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Original Research Article

Characteristics of probable COVID-19 Omicron symptoms in Sanglah hospital Denpasar

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ABSTRACT

Background: Omicron (B.1.1.529) is a variant of COVID-19 which is first reported from Gauteng Province, South Africa in November 2021. This variant was considered the fifth variant of concern (VOC) by the world health organization (WHO) due to its much faster transmission but with milder clinical manifestations than other COVID-19 variants.
Methods: This retrospective cross-sectional descriptive study was conducted in Sanglah general hospital, Denpasar, Bali in March 2022. Subjects of this study were all patients who were diagnosed with probable COVID-19 Omicron by having a positive S-gene target failure (SGTF) of a reverse transcriptase polymerase chain reaction (RT-PCR) test in Sanglah general hospital from January to February 2022. All subjects must age 18 years old or older. Data on patient characteristics and clinical manifestations were obtained from medical record data and analyzed using statistical package for service solution (SPSS) for windows version 25.
Results: A total of 79 probable COVID-19 Omicron patients were analyzed in this study. Most of them were elderly who age more than 65 years old (30.4%), male (50.6%), and work as an entrepreneur (24.1%). The majority of probable COVID-19 Omicron patients were symptomatic (89.9%) with the most common clinical manifestation found was cough (54.9%). Other clinical manifestations found were shortness of breath (50.7%), fever (38.0%), fatigue (21.1%), runny nose (11.3%), sore throat (8.5%), nausea and vomit (2.8%), headache (1.4%), diarrhea (1.4%), and anosmia (1.4%).
Conclusions: The clinical manifestations of probable COVID-19 Omicron patients vary but most of them were classified as mild symptoms.

Keywords: Coronavirus disease 2019, Omicron, SGTF

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). COVID-19 was first discovered in the city of Wuhan, Hubei Province, China on 31 December 2019. On March 11, 2020, COVID-19 was declared a pandemic by the WHO. The first 2 cases of COVID-19 in Indonesia were found on 2 March 2020 and number of confirmed cases of COVID-19 infection in Indonesia keep increasing until it reach 4,262,720 cases on 31 December 2021.[1–3]

COVID-19 infection can cause various clinical symptoms, ranging from asymptomatic, mild, moderate, to severe/critical. Clinical symptoms that are often found are fever (body temperature more than 38ºC), cough, and shortness of breath. In addition, it can also be accompanied

by fatigue, myalgia, anosmia, ageusia, and gastrointestinal symptoms including diarrhea. In severe cases, the patient's condition may progressively deteriorate, such as acute respiratory distress syndrome (ARDS), septic shock, metabolic acidosis, bleeding or coagulation system dysfunction.[1]

COVID-19 has several variants, including the Omicron variant (B.1.1.529) that was which was first reported from Gauteng Province, South Africa on 24 November 2021. On 26 November 2021, the Omicron variant was classified as the fifth VOC by the WHO. The possibility of the Omicron variant infection in COVID-19 patients can be identified through the SGTF test. A positive SGTF result is suggestive of Omicron variants infection. However, confirmation should be obtained by sequencing at least a subset of SGTF samples.[4]

The first case of Omicron COVID-19 infection in Indonesia was found in a janitor at the emergency COVID-19 hospital Wisma Atlet Jakarta on December 15, 2021.[5] Until 14 January 2022, it was reported that there were 644 confirmed cases of Omicron COVID-19 infection in Indonesia. Among the reported confirmed Omicron cases in Indonesia, approximately 529 cases were travellers from abroad, while 115 cases were the local transmissions cases.[2]

The Omicron variant of COVID-19 is reported to spread more rapidly than other variants but had various milder clinical symptoms. Based on the weekly report from the centers for disease control and prevention (CDC), the most prominent clinical symptom of patients with COVID-19 of Omicron variant was cough which was found in 89% of patients. Other reported symptoms were fatigue (65%), runny nose (59%), fever (38%), nausea/vomiting (22%), shortness of breath (16%), diarrhea (11%), and anosmia/ageusia (8%).[6] However, the studies regarding this relatively new variant of COVID-19 were still limited, especially in Indonesia. Therefore, this study aims to characterize the clinical manifestations found in confirmed COVID-19 patients with probable Omicron variants infection in a tertiary hospital in Indonesia, Sanglah general hospital Denpasar, Bali, Indonesia.

METHODS

This descriptive study was using retrospective cross-sectional methods and was conducted in Sanglah general hospital Denpasar, Bali, Indonesia in March 2022. This study involved all confirmed cases of COVID-19 with probable Omicron variants in Sanglah general hospital Denpasar from January until February 2022. The sampling method used in this study was the total sampling method so all patients that met the criteria of this study were included. All subjects must be aged 18 years or older and were diagnosed with confirmed COVID-19 with probable Omicron variant by having a positive result of SARS-CoV-2 RT-PCR test and a positive SGTF test result based on the nasopharyngeal and oropharyngeal swab. All data were obtained from the medical records. Thus, patients with the incomplete medical record were excluded from this study.

A total of 258 COVID-19 patients were found at Sanglah general hospital from January until February 2022, in which as many as 179 samples were excluded due to incompleted medical record. Seventy-nine samples fulfilled the inclusion criteria and were analyzed using SPSS for windows version 25. Data was analyzed using descriptive statistical analysis to describe characteristics and variable frequency distribution.

RESULTS

A total of 79 COVID-19 with probable Omicron variants patients were analyzed in this study. The sociodemographic characteristics of these patients were shown in Table 1. Most of them were elderly aged more than 65 years old (30.4%), while the least were adults aged 36-54 years old (8.9%). The majority of patients were male (50.6%) and works as an entrepreneur (24.1%).

Table 1: The sociodemographic characteristics of patients of COVID-19 with probable Omicron variants (n=79).

Characteristics	F (%)
Age (years)	
Late adolescent (17-25)	9 (11.4)
Young adult (26-35)	8 (10.1)
Early adult (26-45)	7 (8.9)
Middle adult (46-55)	11 (13.9)
Late adult (56-65)	20 (25.3)
Elderly (>65)	24 (30.4)
Sex	
Male	40 (50.6)
Female	39 (49.4)
Occupation	
Entrepreneur	19 (24.1)
Private employee	16 (20.3)
Farmer	7 (8.9)
Civil servant	1 (1.3)
Student	3 (3.8)
Retiree	4 (5.1)
Housewife	12 (15.2)
Unemployed	17 (21.5)

Seventy-one out of 79 patients with the positive SGTF test result were symptomatic (Table 2). Cough (54.9%) was the most common symptom found among the COVID-19 with probable Omicron variants patients in this study (Table 3). Other symptoms found were various, but almost all of them were considered mild symptoms, such as shortness of breath (50.7%), fever (38.0%), fatigue (21.1%), runny nose (11.3%), sore throat (8.5%), nausea and vomit (2.8%), headache (1.4%), diarrhea (1.4%), and anosmia (1.4%).

According to the age group in Table 4, patients aged more than 65 years old had the most symptoms in this study. In the late adolescent age group (aged 17-25 years old), most of them showed symptoms of fever (33.3%) and cough (33.3%). Only 1 person (16.7%) showed symptoms of a runny nose, sore throat, and weakness. In the age group of 26-35 years, most showed cold symptoms (44.4%). In the 36-45-year age group, most of them showed symptoms of cough (80%). In the 46-55-year age group, most of them showed symptoms of shortness of breath. In the 56-65-year age group, most showed symptoms of shortness of breath (66.7%). Meanwhile, in the elderly age group, most of them showed symptoms of cough (68.0%). In all age groups, only the elderly showed symptoms of diarrhea, anosmia, nausea/vomiting, and the headache (each was 4%).

Table 5 showed the distribution of clinical manifestations based on sex. Male patients were more symptomatic than female patients in this study. Most male patients had shortness of breath (61.5%) and the other symptoms were cough (56.4%), fever (46.2%), fatigue (23.1%), nausea/vomiting (5.1%), sore throat (5.1%), and only 2.6% showed symptoms of runny nose, diarrhea, anosmia, and headache. While in female patients, most of them showed symptoms of cough (53.1%) and shortness of breath (37.5%).

Table 2: Characteristics of symptoms in patients of COVID-19 with probable Omicron variants, (n=79).

Characteristics	F (%)
Symptoms	
Symptomatic	71 (89.9)
Asymptomatic	8 (10.1)

The clinical manifestations were also classified based on occupation (Table 6). It was found that patients who were entrepreneurs were the most symptomatic with the most common clinical manifestation was cough (50%) and the least common clinical manifestation being sore throat (5.6%). In patients who are employees, most of them show symptoms of shortness of breath (40%) and cough (40.0%). Shortness of breath was the most common clinical manifestation found in patients who were farmers (83.3%) and housewives (85.7%). All patients who worked as the civil servant had symptoms of shortness of breath and fatigue (100%). In patients who were students, most of them showed symptoms of fever (66.7%) and cough (66.7%). Cough is the most common symptom in the group of patients who were retirees or unemployed.

Table 3: Distribution of symptoms based on positive SGTF result, (n=71).

Characteristics	F (%)
Fever	
Yes	27 (38.0)
No	44 (62.0)
Shortness of breath	
Yes	36 (50.7)
No	35 (49.3)
Cough	
Yes	39 (54.9)
No	32 (45.1)
Runny nose	
Yes	8 (11.3)
No	63 (88.7)
Sore throat	
Yes	6 (8.5)
No	65 (91.5)
Fatigue	
Yes	15 (21.1)
No	56 (78.9)
Diarrhea	
Yes	1 (1.4)
No	70 (98.6)
Anosmia and/or ageusia	
Yes	1 (1.4)
No	70 (98.6)
Nausea and vomit	
Yes	2 (2.8)
No	69 (97.2)
Headache	
Yes	1 (1.4)
No	70 (98.6)

Table 4: Distribution of symptoms based on age groups in patients of COVID-19 with probable Omicron variants, (n=71).

Symptoms	Age (Years), f (%)					
	17-25	26-35	36-45	46-55	56-65	>65
Fever	2 (33.3)	2 (22.2)	3 (60.0)	3 (37.5)	8 (44.4)	9 (36.0)
Shortness of breath	0 (0.0)	3 (33.3)	1 (20.0)	6 (75.0)	12 (66.7)	14 (56.0)
Cough	2 (33.3)	3 (33.3)	4 (80.0)	3 (37.5)	10 (55.6)	17 (68.0)
Runny nose	1 (16.7)	4 (44.4)	2 (40.0)	0 (0.0)	0 (0.0)	1 (4.0)
Sore throat	1 (16.7)	1 (11.1)	0 (0.0)	2 (25.0)	1 (5.6)	1 (4.0)
Fatigue	1 (16.7)	1 (11.1)	0 (0.0)	3 (37.5)	7 (38.9)	3 (12.0)
Diarrhea	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.0)

Continued.

Symptoms	Age (Years), f (%)					
	17-25	26-35	36-45	46-55	56-65	>65
Anosmia orageusia	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.0)
Nausea and vomit	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.6)	1 (4.0)
Headache	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.0)
Total	6 (100.0)	9 (100.0)	5 (100.0)	8 (100.0)	18 (100.0)	25 (100.0)

Table 5: Distribution of symptoms based on sex in patients of COVID-19 with probable Omicron variants, (n=71).

Symptoms	Sex, F (%)	
	Male	Female
Fever	18 (46.2)	9 (28.1)
Shortness of breath	24 (61.5)	12 (37.5)
Cough	22 (56.4)	17 (53.1)
Runny nose	1 (2.6)	7 (21.9)
Sore throat	2 (5.1)	4 (12.5)
Fatigue	9 (23.1)	6 (18.8)
Diarrhea	1 (2.6)	0 (0.0)
Anosmia/ ageusia	1 (2.6)	0 (0.0)
Nausea and vomit	2 (5.1)	0 (0.0)
Headache	1 (2.6)	0 (0.0)
Total	39 (100.0)	32 (100.0)

Table 6: Distribution of symptoms based on occupation in patients of COVID-19 with probable Omicron variants, (n=71).

Symptoms	Occupation, f (%)							
	Entrepreneur	Employee	Farmers	Civil servant	Housewife	Student	Retiree	Unemployed
Fever	7 (38.9)	5 (33.3)	3 (50.0)	0 (0.0)	2 (28.6)	2 (66.7)	1 (25.0)	7 (41.2)
Shortness of breath	8 (44.4)	6 (40.0)	5 (83.3)	1 (100)	6 (85.7)	1 (33.3)	3 (75.0)	6 (35.3)
Cough	9 (50.0)	6 (40.0)	4 (66.7)	0 (0.0)	5 (71.4)	2 (66.7)	2 (50.0)	11 (64.7)
Runny nose	2 (11.1)	2 (13.3)	2 (33.3)	0 (0.0)	1 (14.3)	0 (0.0)	0 (0.0)	1 (5.9)
Sore throat	1 (5.6)	2 (13.3)	1 (16.7)	0 (0.0)	1 (14.3)	0 (0.0)	0 (0.0)	1 (5.9)
Fatigue	3 (16.7)	3 (20.0)	0 (0.0)	1 (100)	4 (57.1)	1 (33.3)	1 (25.0)	2 (11.8)
Diarrhea	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)
Anosmia/ ageusia	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.9)
Nausea and vomit	0 (0.0)	1 (6.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.9)
Headache	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.9)
Total	18 (100)	15 (100)	6 (100)	1 (100)	7 (100.0)	3 (100)	4 (100)	17 (100)

DISCUSSION

The mean age of COVID-19 patients with the Omicron variant in the United States based on the CDC's weekly report in 2022 is 37 years with the highest frequency found in the 18-64 years old age group (73.2%) and only 7.7% of patients is aged 65 years or older. Most COVID-19 Omicron in the United States was female (51.9%).[6] A study in California in 2022 showed slightly different characteristics. It was reported that most Omicron patients were aged 20-29 years old (21.1%) and were female (56.7%).[7] Another study in Denmark in 2021 showed different sex characteristics where most of the Omicron patients were male (55%).[8] Most of the COVID-19 patients with the Omicron variant in this study were aged more than 65 years old (30.4%) and male (50.6%). This consistent with the study in Denmark but in contrast with the studies conducted in United States and California which had a predominance of female patients. Male is considered more prone to the COVID-19 infection than female because the female patients had estrogen hormone that can inhibit ACE-2 activity, thereby reducing binding

to SARS-CoV-2. This causes women to be less infected with COVID-19 than men.[9]

COVID-19 can cause a variety of clinical symptoms ranging from asymptomatic, mild, moderate, severe, to critical. Based on studies in China, most of the common symptoms in COVID-19 patients are fever (88.7%), cough (67.8%), fatigue (38.1%), phlegm (33.4%), shortness of breath (18.6%), sore throat (13.9%), and headache (13.6%). These symptoms have also been differentiated based on the current COVID-19 variant. Several studies have shown that the Omicron variant shows milder clinical symptoms with a lower viral load than other variants, especially the Delta variant. A study by Young et al also explained that the most prominent symptoms of the Omicron variant were symptoms of upper respiratory tract infections, including sore throat.[4]

Based on the weekly CDC report, the most common clinical symptoms found in the COVID-19 patients with the Omicron variant were cough (89%). Other reported symptoms were fatigue (65%), runny nose (59%), fever (38%), nausea/vomiting (22%), shortness of breath (16%), diarrhea (11%), and loss of smell or taste (8%).[6] Moreover, another study in the UK showed that the clinical symptoms of the Omicron variant of COVID-19 were runny nose (76.5%), headache (74.7%), sore throat (70.5%), cough (49.8%), and hoarse voice (42.6%).[10] A study conducted in Korea showed that the clinical characteristics of patients with confirmed COVID-19 variants of Omicron were fever (20%), headache (15%), cough (12.5%), sputum production (12.5%), runny nose (10%), muscle/joint pain (5%), weakness (2.5%), and loss of smell or taste (2.5%).[11]

Our study showed that most patients with probable COVID-19 of Omicron variants were symptomatic with the most common symptom being cough. Other symptoms reported in our study were shortness of breath, fever, fatigue, runny nose, sore throat, nausea and vomiting, diarrhea, headache, anosmia, and ageusia. These findings were consistent with those previous studies from CDC, the UK, and Korea which showed that patients with COVID-19 of Omicron variants had various symptoms. A study by Menni et al stated that the SARS-CoV-2 could infect various organs other than the respiratory system. The transmission of the Omicron variants is reported to be more rapid, but it had milder symptoms. Moreover, the study also reported that the Omicron variant replicated faster than other COVID-19 variants, but not significantly in the lung parenchyma.[10] This suggests that most of the patients with positive SGTF results in this study had lower viral loads, and it is possible that all of these samples belonged to the Omicron variant of COVID-19.

The most common symptoms varied between different age groups. The patients with ages more than 65 years old were the most symptomatic. In the late adolescent age group (17-25 years old), most of them showed symptoms of fever (33.3%) and cough (33.3%). Only 1 person (16.7%) showed symptoms of a runny nose, sore throat, and fatigue. In the age group of 26-35 years, most showed cold symptoms (44.4%). In the 36-45-year age group, most of them showed symptoms of cough (80%). In the 46-55-year age group, most of them showed symptoms of shortness of breath. In the 56-65-year age group, most showed symptoms of shortness of breath (66.7%). Meanwhile, in the age group more than 65 years, most of them showed symptoms of cough (68%). In all age groups, only the elderly showed symptoms of diarrhea, anosmia, nausea/vomiting, and headache (4%). The elderly age group (more than 65 years) in this study had the most varied symptoms compared to other age groups. Although the clinical manifestations of the Omicron variant were reported to be milder than the delta variant, the elderly are still at higher risk of experiencing various clinical symptoms due to their lower immunity response compared to other age groups. Moreover, the elderly group usually had comorbid diseases, such as diabetes, hypertension, heart failure, and chronic obstructive pulmonary disease, that may cause a lower immune system and more various clinical symptoms during COVID-19 infection.[12]

Based on the sex distribution, male patients were more symptomatic than female patients. Most male patients had shortness of breath (61.5%) and only 2.6% of male patients had symptoms of runny nose, diarrhea, anosmia, and headache. Meanwhile, most of the female patients had a cough (53.1%) and no female patients had symptoms of diarrhea, anosmia, headache nausea, and vomit.

This study also classifies the clinical manifestations based on the occupation of the patient. The patients who worked as an entrepreneur had the most symptoms than other occupation groups. The most common symptoms found in the entrepreneur group were cough (50%) and the least symptoms found were sore throat (5.6%). This may occur because they were usually worked in a closed room with poor airflow, thereby the risk of COVID-19 transmission is higher in this population. Meanwhile, another study that was conducted in six countries in Asia (Hongkong, Singapore, Taiwan, Thailand, Vietnam, and Japan) showed that taxi drivers, tour guides, and servers were had more symptoms and a higher risk of COVID-19 infection due to the fact that they are considered to have higher contact with tourists than other workers.[13]

The limitation of this study is the limited number samples of patients with probable variant omicron. This research is only limited to describe the research variables. Further research is needed with a larger sample size to analyze and find the relationship between variables.

CONCLUSION

In conclusion, the patients with COVID-19 of probable Omicron variant had various clinical manifestations, including cough, shortness of breath, fever, sore throat, runny nose, and fatigue. Most clinical manifestations of patients with COVID-19 of probable Omicron variant in Sanglah hospital from January to February 2022 were

found in patients aged more than 65 years old, male patients, and patients who work as an entrepreneur.

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