

Evaluating COVID-19 Treatment Among Infected COVID-19 Patients at a Private Hospital in North Jakarta in 2021

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Keywords: COVID-19, COVID-19 Treatment, Evaluation.

Abstract: Coronavirus Disease 2019 (COVID-19) is a newly discovered infectious respiratory disease caused by severe acute respiratory syndrome, coronavirus 2 (SARS CoV-2). This study purpose evaluation of handling on the treatment of COVID-19 patients at a private hospital in North Jakarta. This study an observational method with a sample of 109 people selected using purposive sampling. The instrument of this study used patient medical record data. The result of this study was from 109 patients, 58.45% of them w male with 78.90% without comorbidities in the study. The treatment were given antiviral (oseltamivir, favipiravir, remdesivir), antibiotics (azithromycin, levofloxacin), symptomatic drugs (mucolytics/expectorants, fever, pain, etc.), comorbidity drugs (such as DM drugs, hypertension drugs, and other comorbidities drugs), and therapeutic additives such as heparin. Most of those patient received oseltamivir and azitromycin for COVID-19 treatment at the private hospital in north Jakarta.

1 INTRODUCTION

The coronavirus disease 2019 (COVID-19) is a major health concern today. COVID-19 was caused by the SARS-CoV-2 virus. An outbreak of viral pneumonia of unknown etiology was found introduced in Wuhan, China on December 12, 2019 (Ji et al, 2020).

Indonesia has announced a case of COVID-19 to be precise in March 2020 (WHO,2020). The data on March 31, 2020, showed that there were 1,528 confirmed cases and 136 deaths ((Ministry of Health, 2021).

Infection occurs when particles containing the virus exhaled by an infected person, either as respiratory droplets or aerosols, enter the mouth, nose, or eyes of another person who is in close contact (Zhai et al., 2020)

Symptoms of coronavirus disease often vary, but most people experience fever, cough, difficulty breathing, fatigue, and loss of smell and taste. In severe cases of renal failure, high fever, organ failure, dyspnea, and hypoxia, are observed (Lata et al., 2021).

No specific treatment for coronavirus infection has been prescribed to date, except for careful supportive care. Management of the source of infection, minimizing personal protective procedures,

risk of transmission, and early identification, isolation, and supportive care for infected patients are the solutions to this disease. There is no adequate antibacterial agent (Rahmatillah & Isnaini, 2021).

Based on the references above, an exploration about the treatment given among COVID-19 patients was needed to be conducted.

2 METHODS

This study used observational methods. Using retrospective cohort studies, by collecting secondary data on patient medical records in 2021. The sample used was 109 people who were COVID-19 patients at A Private Hospital in North Jakarta, which was selected using Purposive sampling in accordance with existing inclusion criteria. Data collection using tables created in excel. Inclusion Criteria:

- a. Confirmed positive for COVID-19 based on Swab or Antigen.
- b. Patients over 18 years of age.
- c. Completed medical records.
- d. COVID-19- positive patients with and without comorbidities.

3 RESULT AND DISCUSSION

Based on research that has been carried out at a Private Hospital in North Jakarta, COVID-19 among patients hospitalized during the 2021 period who met the inclusion and exclusion criteria, was 109 patients. Medical records with complete data based on patient characteristics including gender, age, weight, comorbid diseases, and patient treatment therapy.

3.1 Profile Based on Patient Characteristics

3.1.1 Gender

Table 1: Percentage of COVID-19 patients based on gender.

No	Type Sex	Amount	Percentage %
1	Man	64	58,71%
2	Woman	45	41,29%
Total		109	100%

Based on table 1, it can be seen that the number of patients diagnosed positive for COVID-19 with or without comorbid diseases among patients at a Private Hospital in North Jakarta, was 109 patients based on gender with male 64 patients with a percentage of 58.71%, while female patients were 45 patients with a percentage of 41.29% (Table 1). The research data obtained, it shows that the COVID-19 disease in Private Hospitals in North Jakarta occurs more in males.

There are more male patients than females infected with COVID-19 (Zhai et al., 2020). Found that, due to the patient's weak immune function, SARS-CoV-2 was more likely to infect older adult males with chronic comorbidities (Zhai et al., 2020).

Gender has been shown to be a risk factor for mortality in COVID-19 patients, where males die more than women. This is due to fundamental differences in the immunological systems of males and women, differences in lifestyle, and the prevalence of smoking (Wenham, et al. 2020).

Fewer males recovered than the group who died. Higher mortality rates are associated with higher chronic comorbidities in males, cardiovascular disease, hypertension, pulmonary disease, and smoking (Jean et al., 2020).

3.1.2 Age

From the results of research that has been carried out based on the age characteristics of among patient

COVID-19 patients at a Private Hospital in North Jakarta, it can be seen in table 2, as follows:

Table 2: Percentage of COVID-19 patients based on age.

No	Age	Category	Amount	Percentage %
1	17-25	Late Teen	10	9.17%
2	26-35	Early Adult	17	16.00%
3	36-45	Late Adult	28	25.69%
4	46-55	Early Elderly	26	23.85%
5	56-65	Late Elderly	16	14.67%
6	>65	seniors	12	11.00%
TOTAL			109	100%

Based on table 2, it can be seen that the number of patients diagnosed as positive for COVID-19 with or without comorbid diseases at a Private Hospital in North Jakarta was 109 patients. Based on the age characteristics of COVID-19-positive patients, most in the late adult category with ages 36-45 years as many as 28 patients with a percentage of 25.68% (Table 2).

Elderly patients have long-term health problems so they are more at risk when exposed to the virus, a person's immune system decreases when they reach old age, making it difficult to fight infection.

These results are reinforced by research, which shows data that Covid-19 mortality increases with age with a percentage of CFR of 1.3% in patients aged 50-59 years, 3.6% in patients aged 60-69 years, 8% in patients aged 70-79 years, and 14.8% in patients aged ≥ 80 years (Wiliam et al, 2021).

The percentage of COVID-19 mortality is increasing due to age increase, with the youngest patients aged 5% to the oldest at 55% ((Zhou et al, 2020).

3.1.3 Patients with or without Comorbidities

Table 3: Percentage of COVID-19 patients based on with or without comorbid

No	Disease Comorbidities	Amount	Percentage %
1	With comorbid	23	21,10%
2	Without comorbid	86	78.90 %
TOTAL		109	100

Based on table 3, it can be seen that the number of patients diagnosed as positive for COVID-19 who

underwent hospitalization at A Private Hospital in North Jakarta in 2021 as many as 109 patients based on the characteristics of patients with or without comorbidities, namely patients with comorbidities. patients with comorbidities were 23 patients with a percentage of 21.10%, and patients without comorbidities 86 patients with a percentage of 78.90% (Table 3).

The presence of comorbidities can determine the prognosis of COVID-19 patients. This is presumably because previous health conditions affect the severity of COVID-19 sufferers. Thus, the presence of comorbidities will exacerbate COVID-19 infection and can even become the pathogenesis of COVID-19 infection.

3.1.4 Patients by Type of Comorbid Disease

Table 4: Percentage of COVID-19 Patients based on the type of comorbid disease.

No	Type Disease Participant	Amount	Percentage %
1	Hypertension & DM	4	17.40%
2	DM	3	13.04 %
3	Kidney / CKD	3	13.04 %
4	Hypertension	6	26.08%
5	Bronchopneumonia	1	4.35%
6	Pulmonary TB & Anemia	1	4.35%
7	Hypertension & Thrombocytopenia	1	4.35%
8	Post Stroke & Hypertension	1	4.35%
9	Dyspepsia	1	4.35%
10	Hypertension & Kidney	2	8.69%
TOTAL		23	100%

Based on table 4, it can be seen that the number of patients diagnosed as positive for COVID-19 patients at a Private Hospital in North Jakarta in 2021 was 109 patients. Characteristics of patients based on the type of comorbidities as many as 23 patients. Patients who had the most comorbidities were hypertension as many as 6 patients with a percentage of 26.08%, and comorbid complications of hypertension & diabetes mellitus as many as 4 patients with a percentage of 17.40% (Table 4).

The most common comorbidities reported in COVID-19 patients are hypertension, cardiovascular diseases, and diabetes (Jarahzadeh et al., 2021).

Chronic heart and metabolic disease, the presence of acute inflammation, and decreased organ function (heart, kidney, liver, and hematology) experienced by patients at the beginning of treatment

can increase the risk of death due to COVID-19 infection (Yang & Yan, 2020).

Meanwhile, a UK study showed that patients with heart, kidney and lung disease, cancer, dementia, and obesity, had a higher risk of death (Docherty et al., 2020).

3.2 Therapeutic Profile of COVID-19 Patients Treatment

The data obtained were classified into descriptions of the treatment of COVID-19 patients including all drugs (whether single or combination drug use) used for the treatment of hospitalized COVID-19 patients with a total sample of 109. The use of drugs for the treatment of hospitalized suspected Covid-19 patients in private Hospitals in North Jakarta includes antibiotics, antiviral drugs, vitamins, multivitamins and supplements, symptomatic drugs to reduce symptoms, and comorbid drugs to treat comorbidities in confirmed COVID-19 patients. Then it is analyzed through numbers and percentages and presented in the form of a table.

3.2.1 The Use of Drugs as the Main Therapy for Covid-19

Table 5: Percentage of the use of drugs as the main therapy for Covid-19.

group	Type Drug	Amount use	Percentage %
Antiviral	Oseltamivir	71	43.83%
	Remdesivir	12	7.40%
	favipirafir	16	9.88%
	Isoprinosine	63	38.89%
Antibiotics	Azithromycin	83	54.25%
	Levofloxacin	62	40.52%
	Fradimicin - Gramicidin	2	1.31%
	Metronidazole	2	1.31%
	Ceftriaxone	1	0.65%
	Cefotaxime	2	1.31%
	cefadroxil	1	0.65%
Multivitamins/Supplements	Vit C	108	35.18%
	Vit D	107	34.85%
	Zink	86	28.01%
	Vit K	1	0.33%
	Mecobalamin	3	0.98%
	Folic Acid	2	0.65%

Based on table 1, it shows the use of drugs used as main therapy in COVID-19 patients among patients at a Private Hospital in, North Jakarta in 2021, including multivitamins / supplements, antivirals, and antibiotics.

Drug use therapy as the main therapy used is with antiviral drugs such as oseltamivir, isoprinosine, remdesivir, and favipiravir. In the study data, patients were given more oseltamivir antivirals as many as 71 with a presentase 3,83% (Table 1).

Oseltamivir has also been used in clinical trials in various combinations with chloroquine and favipiravir, nucleoside analogues known as broad-spectrum antiviral drug that have follow-up in male, those in the older age groups with chronic kidney disease, and those whose therapy is Oseltamivir + Chloroquine, 16 people (57.1%) recovered clinically. Four were shown EC50 61.88 M against SARS-CoV-2 and low toxicity (CC50>400 M) ((Zhai et al., 2020).

Furthermore, drug therapy as the main therapy used was Multivitamins/Supplements. In this study, the most widely used multivitamins/supplements were vitamin D, vitamin C, and zinc. The use of Vitamin C either orally or intravenously is effective in reducing the severity, reducing the risk of complications, overcoming symptoms and improving the prognosis of COVID-19 patients.

The administration of vitamin C can significantly reduce pneumonia caused by coronavirus by increasing the expression of IFR 3 (Interferon regulatory factor 3) which functions to cause an innate antiviral response, inhibit nuclear factor kappa-B (NFkB), and play an important role in immunity by regulating chemokines, cytokines, adhesion molecules, inflammatory mediators and inhibiting apoptosis (Cai et al., 2015).

In this study, vitamins were prescribed to all patients. The number of studies also shows the same pattern. Vitamins other than to restore the deficiency has a role as an antioxidant. Most studies also show the same pattern ((Lata et al., 2021)).

COVID-19 disease is characterized by pneumonia, so the use of antibiotics is needed to be able to prevent bacterial co-infection. The most widely used antibiotics in this study are levofloxacin and azithromycin. Azithromycin can strengthen the effect of hydroxychloroquine in lowering viral load in COVID-19 patients. Azithromycin, in addition to its macrolide antibacterial activity, also has antiviral and immunomodulating properties. This action makes azithromycin often an option in the management of inflammatory manifestations of coronavirus involving the lungs ((Lata et al., 2021).

3.2.2 The Use of Drugs as Symptomatic Therapy of COVID-19

Table 6: Percentage of the use of drugs as symptomatic therapy of COVID-19.

group	Type of medicine	Total Usage	Percentage %
Gastrointestinal drugs (gastric ulcers, gastritis and antiemetics)	Histamine H2 Receptor Antagonists (Ranitidine)	38	33.63%
	Proton Pump Inhibitor PPI (Omeprazole, lansoprazole)	18	15.93%
	Antacids and Antireflux (Sucralfate, strocaine, and rebamipide)	17	15.04%
	Antiemetics (ondancetron and domperidone)	40	35.40%
Mucolytic & expectorant	Ambroxol	1	1.12%
	Acetyl cysteine	70	78.65%
	Loratadine & pseudoephedrine	2	2.25%
	OBH	16	17.98%
Antidiarrhea and constipation	Attapulgit	4	30.77%
	Loperamide	5	38.46%
	Laxadine	4	30.77%
NSAID	Paracetamol	54	60.68%
	Dexamethasone	33	37.08%
	US. Mefenamate	1	1.12%
	Ketorolac	1	1.12%
Antihistamines	Betahistine	7	70%
	Flunarizine	1	10%
	CTM	2	20%

Based on table 2, it shows that the use of drugs used as symptomatic therapy in COVID-19 patients treated at a Private Hospital in North Jakarta in 2021. The administration of these drugs aims to overcome the clinical symptoms experienced by COVID-19 patients. that can worsen the situation, condition and support the success of therapy. The use of symptomatic therapy drugs is intended to reduce the symptoms felt by the patient, such as fever, cough, sore throat, nausea, diarrhea, and so on.

Based on research conducted on treatment for symptomatic therapy in COVID-19 patients at A Private Hospital in North Jakarta in accordance with the guildelines for the management of COVID-19 patients according to the Indonesian Lung Doctors Association (PDPI) and the Ministry of Health. Symptomatic therapy is given according to the

symptoms experienced by COVID-19 patients to reduce the symptoms experienced.

3.2.3 The Use of Drugs by Type of Comorbid Disease Class

Table 7: Percentage of the use of drugs by type of comorbid disease class.

group	Amount use	Percentage %
Drug Comorbid Hypertension :	33	78.58%
Amlodipine	21	
Losartan	2	
Captopril	5	
Bisoprolol	2	
Simvastatin	1	
Kandesartan	2	
Drug CKD comorbid :	1	2.38%
Furosemide		
Drug Heart : ISDN	4	9.52%
Drug Comorbid DM:	4	9.52%
Metformin	3	
Insulin Lispro	1	
TOTAL	42	100%

Based on table 3, it shows the use of comorbid disease drug classes in COVID-19 patients who are hospitalized at A Private Hospital in North Jakarta in 2021. The table above shows data on 42 patients confirmed COVID-19 patients, there are 33 patients with comorbid hypertension who use hypertension drug therapy with a percentage of 78.90%. With the most use of hypertension drugs, namely amlodipine by 50% (Table 3).

Patients with cardiac comorbidities were patients, and the drug used was ISDN with a percentage of 2.38%. Patients with the use of diuretic drug classes for patients with comorbid renal failure and heart failure with a percentage of 2.38% using furosemide. The use of comorbid DM drugs was 4 patients with a percentage of 9.52%. The most widely used drug use in COVID-19 patients with comorbid DM is metformin with a percentage of 7.15% (Table 3).

3.2.4 The Use of Drugs as Adjunctive Therapy

Table 8: Percentage of the use of drugs as adjunctive therapy.

No	group	Drug Type	Usage amount	Percentage %
1	Anticoagulants	Heparin	53	48.62%

Based on table 4, it shows the use of drugs as additional therapy for Covid-19 among patient at A Private Hospital in North Jakarta in 2021. The provision of additional therapy for Covid-19 aims to support the success of the therapy carried out. Additional therapy used for Covid-19 patients is an anticoagulant drug class, the type of drug used is heparin. Giving anticoagulants aims to prevent coagulation which can result in thrombosis and thromboembolism.

Therapeutic use of anticoagulant drugs in Covid-19 patients provides a good prognosis. Coagulation disorders, especially increased values of D-dimer and Fibrinogen-degradation product (FDP) were found in high levels in pneumonia patients due to Covid-19 who died. Based on the guidelines for the treatment of Covid-19, the provision of anticoagulants is seen based on the evaluation of the DPJP (see explanation on severe / critical degrees) (Ministry of Health, 2021).

4 CONCLUSION

The average age among those patients was 36-45 with only less than 25,69% of them had hypertension and diabetic. Most of those patients oseltamivir as an antiviral and azitromycin as an antibiotic.

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