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Etiology Covid-19 mortality in Jakarta hospital in the first Covid-19 outbreak in Indonesia.

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Abstract

The cause of death for Covid-19 patients is still controversial, some say that the age of children under five and the elderly has a high risk of death, some report a high risk of co-morbid mortality, such as hypertension, diabetes mellitus, asthma, pneumonia. Until now, there is no definite cure for the corona virus disease 19, while transmission from person to person through droplets makes it very easily transmitted. The morbidity rate is high, and also the mortality rate is around 7%. The aim of the study was to prove the etiology of the death of Covid-19 patients at Jakarta Hospital. Research Method: Applied research method with case control design. Samples of 41 patients died and control of 41 live Covid-19 patients. Sampling for patients who died from March to June 2020 a total of 41 people and 41 living Covid-19 patients were taken by random sampling, data collection was using the Eijkman Institute standard questionnaire. Frequency distribution analysis, chi square and multiple logistic regression. Result: The descriptive results of male gender are 56.1%, minimum age 0.5 years, maximum 92 years, and average 54 years. Young people 0.5-59 years, 63.4%, and 60-92 years 36.6%. Religion of Islam 68.3%, Non-Muslim 31.7%. Clinical symptoms of fever 22%, no fever 78%; shortness of breath 64.6%, pain 8.5%, cough 43.9%, lethargy 20.7%, headache 13.4%, diarrhea 12.2%, nausea 24.4%, pneumonia 74.4%, sore throat 2.4%, cold 1.2%, large stomach 1.2%, swollen legs 1.2%, oxygen saturation was up normal 38.46%. Co morbidity: Hypertension 35.4%, Diabetes Mellitus 23.2%, HD/CKD 12.2%. X-ray almost of them pneumonia (98.8%). PCR laboratory positive 34.1%, Rapid Anti Body reactive test 25.6. Whole blood test: Hb 4.9% up normal, up normal erythrocytes 42.7%., Hematocrit up normal 42.7%, up normal thrombocytes 28%, up normal leukocytes 54.9%, up normal lymphocytes 74.4%, up normal CRP 35.4%, GDS up normal 7.3%, up normal SGOT 45.1%, up normal SGPT 45.1%. Urea up normal 43.9%, creatinine up normal 56.5%, sodium up normal 59.8%, potassium up normal 58.5%, calcium up normal 63.4%, chloride up normal 53.7%. Medical Care: ICU 18.2%; ventilator 23.2%, IVFD 52.4%, Oxygen 32.9%, Diet 4.9%. TB drugs 6.1%, Azithromycin 3.7%. Asering 2.4%, OMZ 11%, Menden 11%, Cefrocidine 41.5%, Lasix 11%, Aspilet 3.7%, Milos 46.3%, Coagulant 3.7%, Dopamine 3.7%, Alloclamide 1.2%, Hazania 1.2%, Tamiflu 1.2%, Lefloxine 2.4%, Oseltamivir 26.8%. Hedonic 4.9%, Paracetamol 2.4%, Kalmix 18.3% Amlodipine 14.6% Carnefit 8.5% Renovit 2.4%, Vit C 25.6% Vit E 18.3%, Vit D 1.2%, Vit A 1.2%, Vit B Complex 1.2%, Zinc 7.3%, Vit K 7.3%, Curcuma 8.5%. Significant factors associated with death: pneumonia, cough, hypertension, O2 saturation. Hb, erythrocyte, Vit A, milos and IVFD. The end of the multiple logistic regression model only pneumonia and IVFD were significant. Detail final research for pneumonia p value 0.001, Odd Ratio 33.904, 95% CI 3,965-299,906; IVFD p value 0.001 with OR 6.654, 95% CI 2.151-20.580 were contributed 50.5% (R2) while the remaining factors are not examined. Conclusion pneumonia was influenced cause of death Covid-19.

Keywords: Covid-19 death, Pneumonia, IVFD.

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Introduction

Covid-19 patients are turning to hospital care system and destroy the world economy [1]. However, some people appear to be more likely to become infected and die than others. Research shown the majority of people who die were older (>age 70) and 60%-71% of those who were African-Americans and other ethnic minorities appear to have a 3 times risk of dying fold [2].

This ethnic group has a higher risk for associated morbidity risk factors such as metabolic disease and heart disease which in turn significantly increases the Covid-19 mortality rate. This may also be linked to pollution being a major risk factor for death (as it increases the risk of heart and lung disease) [3]. However, smokers were shown to have a reduced risk of infection, but a worse clinical picture when infected because of the devastating effect of anosmia, ataxia, and in some cases,

convulsions suggest that Covid-19 can affect the central nervous system, possibly entry through the nasal cavity [4].

In the world, the number of positive corona patients was 3.66 million people, in Indonesia on May 5, 2020, the number of positive cases of Covid-19 in 34 provinces have more than 12 thousand patients. The numbers of positive cases of corona in Indonesia reached 12,071 patients. The total number of positive corona cases was calculated after the addition of new patients in the last 24 hours, until 12.00 WIB, May 11, 2020, the number of positive cases of Covid-19 was 14,625 cases, and 991 died (CFR 6.7%). The latest data from the Task Force also shown 10, 393 positive Covid-19 patients in Indonesia were currently undergoing treatment and isolation.

This figure was equivalent to 74.6% of the total positive cases in the country. Patients recovered 2,881 cases. Suspect Covid-19 amount 249,105 cases, and 31,994 cases. Data in DKI Jakarta, the number of positive cases of Covid-19 was 5,276 cases, 441 died, 812 cases recovered. West Java Province positive cases 1,493 cases, 95 died 213 recovered [5]. At Hasan Sadikin Hospital in Bandung the number of positive cases was 72, 24 died, 10 recovered, 46 PDP patients (4 May 2020 Information from Hasan Sadikin Hospital, Bandung) [6]. Until today, referring to the data from the Task Force, the population infected with the corona virus in Indonesia is dominated by three age groups, namely patients aged 30-49 years (39.6%), 50-69 years (34%) and 10-29 years (19.2%).

Covid-19 patients who died after being positive for corona, most were aged 50-69 years (58.4%) or more than half of the mortality rate, aged 30-49 years (19.5% and 70 years and over 18%. Some of the patients who died were also recorded as having comorbidities: hypertension, diabetes, lung disease, heart disease, respiratory problems, kidney disease, cancer, tuberculosis and others.) such as hypertension, diabetes, heart disease, lung disease, respiratory problems, kidney disease, cancer, tuberculosis and others. At present the cause of death were not known with certainty, and the chosen drug does not yet exist, therefore it was still necessary to do research on the causes of severity and death due to corona virus 19 [7].

Problem

The etiology cause of death for Covid-19 patients is still controversial, some say that the age of children under five and the elderly has a high risk of death, some report a high risk of co-morbid mortality, such as hypertension, diabetes mellitus, asthma, pneumonia. Until now, there is no definite cure for the corona virus disease 19, while transmission from person to person through droplets makes it very easily transmitted. The morbidity rate is high, and also the mortality rate is around 7%.

Aim

The aim of the study was to prove the etiology of the death of Covid-19 patients at Jakarta Hospital.

Method Research

Applied research method with case control design. Samples of 41 patients died and control of 41 live Covid-19 patients, Sampling for patients who died from March to June 2020 a total of 41 people and 41 living Covid-19 patients were taken by random sampling, data collection was using the Eijkman Institute standard questionnaire. Frequency distribution analysis, chi square and multiple logistic regression. Ethical Clearance approved.

Result

The number of Covid-19 cases were taken 41 death and control 41 survived. The descriptive results of characteristic minimum age 0.5 year, maximum 92 years old we divided into two categories were report first group 0.5-59 years (63.4%) and 60-92 years 36.6%. Male gender was reported 46 cases (56.1%), Religion of Moslem 56 cases (68.3%), Non-Moslem 26 cases (31.7%). The Clinical symptoms fever 18 cases (22%), no fever 64 cases (78%); shortness of breath 53 cases (64.6%), pain 7 cases (8.5%), cough 36 cases (43.9%), lethargy 17 cases (20.7%), headache 11 cases (13.4%), diarrhea 10 cases (12.2%), nausea 20 cases (24.4%), clinical pneumonia 61 cases (74.4%), sore throat 2 cases (2.4%), cold 1 case (1.2%), large stomach 1 case (1.2%), swollen legs 1 case (1.2%).

Check oxygen saturation <95% amount 32 cases (38.46%). Co morbidity was reported hypertension 29 cases (35.4%), Diabetes Mellitus 19 cases (23.2%), and HD/CKD 10 cases (12.2%). X ray examination almost of them was pneumonia 81 cases (98.8%). PCR positive 28 cases (34.1%), rapid anti body reactive test 21 cases (25.6%).

Whole blood count HB 4 cases (4.9%) up normal, up normal erythrocytes 35 cases (42.7%), Hematocrit up normal 35 cases (42.7%), up normal thrombocytes 23 cases (28%), up normal leukocytes 45 cases (54.9%), up normal lymphocytes 61 cases (74.4%), up normal CRP 29 cases (35.4%), GDS up normal 6 cases (7.3%), up normal SGOT 37 cases (45.1%), up normal SGPT 37 cases (45.1%). Ureum up normal 36 case (43.9%), creatinine up normal 46 cases (56.5%), sodium up normal 49 cases (59.8%), potassium up normal 48 cases (58.5%), calcium up normal 52 cases (63.4%), chloride up normal 44 cases (53.7%). ICU care 15 cases (18.2%); ventilator 19 cases (23.2%), IVFD 43 cases (52.4%), Oxygen 27 cases (32.9%). Diet 4 cases (4.9%). Treatment TB medicine 5 cases (6.1%), Azithromycin 3 cases (3.7%). Asering 2 cases (2.4%), OMZ 9 cases (11%), Menden 9 cases (11%), Cefrocidine 34 cases (41.5%), Lasix 9 cases (11%), Aspilet 3 cases (3.7%), Milos 38 cases (46.3%), Coagulant 3 cases (3.7%), Dopamine 3 cases (3.7%), Alloclamide 1 case (1.2%), Hazania 1 case (1.2%), Tamiflu 1 case (1.2%,) Lefloxine 2 cases (2.4%), Oseltamivir 22 cases (26.8%), Hedonic 4 cases (4.9%), Paracetamol 2 cases (2.4%), Kalmix 15 cases (18.3%), Amlodipine 12 cases (14.6%), Carnefit 7 cases (8.5%) Renovit 2 cases (2.4%), Vit C 21 cases (25.6%), Vit E 15 cases (18.3%), Vit D 1 case (1.2%), Vit A 1 case (1.2%), Vit B Complex 1 case (1.2%), Zinc 6 cases (7.3%), Vit K 6 cases (7.3%), Curcuma 7 cases (8.5%).

Association between Patients Status and factors characteristic, Rontgen, laboratory examination whole blood, electrolyte, ang therapy.

No	Variable	Status		P value	OR	95% CI
		Survive	Death			Lower Upper
1	Pneumonia					
	No Pneumonia	20 (48.8%)	1 (2.4%)	0	38.1	4.775303 .914
	Pneumonia	21 (51.2%)	40 (97.6%)			
	Cough					
2	No Cough	28 (68.3%)	18 (43.9%)	0.026	2.752	1.1176.7 81
	Cough	13 (31.7%)	23 (56.1%)			
3	Hypertension					
	No Hypertension (120/80 mmHg)	31 (75.6%)	22 (53.7%)	0.038	2.677	1.0456.8 58
	Hypertension (>120/80 mmHg)	10 (24.4%)	19 (46.3%)			
4	Hb					
	Normal (M14-18 g/dl, F12-16 g/dl)	41 (100%)	37 (90.2%)	0.04	0.474	0.376 0.599
	Up normal (<M14-18 g/dl, F12-16 g/dl)	0 (0%)	4 (9.8%)			
5	Erythrocyte					
	Normal (M4.3-5.6; F3.9-5.1)	19 (46.3%)	28 (68.3%)	0.044	0.401	0.163 0.986
	Up normal (<M4.3-5.6;F3.9-5.1)	22 (53.7%)	13 (31.7%)			
6	Saturation O2					
	Normal (95%-100%)	29 (70.7%)	9 (22%)	0	8.593	3.162 23.351
	Up normal (<95%)	12 (29.3%)	32 (78%)			
7	Milos					
	No Milos	32(78%)	12 (29.7%)	0	8.593	3.162 23.351
	Treatment Milos	9 (22%)	29 (70.7%)			
8	IVFD					
	No IVFD	29 (70.7%)	10 (24.4%)	0	7.492	2.81119. 964
	Give IVFD	12 (29.7%)	31 (75.6%)			

Table 1. Association between patients status and factors characteristic, Rontgen, laboratory examination whole blood, electrolyte, and therapy.

Base on Table 1 for all variables only 8 variables have significant with status patient out from hospital as follows: Pneumonia, Cough, Hypertension, Hemoglobin, Erythrocyte, Saturation O2, Milos, and IVFD.

NO	Variable	P value	OR	95%CI	R2	R
				Lower Upper		
1	Pneumonia					
	No Pneumonia	0.009	23.362	2.229 - 244.908	37.50%	
	Pneumonia					
2	IVFD	0.004	6.025	1.796-20. 214	26.70%	
	No IVFD					
	Give IVFD					
3	Cough					
	No Cough	0.19	2.305	0.660-8.0 46	7.9% Confounding	
	Cough					
4	Erythrocyte					
	Normal (M4.3-5.6; F3.9-5.1)	0.14	0.403	0.120-1.3 47	6.50%	
	Up normal (<M4.3-5.6; F3.9-5.1)				Confounding	
5	Milos					

	No Milos	0.141	2.565	1.796-20.214	29.5% confounding	
	Treatment Milos					

Table 2. Result of analysis multivariate 5 variables included in the model multiple regression such as Pneumonia, IVFD, Cough, Erythrocyte, and Milos.

Base on table 2 the Final model for multiple logistic regression only two variables significant pneumonia and IVFD, despite Cough, Erythrocyte up normal and Milos treatment p Value >0.05 were not discarded for the model because OR value before and after discarded has changed >10%. Those variables were confounding factors. The five factors have contributed 57.8% to patient's death.

NO	Variable	P Value	OR	95%CI	R^2	R
				Lower Upper		
1	Pneumonia					
	No Pneumonia	0.001	33.904	3.965 - 289.906	37.50%	
	Pneumonia					
2	IVFD	0.001	6..654	2.151--- 20.580	26.70%	
	No IVFD					
	Give IVFD					

Table 3. The final model Pneumonia, IVFD to correlate with Covid-19 death.

Source: University Respati Indonesia and Army Hospital Center DKI Jakarta Indonesia.

Base on Table 3 the final Model without Confounding factors, pneumonia and IVFD have contributed 50.5%.

Discussion

Base one case-control study, 41 death of Covid-19 cases, and 41 survived as a control. The Covid-19 almost of then pneumonia and 40 (97.6%) died with Pneumonia. Pneumonia has role of death 37% (R2) in RSPAD, Jakarta Hospital. The risk Pneumonia death was shown 24 times compare with have not Pneumonia and significant. This study similar compare with study in Teaching Hospital NHS Trust 138 (92%) patients had pulmonary infiltrate on chest radiography and 146 (97%) required oxygen therapy [8].

Wuhan Pulmonary Hospital (Wuhan City, Hubei Province, China) between 25 December 2019 and 7 February 2020. Univariate and multivariate logistic regression was performed to investigate the relationship between each variable and the risk of death of Covid-19 pneumonia patients. In total, 179 patients with Covid-19 pneumonia (97 male and 82 female) were included in the present prospective study, of which 21 died [9]. All result research Acute Respiratory Failure (ARF) and sepsis were the main causes of death, severe pneumonia and ARF also cause of death this research [10].

The characteristic patients minimum age 0.5 year, maximum 92 years old we divided into two categories were report first group 0.5-59 years (63.4%) and 60-92 years 36.6%, despite was not correlation between deaths. Compare with other study in Wuhan more than half of the patients who died were older than 60 years (80.5%), and the median age was 72.5 years, in this study age more than 60 years death amount 16 (39%) cases. Sex 23 (56.1%) cases were male, Wuhan most of the patients who died were male (65.9%). Other study characteristics of 77 Covid-19 deaths by KaigeWang, Zhixin Qiu, Jiasheng Liu, Tao Fan, Chunrong Liu, PanwenTian, Ye Wang, Zhong Ni, Shumin Zhang, Jianfei Luo, Analysis of the clinical, Dan Liu & Weimin Li The COVID-19 outbreak was a public health emergency. Data were limited on the clinical characteristics and causes of death [10].

A retrospective analysis of COVID-19 deaths was performed for patients' clinical this characteristic, laboratory results, and causes of death. In total, 56 patients (72.7%) of the decedents (male-female ratio 51:26, mean age 71 ± 13, mean survival time 17.4 ± 8.4 days) had comorbidities. Proportion of young- and middle-aged deaths was higher than elderly deaths for males. While elderly decedents were more prone to myocardial injury and elevated CRP [3]. CRP and blood sedimentation rate was increased and cluster of differentiation CD4+ and CD8+ cells were decreased significantly in patients with hypertension. The majority of COVID-19 decedents were male, especially elderly people with comorbidities. The main causes of death are Acute Renal Failure and sepsis. Most female decedents have cough and diabetes. Myocardial injury is common in elderly decedents. Patients with hypertension are prone to an increased inflammatory index, tissue hypoxia and cellular immune injury. The results of the study of Guan et al. (2020) showed that the average age of COVID-19 patients who were admitted to the ICU, underwent invasive mechanical ventilation, and who died was 47 years [11]. Multivariable regression showing an increase in hospital deaths due to COVID-19 is associated with older age [12].

According toIsrafil, Pipit Festi Wiliyanarti & Pius Selasa/ Unnes Journal of Public Health, The Table shows that by October 2020 COVID-19 had become the third leading cause of death for persons aged 45 through 84 years and the second leading cause of death for those aged 85 years or older [13]. The results of research Liu et al. (2020) found that the main risk of death was related to old age [10]. Adults 45 years or older were more likely to die from COVID-19 during those months than from chronic lower respiratory disease, transport accidents (eg. motor vehicle fatalities), drug overdoses, suicide, or homicide. In contrast, for individuals younger than age 45 years, other causes of death, such as drug overdoses, suicide, transport accidents, cancer, and homicide exceeded those from COVID-19. Especially for older adults, the threat from COVID-19 may be even greater, for 3 reasons. First, the

Table presents the aggregate 8-month mortality rate for COVID-19, not the current mortality rate, which has been increasing rapidly. Between November 1, 2020, and December 13, 2020, the 7-day moving average for daily.

The risk of death is known to be experienced by many elderly patients. Some of the results of the study were found to indicate that the risk of death in COVID-19 patients was higher in the majority of those aged ≥47. Increasing age causes humans to experience a decline in various bodily organs or degenerative processes. Decreased immune system can be the cause of susceptible elderly people infected with various microorganisms including coronavirus that causes COVID-19. Changes in the anatomy and physiology of respiratory organs; Lung elasticity and lung capacity put the elderly at risk of experiencing respiratory failure during an infection.

Wu, C. et al. found that old age is a risk factor for developing COVID-19 patients experiencing ARDS (Acute Respiratory Syndrome) [14]. This condition is at risk of causing death in the elderly if not treated quickly and appropriately. Old age is a risk factor for death in COVID-19 patients is also supported by various research results, namely Wang et al. found that the average age of COVID-19 patients who died was 75 years with a range of 48-89 years of age [11]. The results of the study of Wu JT, et al. found those aged over 59 years had a risk of 5.1 times more likely to die from COVID-19 after experiencing symptoms [14]. Rong-Hui, et al. in total, 179 patients with COVID-19 pneumonia (97 male and 82 female) were included in the present prospective study, of whom 21 died [9]. Univariate and multivariate logistic regression analysis revealed that age ≥65 years (OR 3.765, 95% CI 1.201-11.803; p=0.023).

The patients treated in ICU 10 (24.4%) cases, were used ventilator 12 (29.3%) cases, have given oxygen 10 patients (24.4%), and those three variables were not significant to death, while in Wuhan All patients were local residents of Wuhan, and a large proportion of them were diagnosed with severe illness when admitted. Due to the overwhelming of our system, a total of 14 patients (17.1%) were treated in the ICU, 83% of deaths never received Critical Care Support, only 40% had mechanical ventilation support despite 100% needing oxygen and the leading cause of death being pulmonary.

Intravenous Fluid Drip (IVFD) was significant to cause of death, IVFD has given to Covid-19 patients despite have not standard formula to treatment of Covid-19 patients were given IVFD depend the condition patients such as: almost of them have given NaCl 3% for 24 our-3 days and Na CL 9% 4-9 days, Ringer Lactatesome days, any patient was given adrenalin 4 amp while CPR, Amino fluid 500 cc/24 ours; other patient was given Amynofucyl, omeprazole, Lefloxacine, Lasix, traxenamate acid; KAEN 3 B +KCL 10 mg/our, Lefloxacine 3 × 1 g, Onda setron 3 × 3 mg, Lystatin 3 × 200.000 IU Sanmol (antipyretic) 3 × 330 mg if need it, Meropenem 3×1 gram; other Meropenem 3 × 1 g, Azithromycin 1 × 500 mg for 5 days, cenevit 1 × 1 Amp, OMZ 1 × 40 mg, Isoprinosine 4 × 2 , Condarm 600/24, milos, mo, RL; Nacl 3% 40 cc/our and follow up 7 days 200 cc/our, RL 20 tpm during 3 days, 500 cc/ours. Albumin 20 cc/our in 3 days, 40 cc/our during 8 days, asering, albumin 3 × 1 sack for 18 days, chloroquine 2 × 100 mg, flu consd, Lefloxacine; Nacl 500 cc/24 ours RL 20 tpm/4 days Kobioenpeti 1400 cc, Amminofluid 1000 concd , Chloroquine, Tamiflu, Isoprinosine, Acythromycine, Tycecillin, Levonax, Meropex, Fluconac, Acyclovir; Vascon 1,8 cc/2 ouyrs, Dobutamine 4.8 cc, Meropenem, Nacl, RL, Lefloxacine; Vascon, o…../our, Dobutamine. Lefloxacine, Meropenem, Nacl 100 cc, Asering 40 cc/our; NaCl 3%/24 ours. NaCl 0.9% for 7 days, Amino fluid 3% for 2 days RL 20 Tpm for 13 days, Albumin 3 × 2 cap for 19 days, Wida Kaen during 8 days, Amino fluid 2 days; Asering, Meropenem, Isoprinosine; Nacl 1 × 500 CC for 2 days, RL 40; only RL 20 tpm during 2 days. At present Azithromycin is still using to treat as Antibiotic 1×1 during 5 days, and to viral treatment is better Esprinol during 5 days and CDR as a Vitamin because all vitamin included D Vitamine in this chloroquine has stopped to Covid-19.

In this study co morbidity hypertension 29 cases (35.4%) from 82 Covid-19, and death 19 (46,3%) cases from 41 death Covid-19 correlation analysis was significant risk of hypertension death almost three times compare with patients were not hypertension. Diabetes Mellitus 19 (23.2%), and death 13 (31.7%) from 41 Covid-19 HD/CKD 10 cases (12.2%) and 4 cases (9,8%) were death from 41 death, in this study there was not reported cancer case, cerebrovascular patients, different in study in Wuhan the bulk of the patients who died had comorbidities (76.8%), including hypertension (56.1%), heart disease (20.7%), diabetes (18.3%), cerebrovascular disease (12.2%), and cancer (7.3%). Covid-19 cases were older death (85%) in this study with same number of sample 82 cases result hypertension smaller than Bi-cheng research was found 36.6% (60 years-92 years old) [15].

Whole blood count in this study Hb 4 cases (4.9%) up normal, up normal erythrocytes 35 cases (42.7%), Hematocrit up normal 35 cases (42.7%), up normal thrombocytes 23 cases (28%), up normal leukocytes 45 cases (54.9%), up normal lymphocytes 61 cases (74.4%) similar with result Kaige Wang et al Lymphocyte was decreased significant and common laboratory results because Covid-19 was spoiled T Lymphocyte cell, up normal CRP 29 cases (35.4%), similar with Kaige Wang et all result there was Increased in C-reactive protein (CRP). Blood Sugar up normal 6 cases (7.3%), up normal SGOT 37 cases (45.1%), up normal SGPT 37 cases (45.1%) similar from Wuhan research lymphopenia (89.2%), thrombocytopenia (24.3%) were usually observed [10,14].

Most patients had a high neutrophil-to-lymphocyte ratio of >5 (94.5%), high systemic immune-inflammation index of >500 (89.2%), and increased C-reactive protein 100% in this study 35.4%. The median time from initial symptoms to death was 15 days (IQR 11-20) in this study median time 8 days (IQR 11-14 days). Older males with comorbidities are more likely to develop severe disease and even die from SARS-CoV-2 infection. Respiratory failure is the main cause of COVID-19, but the virus itself and cytokine release syndrome-mediated damage to other organs, including cardiac, renal, hepatic, and hemorrhagic damage, should be taken seriously as well (PLOS

ONE) [15]. This was evidenced by the results of the study of Guan et al. who found that lymphocytopenia was present in 83.2% of cases of COVID-19 patients who entered ICU care room to get intensive care [12]. Research Deng et al. found that COVID-19 patients who died had decreased White Blood Cells (WBC) and lymphocytes [16]. Research form Du et al. also found that the risk of death occurred in COVID-19 patients with a decrease in CD3+CD8+T cells ≤ 75. The immunity of the patient is very important in healing COVID-19 disease [11]. An improved immune system will facilitate the development of antidote antibody feedback to suppress the corona virus infection that causes COVID-19 [16]. Number of higher CD3 and CD4 T-cells in COVID-19 patients who have good endurance can protect patients from the dangers of complications from Acute Respiratory Distress Syndrome (ARDS). A gradual and gradual increase in lymphocyte response may be needed for effective immunity against SARS-CoV-2 infection [14]. Proportion Erythrocyte in this study 37.1% from 41 death and significant despite the multiple regression Logistic as confounding factor compare study Rong-hui Du et al. was not put Erythrocyte Variable [9]. A lot of kind medicines put in this study but only milos has significant related with death was bulk (70.7%) of people death, others studies have not taken milos medicine also intravenous fluid drip.

The results of research Zhou, F. et al. found that risk factors for death occur in COVID-19 patients with comorbidities such as hypertension, diabetes mellitus, and coronary heart disease [12]. Patients with comorbidities of heart disease, hypertension, or diabetes, who are treated, are at higher risk for severe COVID-19 infection [16]. Death cases are found in patients with comorbid cardiovascular and cerebrovascular diseases [9]. Cardiovascular diseases such as hypertension are diseases where systolic and diastolic blood pressure rises more than normal. Hypertension will result in impaired oxygen perfusion to all tissues of the body's organs. The danger of hypertension is the occurrence of ischemia of heart tissue (coronary heart disease) and rupture of cerebral blood vessels this study hypertension was significant and risk of death three times compare have not hypertension despite in multiple regression Logistic out of the model [17].

Conclusion

Etiology mortality of Covid-19 in Jakarta Hospital that was reported in this study pneumonia diagnosed and IVFD treatment; Cough clinical symptom. Erythrocyte, and Milos's medicine as confounding factors. Fives factors were contributed cause of death 57.8%, and two factors were such as Pneumonia and IVFD have contributed 50.5% cause of death.

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