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CHARACTERISTICS OF DIZZINESS MANIFESTATION IN 2019 CORONAVIRUS DISEASE PATIENTS AT HAJI ADAM MALIK GENERAL HOSPITAL MEDAN

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Abstract

Introduction: Since first appearing in December 2019, Coronavirus Disease 2019 (COVID-19) has now become a pandemic and a global emergency. The typical manifestation of COVID-19 is fever accompanied by coughing and shortness of breath. In some patients, neurological manifestations associated with COVID-19 were found, among which the most common was dizziness. Several mechanisms, either directly or indirectly, underlie this. This study aims to determine the frequency distribution of dizziness and describe its characteristics in COVID-19 patients.

Method: This study is a retrospective descriptive study of a population of COVID-19 patients at Haji Adam Malik General Hospital (RSUP HAM) Medan for the period March to August 2020. The variables assessed were the frequency distribution and percentage of dizziness, as well as age and sex.

Result: A total of 193 COVID-19 patients, 24 (12.4%) experienced *dizziness* manifestations with the most age characteristics <50 years as many as 17 subjects (70.8%), most of them were female as many as 14 subjects (58.3%), most were Batak ethnic as many as 9 subjects (37.5%) with the most job status was civil servants as many as 9 subjects (37.5 %).

Conclusion: In COVID-19 patients, 12.4% of the manifestations of *dizziness* were found with the most characteristics being aged <50 years (70.8%) with the female gender (58.3%).

Introduction

Since the first cases of pneumonia caused by the corona virus emerged in December 2019 in Wuhan, this has caused serious problems and caused a worldwide pandemic. In March 2020, there were 95,333 confirmed cases of COVID-19 and 3,282 deaths due to COVID-19 globally.[1] WHO declared COVID-19 as a global emergency in the health sector.[2]

The most common symptoms found in COVID-19 are fever, cough, sore throat, headache, fatigue, muscle aches and shortness of breath.[3] In the case of COVID-19 in Wuhan, it was reported that out of 214 treated patients, 78 of them complained of various neurological manifestations. The most common neurological clinical manifestations were dizziness (16.8%), headache (13.1%), taste disturbances (5.6%) and smell disorders (5.1%).[1] Romero-Shancez et al (2020)) reported that out of 841 patients confirmed positive for COVID-19, approximately 57.4% of patients experienced neurological symptoms. Starting from nonspecific neurological symptoms (headache and *dizziness*), neuropsychiatric symptoms (insomnia, depression, anxiety and psychosis), central nervous system symptoms (seizures, strokes), peripheral nervous system symptoms (neuropathy), and myopathy.[4]

A study mentions several mechanisms underlying the neurological clinical manifestations in fittingien with SARS-CoV-2 infection, which is due to pulmonary disorders and systemic diseases resulting in hyperinflammation, systemic multi-organ failure and increased coagulation factors, direct viral invasion of the central nervous system and *post-infectious immune-mediated complications.*[5] Viruses can invade the system central nerve via the olfactory nerve, trigeminal nerve and *neuronal retrograde transport.*[6] The purpose of this research is to determine the frequency distribution of dizziness and describe its characteristics in COVID-19 patients.

Method

This research is a descriptive study with a retrospective approach where the data is obtained from the medical records of COVID-19 patients who were treated at Haji Adam Malik General Hospital (RSHAM) Medan from March 2020 to August 2020. The research sample was taken using the formula for descriptive research with a minimum of 89 samples. Data in the form of frequency, percentage and characteristics are presented in tabular form.

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Results

Table 1. Description of the Characteristics of Research Subjects

Respondent characteristics	Average	COVID-19		n (193)	Percentage (%)
		PCR (+)	PCR (-)		
Age (years)					
• 18-40 years		50 (49.0%)	48 (52.7%)	98	50.8%
• > 40-63 years	40 (18 - 84)	45 (44.1%)	32 (35.2%)	77	39.9%
• > 63-86 years	years	7 (6.9%)	11 (12.1%)	18	9.3%
Gender					
• Male		40 (39.2%)	46 (50.5%)	86	44.6%
• Women		62 (60.8%)	45 (49.5%)	107	55.4%
Tribe					
• Aceh		4 (3.9%)	1 (1.1%)	5	2.6%
• Bataknese		41 (40.2%)	48 (52.7%)	89	46.1%
• Karonese		13 (12.7%)	12 (13.2%)	25	13.0%
• Nias		1 (1.0%)	1 (1.1%)	2	1.0%
• Minang		1 (1.0%)	0 (0%)	1	0.5%
• Malay		25 (24.5%)	18 (19.8%)	43	22.3%
• Javanese		17 (16.7%)	10 (11.0%)	27	14.0%
• Chinese		1 (1.0%)	1 (1.1%)	2	1.0%
Profession					
• Civil servant		43 (42.2%)	12 (13.2%)	55	28.5%
• Housewives		18 (17.6%)	18 (19.8%)	36	18.7%
• Entrepreneur		31 (30.4%)	32 (35.2%)	63	32.6%
• Doctor		5 (4.9%)	1 (1.1%)	6	3.1%
• Nurse		2 (2.0%)	0 (0%)	2	1.0%
• Student		2 (2.0%)	19 (20.9%)	21	10.9%
• Farmer		1 (1.0%)	6 (6.6%)	7	3.6%
• Retirees		0 (0%)	3 (3.3%)	3	1.6%

Based on table 1 of all COVID-19 research subjects (positive PCR and negative PCR), totaling 193 samples, it was found that the age characteristics had a median value of around 40 (18-84) years with the largest age range at 18-40 years, namely 98 subjects (50.8%) followed by age >40-63 years as many as 77 subjects (39.9%) and aged >63-68 years as many as 18 subjects (9.3%). Most of the COVID-19 subjects were female, namely as many as 107 subjects (55.4%) followed by male as many as 86 subjects (44.6%). The most ethnic group was Bataknese with 89 subjects (46.1%) followed by Malays with 43 subjects (22.3%), Javanese 27 subjects (14.0%), Karonese 25 subjects (13.0%), Aceh 5 subjects (2,6%), Nias and Tionghoa 2 subjects each (1.0%) and at least 1 subject (0.5%) of the Minang ethnicity. The most employment status is self-employed, namely 63 subjects (32.6%) followed by PNS 55 subjects (28.5%), housewives (IRT) 36 subjects (18.7%), students 21 subjects (10.9%), farmers 7 subjects (3.6%), Doctors 6 subjects (3.1%), retirees 3 subjects (1.6%) and Nurses 2 subjects (1.0%).

Table 2 Frequency Distribution of Dizziness Manifestations on COVID-19 patients

	COVID-19	
	N	%

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Dizziness

• Yes	24	12.4%
• Not	169	87.6%
Total	193	100%

Table 3 Characteristics COVID-19 patients with Manifestation of Dizziness

Characteristics	COVID-19 with Dizziness	
	N	%
Age (years)		
• <50 years	17	70.8%
• ≥ 50 years	7	29.2%
Gender		
• Male	10	41.7%
• Women	14	58.3%
Tribe		
• Aceh	1	4.1%
• Bataknese	9	37.5%
• Karonese	6	25.0%
• Nias	0	0%
• Minang	1	4.1%
• Malay	5	20.8%
• Javanese	2	8.3%
• Chinese	0	0%
Profession		
• Civil servant	9	37.5%
• Housewives	5	20.8%
• entrepreneur	7	29.1%
• Doctor	1	4.1%
• Nurse	0	0%
• Student	1	4.1%
• Farmer	0	0%
• Retirees	1	4.1%
Total	24	100%

Based on table 2, 24 subjects (12.4%) of dizziness were found in COVID-19 patients. COVID-19 patients with dizziness manifestations had the largest age range <50 years as many as 17 subjects (70.8%) and ≥50 years as many as 7 subjects (29.2%). Most of the subjects with dizziness were female, namely 14 subjects (58.3%) and 10 subjects (41.7%). The largest ethnic group is the Batak tribe with 9 subjects (37.5%) followed by the Karo ethnic group with 6 subjects (25.0), 5 subjects with Malay ethnicity (20.8%), Javanese 2 subjects (8.3%), Aceh and Minang people respectively 1 subject (4.1%) each. The most occupational statuses were civil servants with 9 subjects (37.5%) followed by self-employed 7 subjects (29.1%), housewives (IRT) 5 subjects (20.8%), doctors, students and retirees respectively. 1 subject (4.1%). The characteristics of COVID-19 patients with dizziness manifestations can be seen in table 3.

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Discussion

The characteristics of the mean age of COVID-19 patients in this study are relevant to the study of Kim et al (2020) where the average age of patients infected with COVID-19 in Korea was 40 years with a range of 20-73 years.[7] This is also in line with the study of Guan et al. (2020) where the average age of patients infected with COVID-19 is 47 years, but the proportion of men is higher than women, namely 58.1% vs. 41.9%.[8] A retrospective study by Chen et al (2020) in Wuhan stated that male patients more than women, namely 67 cases out of a total of 99 cases of COVID-19.[9] There is a lot of research evidence that there are more men than women with COVID-19. This is thought to be due to differences in the immunological system related to gender and smoking habits that are more common in men. Women have a lower susceptibility to viral infections than men. The X chromosome and sex hormones in women are said to play a role in the immune response in the pathogenesis of infection.[10]

Currently the manifestations of COVID-19 are not only typical manifestations of fever and airway disorders, neurological manifestations can also be one of the suspicions towards COVID-19. Dizziness as one of the most common neurological manifestations can also be considered to guide the diagnosis of COVID-19. In this study, 12.4% of the manifestations of dizziness were found in COVID-19 sufferers. This is supported by the study of Mao et al (2020) where dizziness was found in 36 patients (16.8%).[1] This is also confirmed by a case report reported by Sia (2020), where a 78-year-old male patient presented with complaints of dizziness that he experienced suddenly while walking. The patient did not complain about the typical symptoms (fever and respiratory disorders) leading to COVID-19 and from the examination there were no signs of an acute stroke. When a nasopharyngeal swab was examined for SARS-CoV-2, a positive result was found and the patient was advised to isolate independently.[11]

Currently, neurological clinical manifestations are very common in patients with COVID-19 with various manifestations at different levels of COVID-19 severity. So that to diagnose COVID-19, clinicians do not have to focus only on the typical manifestations that attack the airways.[12]

Conclusion

In COVID-19 patients, 12.4% of the manifestation of dizziness were found with the most characteristics being aged <50 years (70.8%) with the female gender (58.3%).

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