Frail geriatric patient with covid-19 infection: a case report

B. Neni Mulyanti, Thomas Handoyo, Etisa Adi Murbawani, Lanny Indrastuti, Yosef Purwoko, Dwi Ngestiningsih, Yudo Murti, Bambang Joni, Rejeki Andajani, Kris Pranarka, Hadi Martono

ABSTRACT

Introduction: Covid 19 is a respiratory system disease caused by SARS-COV2. Geriatric patients with Covid-19 equipped with multiple comorbidities and a high vulnerability have high morbidity and mortality rates.

Case illustrations: A 75-year-old woman presents with confusion and fever. She was treated in the previous hospital for 7 days, experienced a deterioration of consciousness and had respiratory failure, thus was referred to Kariadi Hospital. She had comorbid hypertension, type 2 diabetes mellitus and grade 2 osteoarthritis genu bilateral. Bodyweight 45kg, height 150cm, BMI 20kg/m2, blood pressure 100/58 mmHg, pulse 110x/minute, Respiratory rate 28x/minute, Temperature 38.5°C, 93% oxygen saturation, Frailty Index 0.7, Katz Index G, Norton score 11/20. Leucocytes 9100, Lymphocytes 10%, Neutrophil Lymphocyte Ratio 2.2, Blood Glucose 247mg/dL, CRP 4.41mg/dL, Ferritin 5472.28, D-Dimer >20,000ug/dL, Fibrinogen 498 mg/dL, Procalcitonin 0.39, Chest X-ray showed pneumonia infiltrates with cardiomegaly. The RT-PCR swab examination showed positive SARS-Cov-2. Brain CT showed lacunar infarct and aging atrophy cerebral. The patient was admitted to intensive isolation room because of acute respiratory distress syndrome and covid coagulopathy. After clinical improvement, the next problems that must be addressed in isolation rooms are frail, confusion, cerebral syndrome, immobility and grade 1 decubitus.

Conclusion: Management of frail geriatric patients with Covid-19 has its challenges because of the high mortality rate. It requires a comprehensive and multidisciplinary approach.

Keywords: geriatric patient, frail, covid-19.

CASE REPORT

INTRODUCTION

In early December 2019, the first pneumonia cases of unknown origin were identified in Wuhan, the capital city of Hubei province. On December 31, 2019, China officially reported a cluster of pneumonia cases of unknown cause that would later be identified to be caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Patients with the illness, called coronavirus disease (COVID-19), frequently present with fever, cough, and shortness of breath within 2 to 14 days after exposure. Genetic sequencing of the virus suggests that SARS-CoV-2 is a beta coronavirus closely linked to the SARS virus.

As of June 13, 2020, there had been 7,553,182 confirmed cases of COVID-19 reported globally, and 423,349 deaths had been reported. In recognition of the widespread global transmission of COVID-19, the World Health Organization declared COVID-19 to be a pandemic on March 11, 2020.

The first case of Covid-19 in Indonesia was diagnosed on March 2, 2020, in Depok, in a person who had traveled to Malaysia and contacted a Japanese who was later found to be COVID-19 positive. Since then, 38,277 cases had been confirmed and 2,134 deaths had occurred in Indonesia, as of June 14, 2020.

While most people with COVID-19 develop only mild or uncomplicated illness, approximately 14% develop severe disease that requires hospitalization and oxygen support, and 5% require admission to an intensive care unit. In severe cases, COVID-19 can be complicated by acute respiratory distress syndrome (ARDS) and Coagulopathy.

A recent World Health Organization report found that the case fatality rate for COVID-19 patients older than 80 years in China was 21.9%, while patients of all ages with no underlying chronic conditions had a fatality rate of only 1.4%.

Mortality data emerging from Italy reveals the staggeringly high risk of this virus for older adults. 6 In Italy, where 23% of the population is over 65 years, 89% of COVID-19 deaths are over 70 years old.
Frailty is different from aging, disability, and co-morbidity although it is distinctly related to these factors. For example, although frailty prevalence increases with age, it occurs independently from chronological age. Frailty does not yet have an internationally recognized standard definition, although the general premise is that frailty may be considered to be a geriatric syndrome reflecting multi-system dysfunction and in which individuals can dynamically transition between severity states. Multiple reasons exist as to why it is so challenging to define frailty, including its complex etiology, the often independent work of frailty researchers; and the inherent difficulty in distinguishing frailty from both aging and disability. Regardless of these issues, and perhaps because of them, international groups such as the World Health Organization (WHO) and the International Association of Geriatrics and Gerontology (IAGG) are working on an internationally accepted frailty definition.10,11

Based on these problems, this case report aims to discuss Frail Geriatric patients’ clinical management with severe COVID-19 based on available evidence.

**CASE REPORT**

The patient was a 75 years old woman presented confusion and fever. She was treated in the previous hospital for 7 days, experienced a deterioration of consciousness and had respiratory failure. Then she was referred to Kariadi Hospital. The patient had comorbid hypertension, type 2 diabetes mellitus and grade 2 osteoarthritis genu bilateral. Her body weight 45 kg, height 150 cm, Body Mass Index 20 kg/m², blood pressure 100/58 mmHg, Pulse rate 110x/minute, Respiratory rate 28x/minute, Temperature 38.5°C, 93% oxygen saturation, Frailty Index 0.7, Katz Index G, Norton score 11/20, nutritional status malnourish.

Laboratory results are Leucocytes 9100, Lymphocytes 10%, Neutrophil Lymphocyte Ratio 2.2, Blood Glucose 247 mg/dL, CRP 4.41 mg/dL, Ferritin 5472.28, D-Dimer >20,000 ug/dL, Fibrinogen 498 mg/dL, Procalcitonin 0.39, Ureum 50 mg/dL, Creatinin 1.04, GFR 39.06 ml. The RT-PCR swab examination showed positive SARS-Cov-2.

Blood Gas Analysis’s initial result showed uncompensated alkalosis respiratory with pH 7.569, pCO2 33.7, pO2 57.2, FiO2 32, HCO3 28.6, BE 6.6, SO2 93.5, A-aDO2 124.3, PCCO/FiO2 178.75. Chest X-ray showed pneumonia infiltrates with cardiomegaly. Brain CT showed lacunar infarct and aging atrophy of cerebral.

**DISCUSSION**

The patient was admitted to intensive isolation room for 10 days because of Acute Respiratory Distress Syndrome (ARDS) and Covid Coagulopathy. During treatment in the intensive isolation room, the patient got Covid-19 therapy, high pressure oxygen therapy with Non rebreathing Oxygen Mask (NRM) 10 liters/minute for 3 days, and anticoagulants subcutaneous sliding scale insulin every 4 hours, antihypertensive agent, physiotherapy, Anti-decubitus mattress and adequate nutrition therapy.

For the Covid therapy the patient got Favipiravir day 1 loading dose 1600mg / 12h, and day 2 to 5 600 mg/12h, Antibiotic Levofloxacin 750 mg/24 h for 7 days, Vitamin C 1000mg/8h and Vitamin B 1tab/8h and also steroid. We didn’t give Chloroquin because of the age. One of the side effects of Chloroquine is prolonged QT wave in Electrocardiography. We suggested enteral and parenteral nutrition, because in critical illness happens very often mesenteric ischemia.12,13

In the acute phase, the physiotherapy program must keep her energy effectively, so the intervention is proper body positioning, especially positioning every 2 hours, gentle chest physiotherapy and passive ROM exercise.14 It has its own challenges, because it was difficult for the medical therapist to use safety clothes and instruct communication, especially the patient in confusion state. Our innovation used images or video.15

After clinical improvement, the next problems that must be addressed in general room are frail, immobility and grade 1 decubitus in the sacrum and right leg.

**Figure 1.** Serial Chest X-Ray showed worsening (1-3) and improving after treatment (4-5).
FUNDING
The author did not receive any third-party funding or support.

ACKNOWLEDGMENT
The author is very grateful to doctors and nurses for their treatment, input and assistance on this case. And also to lectures for suggestion on this manuscript.

ETHICAL CONSIDERATION
Patient or legal guardian had received signed written informed consent regarding publication of the medical data in journal article as a case report.

AUTHOR CONTRIBUTION
All author had contributed equally on article as a case report.

REFERENCES