



Relationship ENT Complaints with Severity and Length of Hospitalization of COVID-19 patients at UMM Hospital

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ABSTRACT

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by *Severe Acute Respiratory Syndrome Coronavirus 2* (SARS-CoV-2). Most COVID-19 patients have no symptoms, but if they have complaints or symptoms that are most often felt are fever, cough, anorexia, muscle pain, difficulty of breathing, malaise. Complaints of hyposmia and dysgeusia are early complaints found in COVID-19 patients, which can appear in the first 5-7 days. This can be used to help early detection of COVID-19 cases so that it can break the chain of transmission of COVID-19. This study is an analytic descriptive study. This research was conducted from April to June 2021, in the COVID-19 inpatient room at UMM Hospital. Data analysis in this study used *Chi square*. All respondents in this study complained coughing, namely 90 respondents. Other complaints include rhinitis, anosmia, sore throat, dysgeusia and vertigo. From the results of the analysis between ENT complaints severity of COVID-19 patient, the value of $p=0.231$ ($p>0.05$) was obtained and length of hospitalization has p value 0.116 ($p>0.05$). In this study, it can be concluded that there is no statistically significant relationship between ENT complaints with the severity and length of hospitalization of COVID-19 patients that treated at RSUMM.

Keywords: ENT symptoms, severity of COVID-19 patient, COVID-19

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INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by *Severe Acute Respiratory Syndrome Coronavirus 2* (SARS-CoV-2) (Krajewska *et al.*, 2020; Gosavi *et al.*, 2022). The first case of pneumonia of unknown etiology was found in Wuhan City, Hubei Province, China on December 31 2019. Indonesia itself reported the first case of COVID-19 on March 2, 2020. Cases increased and spread rapidly throughout Indonesia. As of December 27, 2020, a total of 706,837 confirmed cases of COVID-19 have been reported in Indonesia and 20,994 people have died from COVID-19 (Burhan *et al.*, 2020; Sutaryono, Andasari and Kasjono, 2020).

Symptoms that appear in COVID-19 patients can be different in each individual. Most COVID-19 patients have no symptoms, but if they have complaints or symptoms that are most often felt are fever, cough, anorexia, muscle pain, difficulty of breathing, and malaise. The most common

ENT symptoms are loss of smell (anosmia), loss of sense of taste (dysguesia), sore throat, cough, nasal congestion and runny nose (Pratiwi *et al.*, 2022; Wardani, Bistara and Septianingrum, 2022).

In a study conducted by El-Anwar *et al.* (2021) stated that out of 1773 respondents who confirmed COVID-19, the most commonly ENT symptom or complaint was sore throat (11.3%) (El-Anwar *et al.*, 2021). Another study conducted by Borah *et al.* (2022) showed that of 2000 respondents who confirmed COVID-19, the majority of respondents had ENT complaints, namely sore throat (80%) and headache (76%) (Borah, Das and Goswami, 2022). The study also stated that 66% of respondents who had ENT complaints also had comorbid diseases, such as coronary artery disease, diabetes mellitus, and others. Complaints of hyposmia and dysgeusia are the initial complaints that found in COVID-19 patients, which can appear in the first 5-7 days. This can be used to help early detection of COVID-19 cases so that it can break the chain of transmission of COVID-19 (Borah, Das and Goswami, 2022; Pratiwi *et al.*, 2022).

Therefore, researchers wanted to know the relationship between ENT complaints and the severity of COVID-19 and the length of hospitalization in confirmed COVID-19 patients at UMM Hospital. It is believed that understanding this relationship can isolate COVID-19 more quickly so it can decrease the morbidity and the length of stay from COVID-19.

METHODS

This research is a descriptive analytic study. This study was conducted from April to June 2021, in the COVID-19 inpatient room at UMM Hospital. The samples used in this study were patients who were hospitalized in the COVID-19 room and proved positive for COVID-19 which had been proven by positive PCR results and met the inclusion criteria in this study. Sampling in this study used a total sampling technique, where researchers would use all respondents who met the inclusion and exclusion criteria. Data analysis in this study used *Chi square*.

RESULTS AND DISCUSSION

The results in this study obtained 90 respondents who were hospitalized at UMM Hospital and confirmed COVID-19 with more male respondents than female respondents, namely 58.9% and 41.1%. This shows that most of the COVID-19 patients hospitalized at UMM Hospital and involved in this study were male. The majority of respondents in this study were in the productive age range, namely <26 years to 45 years as many as 37 respondents (41.1%). Most of the confirmed COVID-19 patients who are hospitalized do not have comorbid diseases. The results of this study are in line with research conducted by Pratiwi D, *et al.* (2022) on COVID-19 patients at dr. Moewardi with the majority of respondents being of productive age (Pratiwi *et al.*, 2022). Research by Borah *et al.* (2022) showed that the majority of respondents in the study were male (Borah, Das and Goswami, 2022; Srivastava, Agarwal and Alam, 2022).

Table 1. Sociodemographic Data of Research Respondents

Gender	Frequency	Percentage
Man	53	58.9%
Woman	37	41.1%
Comorbid		
There isn't any	54	60.0%
There is	36	40.0%
Age		
<26 years – 45 years	37	41.1%
46 – 55 years	21	23.3%
56 – >65 years	32	35.6%
ENT complaints	Frequency	Percentage
There is	63	70.0%
There isn't any	27	30.0%

Based on the table above, it is known that of the 90 COVID-19 patients who were hospitalized at the UMM Hospital who were involved in this study, 70.0% of the patients had ENT complaints, then 30.0% of the patients in general did not have ENT complaints.

Table 2. ENT Complaints Data

ENT complaints	Frequency	Percentage
Sore throat		
There is	18	20.0%
No	72	80.0%
Cough		
There is	90	100.0%
There isn't any	0	0
Rhinitis		
There is	47	52.2%
No	43	47.8%
dysguesia		
There is	4	4.4%
No	86	95.6%
Anosmia		
There is	22	24.4%
No	68	75.6%
vertigo		
There is	2	2.2%
No	88	97.8%

Based on the results of the study, it was found that the most common ENT complaints felt by patients were cough and rhinitis, which were 100% and 52.2%. Other complaints that many patients feel are anosmia and sore throat. Meanwhile, vertigo was only felt by 2 patients and dysgeusia were felt by 4 patients. According to a study conducted by Borah H et al (2022), non-ENT manifestations that were commonly felt by patients included fever and cough, while the most common ENT complaints felt by respondents in the study were sore throat and headaches. In addition, the results of a systematic review of several studies indicate that the most common ENT complaint is sore throat (El-Anwar *et al.*, 2021; Saniasiaya, Islam and Abdullah, 2021; Borah, Das and Goswami, 2022).

In addition to rhinitis, in this study respondents also felt complaints of anosmia or loss of smell which is a common complaint of COVID-19 patients. This is in line with research conducted by Pratiwi et al (2022) which showed that olfactory disorders were the second most common ENT complaint, namely 37 respondents (11.71%) (Pratiwi *et al.*, 2022). Anosmia can be broadly categorized as a conductive or sensorineural loss of smell. SARS-CoV-2 infection can cause conductive olfactory dysfunction due to edema of the nasal epithelium (Sakalli *et al.*, 2020; Yan *et al.*, 2020; Brandão Neto *et al.*, 2021). This is temporary and most COVID-19 patients recover within eight days. In addition, postviral anosmia occurs due to injury to part or all of the olfactory epithelium to the olfactory sensory neurons or olfactory nerves, causing a decrease in the number of olfactory nerve cells and cilia in the nasal mucosa which are replaced by metaplastic squamous epithelial cells (Singh Kaushik *et al.*, 2021). Post viral anosmia can last for several weeks to several months after rhinitis complaints improve. It is related to the regeneration of the olfactory nerve and olfactory epithelium (Han *et al.*, 2020; Vaira *et al.*, 2020).

The most common symptoms of COVID-19 are fever, tiredness and dry cough. Some other complaints that may be felt are sore throat, nasal congestion, runny nose, headache, conjunctivitis, diarrhea, loss of smell and smell, and skin rashes (Moein *et al.*, 2020; Patil, 2020; Vaira *et al.*, 2020; Srivastava, Agarwal and Alam, 2022). These symptoms are usually mild and appear gradually. However, in severe cases can lead to *Acute Respiratory Distress Syndrome* (ARDS), sepsis, multi-organ failure and death. Elderly patients and patients with comorbidities have a greater risk of falling in severe cases. COVID-19 patients with mild symptoms can recover after one week. Meanwhile, severe cases of COVID-19 require hospitalization. Length of hospitalization is the length of time a patient is hospitalized in one treatment period (Rees *et al.*, 2020; Vekaria *et al.*, 2021).

In table 3 shows that out of 90 COVID-19 patients who were hospitalized at UMM Hospital with a length of stay of <7 days, there were 40 patients, while 11 patients did not have ENT complaints. The majority of patients (56.7%) in this study were hospitalized at UMM Hospital for <7 days. A small proportion of patients who were hospitalized for more than 14 days found 9 patients (10.0%) with 6 patients having ENT complaints and 3 patients not having ENT complaints. Other research showed that the majority of respondents in the study had an inpatient period of <14 days.

The researcher stated that this could happen because the respondents had a good immune system and the symptoms experienced by the majority of respondents were mild so that they could shorten the time of hospitalization (Lucijanic *et al.*, 2023; Summanen *et al.*, 2023). Other study have stated that the length of day for treatment of COVID-19 patients is influenced by patient's age. Elderly patients or those aged >65 years are very vulnerable to being exposure to COVID-19 because the immune system has begun to decline and the presence of comorbidities such as heart disease, diabetes mellitus, and hypertension which can worsen the patient's condition (Rees *et al.*, 2020; Senewe *et al.*, 2021; Abduljabbar *et al.*, 2022).

Table 3. Analysis of the Relationship between Length of Hospitalization and ENT Complaints

Length of Hospitalization	ENT complaints				Amount		P Value
	There is		There isn't any		n	%	
	n	%	n	%			
< 7 days	40	44.40%	11	12.20%	51	56.70%	0.116
7-14 days	17	18.90%	13	14.40%	30	33.30%	
>14 days	6	6.70%	3	3.30%	9	10.00%	

Based on the table above, it is known that the *Chi-Square* probability value is 0.116. These results show the probability > *level of significance* (alpha ($\alpha=5\%$)). Thus it can be stated that there is an insignificant relationship between length of hospitalization with ENT complaints in COVID-19 patients. This can be because in this study the majority of respondents were at a productive age and had a good immune system so that the length of hospitalization was shorter. This study is in line with research conducted by Al Khlaifat et al (2023) which states that there is no direct relationship between the disease and length of hospitalization. This can be due to various factors including the therapy that had been given and abnormal findings in the radiology examination (Al-Khlaifat *et al.*, 2023).

Table 4. Analysis of the Relationship between Patient Conditions and ENT Complaints

Conditions of COVID-19 Patients	ENT complaints				Amount		P Value
	There is		There isn't any		n	%	
	n	%	n	%			
Moderate	54	60.00%	20	22.20%	74	82.20%	0.231
Severe	9	10.00%	7	7.80%	16	17.80%	

The results of the study showed that of the 90 COVID-19 patients hospitalized at UMM Hospital, 60.0% of the patients in moderate condition experienced ENT complaints and those who did not experience ENT complaints were 22.2%. The majority of COVID-19 patients admitted to UMM Hospital were in moderate condition as many as 82.2% and as many as 17.8% in a severe condition.

Based on the expected values of the relationship between ENT complaints and severity of COVID-19 patient, it is known that 25.0% of cells produce *expected values* that are smaller than 5. Thus,

testing the relationship between severity of COVID-19 patient and the ENT complaints was carried out using *Fisher's Exact test*. Based on the table above, it is known that the *Fisher's Exact* probability value is 0.231. These results show a probability $>$ level of significance (alpha ($\alpha=5\%$)). Thus it can be stated that there is an insignificant relationship between ENT complaints and severity of COVID-19 patients. This study is in line with research conducted by Moein et al. (2020) and Vaira et al. (2020) which showed that there was no relationship between olfactory disorders and disease severity (Moein et al., 2020; Vaira et al., 2020).

In this study, this could be because when the patient first came to the hospital, an in-depth history of ENT complaints was not taken. In addition, the lack of collaboration with ENT specialists in treating positive COVID-19 patients in the treatment room can be an obstacle in exploring ENT complaints in these patients. Meanwhile, different results were found in a study conducted by Yan et al (2020) on 196 patients showing that patients who had complaints of anosmia or hyposmia had a lower rate of hospitalization when compared to patients who did not experience these complaints, so patients without these symptoms were advised to Seek immediate treatment because of possible severe systemic inflammation (Yan et al., 2020; Mendonça et al., 2022).

CONCLUSION

In this study, there was no statistically significant relationship between ENT complaint and severity of COVID-19 patients who were treated at UMM Hospital from April to June 2021. The majority of respondents in this study complaints of cough and rhinitis. In addition, most of the patients who had ENT complaints were hospitalized for less than 7 days. In future research, it is necessary to find out how sociodemographic factors or other factors can influence the severity and length of stay of COVID-19 patients.

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