in March 2020 has changed many things in all areas of life. This webinar discusses the impact of the COVID-19 pandemic on urban health in the fields of infection, geriatrics, and addiction, which are the main fields of FKIK Unika Atma Jaya.

International experts from the UK, the Netherlands, Australia, Thailand, and Indonesia will present the material according to their expertise. This international webinar also provides an opportunity for other speakers to present their papers in the free paper session. The information from this webinar is undoubtedly beneficial for doctors, scientists, participants, and the government to overcome the pandemic, especially the impacts, strategies, and challenges in urban health.

I want to express my deepest gratitude to Alomedika for enabling this international webinar to be well organized and attended by many participants. Also, to the sponsors who have supported this international webinar.

Finally, to the speakers, free paper presenters, and participants, I congratulate you on joining this international webinar.

Thank you,
Nawanto Agung Prastowo

FOREWORD

from the Dean – School of Medicine and Health Sciences:

First, I would like to express my gratitude to God Almighty because the online international webinar can run smoothly.

We held this international seminar as a form of our contribution in the scientific field. During this COVID-19 pandemic, holding online seminars has become normal and makes it very easy for us to interact with each other even though we are far apart. This online seminar is intended so that we can continue to share knowledge and experiences, especially those related to urban health problems that are developing during the COVID-19 pandemic. I hope that this international seminar can increase the knowledge and insight of the participants, especially on geriatric topics, infections, and addictions related to the COVID-19 pandemic.

Finally, I would like to thank the organizers who have worked hard to prepare for this event, the resource persons, Alomedika who have facilitated this online seminar, and the event's sponsors.

Stay healthy,
Felicia Kurniawan

INTERNATIONAL WEBINAR
"COVID-19 PANDEMIC: IMPACTS, STRATEGIES, AND CHALLENGES ON THE URBAN HEALTH"

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Oral Presentation 1

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ABSTRACTS

ORAL PRESENTATION

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1A-3

Overview of Anosmia Symptoms in Covid-19 Patients

Fari Ananda, Daud, Hana Ratnawati
Faculty of Medicine, Maranatha Christian University
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Introduction: It's been more than a year since Covid-19 was declared as a pandemic in March 2020, but until now there are still many things not clearly understood. Firstly, the symptoms of Covid-19 were similar to influenza with fever, cough, myalgia, arthralgia and fatigue, but later it was discovered that Covid-19 often causes anosmia, hyposmia and dysgeusia. That's why currently if someone experiences symptoms of sudden anosmia without any airway obstruction or rhinitis, it is necessary to check the possibility of being infected with SARS-CoV2. The purpose of this study was to determine the anosmia symptoms in Covid-19 patients.
Methods: This is a retrospective study using medical record data from the outpatient ENT clinic of RSUD Sumedang, in January-February 2021. Qualitative anosmia examination using the ODoR-19 scale, with 3 sources of odor, which are eucalyptus oil, alcohol and peppermint. A value of 0 indicates anosmia and a value of 10 is normal.
Result: The results showed that there were 68 Covid-19 patients consisting of 43 women (63.2%) and 25 men (36.8%) with ages between 13-81 years and an average of 46.5 years. Anosmia was found in 24 patients (35.5%) and only 3 patients had dysgeusia. Anosmia was more common in women (70.8%) than men (29.2%) and was more common in patients younger than 50 years (66.7%). There were 2 patients aged 13 years with severe anosmia. The initial onset of anosmia was on day 3 and no later than day 9 since the first symptoms with a mean of 4.8 days. There were no patients who only experienced symptoms of anosmia, but all of them were accompanied by fever (100%), cough (62.5%), and cephalgia (29.2%). The results of the qualitative anosmia examination with the ODoR-19 scale showed that 38 patients (84.4%) had severe anosmia, 5 patients (11.1%) had

moderate anosmia and 2 patients (4.4%) had mild anosmia. What is interesting about this study is that dyspnea was much more common in patients without anosmia (75%) compared to patients with anosmia (20.8%). **Conclusion:** Anosmia was found in 35.5% of Covid-19 patients and only 12.5% were accompanied by dysgeusia. Anosmia was more common in women (70.8%) than men and more at a young age. The initial onset of anosmia was on the 3rd day and all accompanied by fever. Qualitative anosmia examination using the ODoR-19 scale, showed 84.4% had severe anosmia.

Keywords: anosmia, Covid-19

This article has been presented in "**International Webinar Covid-19 Pandemic**: **Impact, strategies and challenges on the urban health"** on 3-4 September 2021, organized by School of Medicine and Health Sciences Atma Jaya Catholic University of Indonesia. (**Proceeding ISBN: 978-623-6782-63-3**).

Overview of Anosmia Symptoms in Covid-19 Patients

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Introduction: It's been more than a year since Covid-19 was declared as a pandemic in March 2020, but until now there are still many new things. Covid-19 is usually described with typical symptoms of fever, cough, myalgia and fatigue, known as flu-like symptoms, but it turns out that other clinical manifestations such as anosmia and dysgeusia was recognized as an important symptoms of COVID-19. The purpose of this study was to review the anosmia symptoms in Covid-19 patients.
Methods: This is a retrospective study using medical record data from the outpatient ENT clinic of RSUD Sumedang, in January-February 2021. Qualitative anosmia test using the ODoR-19 scale, with 3 sources of odor, which are eucalyptus oil, alcohol and peppermint. A value of 0 indicates anosmia and a value of 10 is normal.
Result: The results showed that there were 68 Covid-19 patients consisting of 43 women (63.2%) and 25 men (36.8%) with ages between 13-81 years and mean 48.31±16.09 years. Anosmia was found in 24 patients (35.5%) and only 3 patients accompany with dysgeusia. The mean age of patients with anosmia was 41.04±15.87 years while those without anosmia was 52.27±14.94 years and significantly different (p=0.005). Anosmia was more common in individu younger than 60 years (43.40%) compared to individu more than 60 years (6.67%). Anosmia found in 70.8% women compared to group without anosmia, there was 59.10% women. The initial onset of anosmia was on day 3 and no later than day 9 since the first symptoms with a mean of 4.83±1.90 days. In addition to anosmia, all patients were accompanied by fever (100%), cough (62.5%), and headache (29.2%). The qualitative anosmia test showed, respectively, 2.78% mild anosmia, 11.11% moderate anosmia and 86.11% severe anosmia. What is interesting about this study is that dyspnea was much more common in patients without anosmia (75%) compared to patients with anosmia (20.8%).
Conclusion: Anosmia was found in 35.5% of Covid-19 patients and only 12.5% were accompanied by dysgeusia. Anosmia was more common in women (70.8%) and individu younger than 60 years (43.40%) compared to individu older than 60 years (6.67%) The initial onset of anosmia was on the third day and all accompanied by fever. Qualitative anosmia examination using the ODoR-19 scale, showed 86.11% had severe anosmia.

Keywords: anosmia, Covid-19

INTRODUCTION

It's been more than a year since Covid-19 was declared as a pandemic in March 2020 and usually described with typical symptoms of fever, cough, myalgia and fatigue, known as flu-like symptoms, but it turns out that many clinical manifestations have only been discovered recently. Olfactory dysfunction or anosmia was recently recognized as an important symptom of COVID-19, even sudden anosmia can be used as a specific symptom for the identification of COVID-19 patients.[1] That's why currently if someone experiences symptoms of sudden anosmia without any airway obstruction or rhinitis, it is necessary to check the possibility of being infected with SARS-CoV2. Several researchers report that this olfactory disorder is found in 20-85% of confirmed Covid-19 patients.[2,3]

A study in South Korea towards 3,191 Covid-19 patients, anosmia and ageusia was found in 15.3% patients at the onset of symptoms and 15.7% of patients were found in patients without other symptoms. This anosmia is significantly more common in women and young people and usually symptoms disappear after 3 weeks.[4]

There are several smell disorders and someone can have difficulty in smelling odors. Anosmia is the loss of the ability to smell, and can be partial or total. This can be caused by nasal congestion or obstruction of the nose in smelling, so that the air containing the odorant cannot dissolve in the mucous membrane and binds to receptors on the cilia of the olfactory cells. Anosmia can be caused by conductive disorders or sensorineural disorders. Conductive disorders are caused by impaired transmission of odorant stimuli to receptors on cilia of olfactory cells. Sensorineural disorders are caused by abnormalities in the neural pathways that transmit odorant impulses to the central nervous system.[5]

It is known, that SARS-CoV-2 has a specific receptor, namely ACE-2, to enter the cells. ACE-2 receptors are abundant in the respiratory epithelium in the nose, especially in non-neuronal cells, namely supporting cells, stem cells, and perivascular cells.11 The mechanism of anosmia in Covid-19 patients occurs because the virus enters the respiratory tract and causes damage to the sensory-olfactory epithelium so that Olfactory sensorineural dysfunction results in anosmia. Anosmia in Covid-19 can also go through a central route due to a virus that attacks the olfactory receptors on its neuro-epithelium and extends to the olfactory bulb and can invade the central nervous system.[6]

The aim of this study was to review the anosmia symptom in COVID-19 patients in correlation to other clinical profiles, which are gender, age, onset of anosmia and relation to other symptoms as well as quality of the anosmia.

MATERIALS AND METHODS

This is a retrospective study using medical record data from the outpatient ENT clinic of RSUD Sumedang. Data were recorded on all Covid-19 patients (whole sampling) in outpatient ENT Clinic at the Sumedang Hospital, from January to February 2021. The data recorded were gender, age, whether experienced anosmia, onset of anosmia, other symptoms experienced and the results of qualitative anosmia tests. Qualitative anosmia test using the ODoR-19 scale, with 3 sources of odor, which are eucalyptus oil, alcohol and peppermint. A value of 0 indicates anosmia and a value of 10 is normal.

Here is the ODoR-19 scale assessment criteria:

0-2 : severe anosmia
3 : moderate anosmia
4-10 : mild anosmia

All data were analyzed descriptively in the form of tables or graphs and some data analyze with independent T Test with α=0.05.

RESULT AND DISCUSSION

Rumah Sakit Umum daerah (RSUD) Sumedang is a type B hospital of the Sumedang regional Goverment, with 495 beds and 15 outpatient clinics. Located in Jl. Palasari No. 80, Kotakulon, South Sumedang District, West Java.

In January and February 2021, there were 68 Covid-19 patients visited ENT outpatients clinic, consisting of 43 women (63.2%) and 25 men (36.8%) with ages between 13-81 years and an average of 46.5 years.

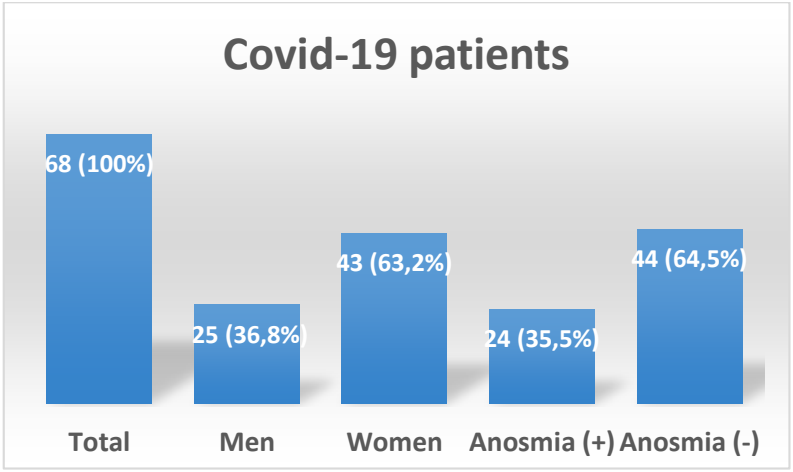

Figure 1. Covid-19 patients in ENT Clinic RSUD Sumedang

Of the 68 Covid-19 patients, 24 patients (35.5%) had anosmia symptoms, while 44 (64.5%) without anosmia. This is in accordance with previous research, a meta-analysis study involving 8.438 patients. The results showed that anosmia symptoms were obtained 28.5-53.9% with an average of 41%.[7] Another study involving 130 Covid-19 patients found that 34.6% suffered anosmia symptoms.[5] One study in Korea that includes 3.191 patients, acute anosmia or ageusia was observed in 15.3% patients in the early stage of Covid-19.[4] In this study, of the 24 patients with anosmia, only 3 patients (12.5%) were accompanied by dysgeusia.

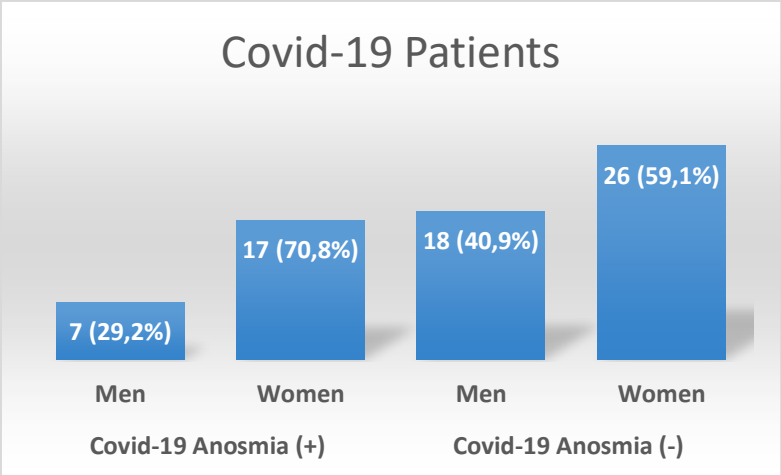

Figure 2. Comparison between gender in Covid-19 patients with/without anosmia

Figure 2 showed that in Covid-19 patients with anosmia, there were more women (70.8%) compared to the group without anosmia, which was 59.1% women. This is the same as a previous study from Altundag (2020) which found that in Covid-19 patients with anosmia, there were 58.8% women than those without anosmia (25.5%).[8] However, previous study from Agyeman (2020) stated that there was no significant difference in prevalence between men and women in Covid-19 patients with anosmia.[7]

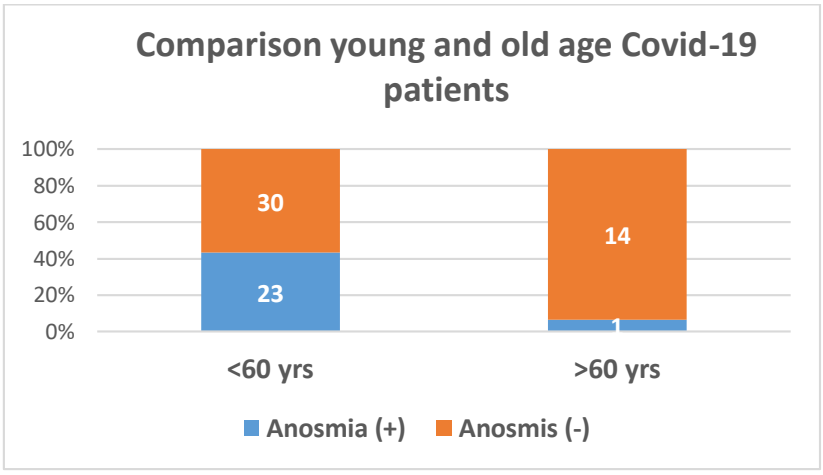

Figure 3. Comparison of young adult (≤60 years) and old age (>60 years) in Covid-19 patients with and without anosmia.

If Covid-19 patients with anosmia and without anosmia are compared based on age under 60 years and age over 60 years, it turns out that anosmia is more common in young adults. In Covid-19 patients aged less than 60 years as many as 23 patients (43.40%) experienced anosmia compared to Covid-19 patients aged more than 60 years, only 1 patient (6.67%) experienced anosmia ($p<0.05$). In this study there were 2 adolescent patients aged 13 years who suffered from anosmia. The mean age of patients with anosmia was 41.04±15.87 years while those without anosmia was 52.27±14.94 years and significantly difference ($p=0.005$).

Previous study also showed the same results, that Covid-19 patients with anosmia were more dominant in young adults with a mean age of 37.1 years compared to the group without anosmia with a mean age of 43.7 years.[8] In this study, the initial onset of anosmia was on day 3 and no later than day 9 since the first symptoms with a mean of 4.8 days.

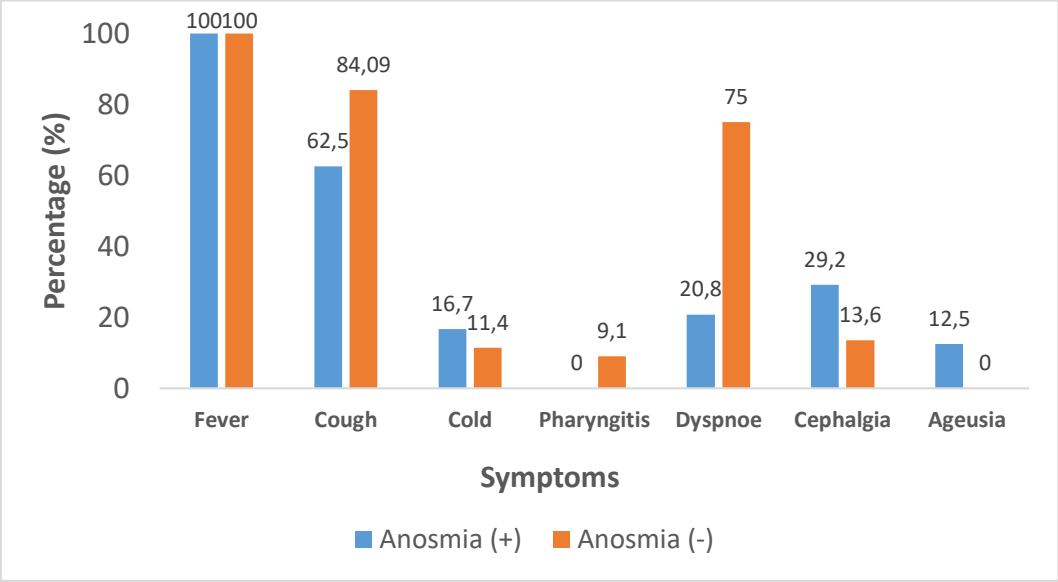

Figure 4. Comparison of Covid-19 symptoms in groups with and without anosmia

There were no patients who only experienced anosmia symptom, but all of them were accompanied by fever (100%), cough (62.5%), and cephalgia/headache (29.2%). Other synmptoms were cold, pharyngitis and dyspnoe. What is interesting in this study is that dyspnea/short of breath was much more common in patients without anosmia (75%) compared to patients with anosmia (20.8%) and no patient with anosmia had pahryngitis. One of the previous study stated that symptoms other than anosmia were fever (59.1%), cough (53%), and diarrhea (45.5%).[8] In our study, anosmia always preceded with other symptoms which is fever.

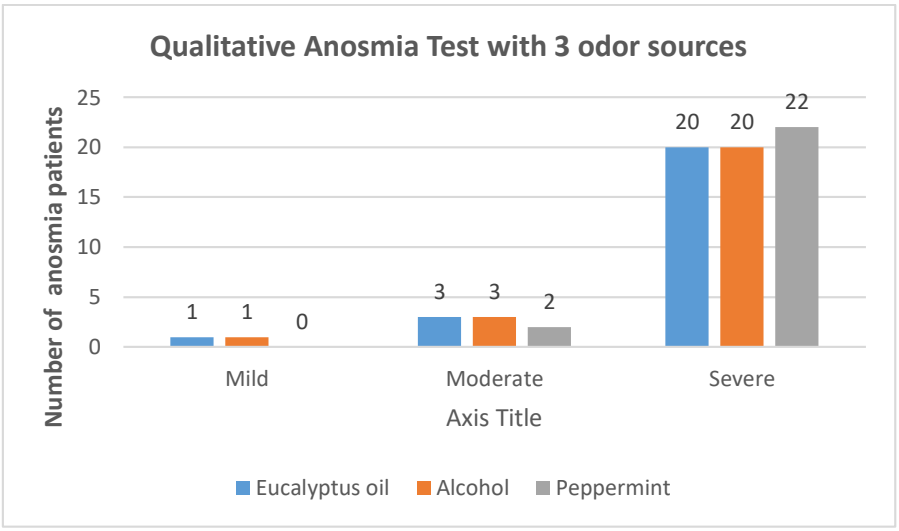

Figure 5. Qualitative Anosmia Test with 3 odor sources

In Figure 5 showed qualitative anosmia test using the ODoR-19 scale, with 3 sources of odor, which are eucalyptus oil, alcohol and peppermint. A value of 0 indicates anosmia and a value of 10 is normal. There was no difference in the qualitative anosmia test between eucalyptus oil and alcohol. On the use of peppermint, the results are slightly different, there is no mild anosmia. This may be due to the source of the smell, namely peppermint, is less strong than that of eucalyptus and alcohol. If assessed as a whole, the results of the qualitative anosmia test can be seen in Figure 6.

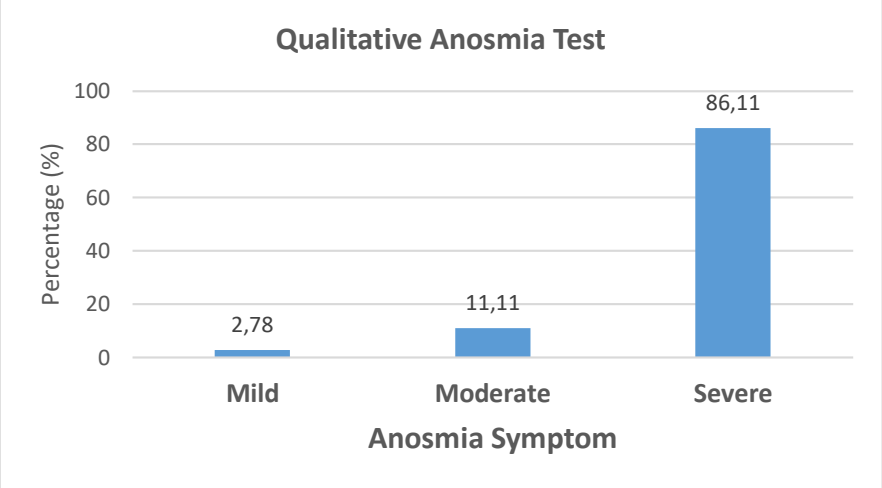

Figure 6. The result of Qualitative Anosmia Test

The qualitative anosmia test with the ODoR-19 scale showed, respectively, 2.78% mild anosmia, 11.11% moderate anosmia and 86.11% severe anosmia. Severe anosmia is not related to the patient's severe condition.

Anosmia can be caused by conductive disorders (peripheral pathways) or sensorineural disorders (central pathways). Conductive disorder is caused by impaired transmission of odorant stimuli to receptors on cilia of olfactory cells. Sensorineural disorders are caused by abnormalities in the neural pathways that transmit odorant impulses to the central nervous system. Damage can occur in the olfactory bulb and the central olfactory pathway.[9,10]

In Covid-19, the SARS-CoV-2 will entry the cell through the ACE2 (Angiotensin-converting enzyme 2) as the Receptor Binding Domain (RBD). ACE-2 receptors can be found in the respiratory tract from the nose to the alveoli.[11] Viruses have Spike (S) protein which plays an important role in the entry of the virus into the cells through the binding between the S protein and the ACE2 receptor. After the virus binds to the ACE2 receptor, it causes a conformational change in the S protein and is followed by the degradation of the S protein by the TMPRSS2 enzyme and then the viral RNA will enter the cell where the viral replication takes place.[11,12]

In the olfactory epithelium, there are 3 types of cells, which are olfactory neurons, sustentacular cells and basal cells. Sustentacular cells and basal cells express ACE2 and the

protease TMPRRS2 but not in olfactory neurons. At the end of the olfactory neurons, can be found cilia, a place to bind odorants, which are molecules that can be smelled. Due to high expression of ACE-2 in sustentacular cells and basal cells, the virus can enter to these cells and damage the cells and will interfere the function of olfactory neurons, and caused anosmia.[13] The presence of sudden anosmia could become a good predictor of COVID-19, that's why it is important to patients with sudden olfactory dysfunction to take an examination for the possibility of Covid-19.[14]

CONCLUSION

Anosmia was found in 35.5% of Covid-19 patients and only 12.5% were accompanied by dysgeusia. Anosmia was more common in women (70.8%) and individu younger than 60 years (43.40%) compared to individu older than 60 years (6.67%) The initial onset of anosmia was on the third day and all accompanied by fever. Qualitative anosmia examination using the ODoR-19 scale, showed 86.11% had severe anosmia.

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20-21, 27-28 Aug, & 3-4 Sep 2021

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