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Optimizing COVID-19 Therapy: Analysis of Prescription Profiles in Non-Comorbid Inpatients to Enhance Treatment Strategies and Clinical Outcomes

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ABSTRACT

This study explores the clinical characteristics, treatment patterns, and outcomes of COVID-19 inpatients without comorbidities, aiming to contribute valuable insights to the management of the disease. Through meticulous data collection from medical records of 468 confirmed COVID-19 patients admitted to Gambiran Regional General Hospital between April and June 2020, 36 patients meeting inclusion criteria were identified. The research findings reveal a higher incidence of COVID-19 among males and a prevalent age group of 31-40 years. Notably, elderly individuals and those with underlying health conditions face a greater risk of severe outcomes, underscoring the importance of tailored interventions for vulnerable populations. The study highlights a diverse treatment approach, with a significant proportion of patients receiving supplements to bolster immune function. Antiviral medications like Favipiravir are also utilized to inhibit viral replication, although definitive treatment for COVID-19 remains elusive. Antibiotics play a crucial role in preventing bacterial respiratory infections, while supportive medications help alleviate symptoms commonly associated with the disease. Importantly, the findings emphasize the multifaceted nature of COVID-19 management and the need for targeted interventions to optimize patient outcomes. By elucidating the therapeutic landscape and clinical course of COVID-19 inpatients without comorbidities, this study contributes to the growing body of knowledge surrounding the disease. These insights can inform clinical decision-making, resource allocation, and public health strategies aimed at combating the ongoing pandemic.

Keywords:
COVID-19, Inpatients, Comorbidities, Treatment Patterns, Outcomes.

INTRODUCTION

China reported cases of mysterious pneumonia with an unknown cause on December 31, 2019. Within three days, the number of patients with such cases reached 44, continuously increasing to thousands until now (WHO, 2020). The World Health Organization (WHO) named this virus as the 2019 novel coronavirus (2019-nCoV), which

was later renamed Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) by the Coronaviridae Study Group (CSG) of the International Committee on Taxonomy of Viruses (Prasetyawan, F., 2021). Officially, COVID-19 became the name of the disease caused by this virus. COVID-19 is a new type of virus discovered in 2019 and had not been previously identified to infect humans. COVID-19 is a contagious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). WHO declared the Coronavirus a pandemic on March 11, 2020, due to its rapid spread (Prasetyawan,F., 2023) SARS-CoV-2 originated from a local seafood market in Wuhan, likely originating from bats, as it shares 96% genomic similarity with bat coronaviruses and its infection became difficult to control or prevent because Chinese health authorities said there was a possibility of human-to-human transmission even though asymptomatic (Satria et al., 2020).

Initial epidemiological data indicate that 66% of patients are related to a single market isolated from patients studied with results showing seafood or live market infection in Wuhan, Hubei Province, China (Huang et al., 2020).

In Indonesia, the first case was announced on March 2, 2020, and as of June 5, 2021, confirmed positive cases of COVID-19 numbered 1,850,206, with 1,701,784 recoveries, and 51,449 deaths (Ministry of Health RI, 2021). The spread of the coronavirus can be transmitted by individuals with COVID-19. This disease can spread through droplets from the nose or mouth when coughing or sneezing (Restyana, A., 2022). The droplets then fall on objects around them. When others touch an object contaminated with these droplets and then touch their eyes, nose, or mouth (the facial triangle), they can become infected with COVID-19 (Ministry of Health RI, 2020).

Clinical symptoms of COVID-19 infection can range from mild to severe. The main clinical symptoms that appear are fever (temperature > 38°C), cough, and difficulty breathing. In some patients, symptoms may be mild or even absent with fever (Wang et al., 2020, WHO, 2020). Common symptoms at the onset of infection include fatigue, cough, and fever, while other possible symptoms include lymphopenia, coughing up blood, headache, sputum production, and diarrhea (Hamid et al., 2020). Based on the above description, the researchers intend to conduct a study on the prescription therapy profile of COVID-19 inpatients at Gambiran Regional General Hospital in Kediri City with the criteria for data collection being COVID-19 inpatients without comorbidities.

METHODS

Data collection in this study was conducted using a non-experimental approach, specifically through sampling data sources from the medical records of COVID-19 patients. Out of 468 medical record samples of confirmed COVID-19 patients from April to June 2020, 36 medical records of confirmed COVID-19 patients were found to meet the inclusion criteria, while the rest were excluded.

The inclusion criteria for this study were inpatient COVID-19 patients without comorbidities with complete medical record files, while the exclusion criteria included inpatient COVID-19 patients with comorbidities and incomplete medical record files. The process of data collection involved meticulous extraction of information from the medical records of patients admitted to the hospital during the specified period. These medical records were carefully reviewed to ensure that only those meeting the predefined criteria were included in the study.

The medical records of COVID-19 patients were selected based on specific parameters outlined in the inclusion and exclusion criteria. Inclusion criteria focused on selecting patients who were confirmed COVID-19 cases and were hospitalized without any underlying comorbidities. Additionally, the medical records had to be complete with all necessary information. On the other hand, exclusion criteria were applied to filter out patients with comorbidities and those whose medical records were incomplete. Patients with comorbidities were excluded to ensure the homogeneity of the sample population and to focus solely on the effects of COVID-19 on otherwise healthy individuals.

The meticulous selection process ensured that the data collected for the study were accurate and representative of the target population. Only medical records meeting the strict criteria were included, minimizing the risk of bias and ensuring the reliability of the findings. After applying the inclusion and exclusion criteria, a total of 36 medical records were deemed suitable for the study. These records contained comprehensive information about the patients' demographics, medical history, laboratory results, treatment regimens, and clinical outcomes.

The selected medical records provided valuable insights into the management and outcomes of COVID-19 cases in hospitalized patients without comorbidities. By focusing on this specific subset of patients, the study aimed to shed light on the clinical characteristics and treatment responses of otherwise healthy individuals infected with the virus. Analyzing the data extracted from the medical records allowed researchers to identify patterns, trends, and associations relevant to the study objectives. Statistical analyses were performed to elucidate the relationships between various variables and outcomes, providing valuable insights for clinical practice and future research.

The findings of the study are expected to contribute to the existing body of knowledge on COVID-19 and inform clinical decision-making regarding the management of patients without comorbidities. By understanding the unique characteristics and treatment responses of this population, healthcare providers can optimize care delivery and improve patient outcomes.

RESULTS AND DISCUSSION

The research findings demonstrate that 36 individuals diagnosed with COVID-19 without comorbidities comprised 21 males (58.33%) and 15 females (41.67%). The data suggests a higher occurrence of COVID-19 without comorbidities among male patients at Gambiran Regional General Hospital. In terms of age distribution, the most prevalent age group was between 31-40 years, accounting for 15 individuals, or 41.67%. The risk of COVID-19 infection is not limited by age, with all age groups susceptible to the virus. However, advancing age correlates with an increased risk of COVID-19 infection due to declining immune function. According to the Ministry of Health (2020), the elderly and individuals with pre-existing conditions face a greater risk of contracting COVID-19 due to compromised immune systems. Factors such as weakened immune responses in the elderly and those with comorbidities elevate the risk of COVID-19 transmission and worsen outcomes, leading to fatalities. According to Fatmah (2006), older individuals experience a decline in cell-mediated immunity (CMI), with immune function gradually decreasing with age, including a slower immune response to infectious diseases, rendering them more susceptible to diseases, including COVID-19. COVID-19 incidence is higher among the elderly due to reduced immunoglobulin production.

Table 1. Clinical Symptoms Observed In COVID-19 Inpatients Without Comorbidities

Number	Clinical Symptoms	Number of Patients	Percentage
1	Mild	27	75%
2	Moderate	9	25%
	Total	36	100%

The percentage of COVID-19 inpatients without comorbidities, categorized by clinical symptoms, reveals that 27 individuals (75%) exhibit mild symptoms, while 9 individuals (25%) experience moderate symptoms. The research findings suggest a predominance of mild clinical symptoms among COVID-19 inpatients without comorbidities. This study identified only two clinical symptom categories, as patients with severe or critical symptoms typically present comorbidities.

Table 2. Prescribed Medications For COVID-19 Inpatients Without Comorbidities

Medication Category	Percentage
Antibiotics	9.74%
Antivirals	7.15%
Analgesics/antipyretics	2.60%
Antiseptics	1.95%
Antiemetics	3.90%
Antitussives	0.65%
Antispasmodics	0.65%
Antihistamines	1.30%
Antifibrinolytics	0.65%
Antidiarrheals	1.30%
NSAIDs	1.30%
Electrolytes	4.55%
Immunosuppressants	0.65%
Corticosteroids	0.65%
Mucolytics	1.95%
Mucolytics/antidotes	3.25%
PPIs	5.19%
Supplements	49.35%
Total	100%

Prescribed medications for COVID-19 inpatients without comorbidities are categorized as follows: antibiotics 9.74%, antivirals 7.15%, analgesics and antipyretics 2.60%, antiseptics 1.95%, antiemetics 3.90%, antitussives 0.65%, antispasmodics 0.65%, antihistamines 1.30%, antifibrinolytics 0.65%, antidiarrheals 1.30%, NSAIDs 1.30%, electrolytes 4.55%, immunosuppressants 0.65%, corticosteroids 0.65%, mucolytics 1.95%, mucolytics and antidotes 3.25%, PPIs 5.19%, and supplements 49.35%. The data indicates that 49.35% of medications used by COVID-19 patients are supplements primarily aimed at enhancing patients' immune systems to expedite recovery. According to the Indonesian Medical Association's COVID-19 management guidelines, the use of Vitamin D and Vitamin C as adjunct therapy is believed to provide protection against COVID-19 and prevent disease progression.

Antiviral medications such as Favipiravir are thought to inhibit viral activity and transmission in the respiratory tract. As there is currently no specific treatment for COVID-

19, therapy primarily focuses on alleviating symptoms experienced by confirmed COVID-19 patients. Azithromycin, a macrolide antibiotic, is administered to prevent severe respiratory infections in pneumonia patients. Antibiotics are prescribed to COVID-19 patients when there is a risk of bacterial infection. These drugs combat bacterial infections by either killing or inhibiting bacterial growth in the body. Antibiotics target specific structures in bacteria, preventing their reproduction (Indonesian Pulmonologist Association, 2020).

Antipyretics or analgesics are provided as supportive therapy for COVID-19 patients with temperatures exceeding 38°C, as well as headaches or myalgia. Paracetamol is preferred over ibuprofen due to its superior outcomes. Patients with mild to moderate clinical symptoms often experience nausea and vomiting, which can be alleviated with antiemetic medication. Other symptoms experienced by COVID-19 patients include diarrhea, which can be managed with antidiarrheal agents to relieve symptoms and firm up stools, along with probiotics to help ease diarrhea and maintain a healthy digestive system by reducing the growth of harmful bacteria (Indonesian Pulmonologist Association, 2020).

CONCLUSION

This study provides valuable insights into the clinical characteristics, treatment patterns, and outcomes of COVID-19 inpatients without comorbidities. The findings highlight a higher prevalence of COVID-19 among male patients and a greater susceptibility to infection among individuals aged 31-40 years. Importantly, the study underscores the increased risk of severe outcomes in elderly patients and those with underlying health conditions, emphasizing the importance of targeted interventions for these vulnerable populations. The analysis of prescribed medications reveals a diverse treatment approach, with a significant proportion of patients receiving supplements aimed at bolstering immune function. This aligns with current guidelines advocating for the use of adjunctive therapies such as Vitamin D and Vitamin C to enhance immune response and mitigate disease progression. Antiviral medications like Favipiravir are also utilized to inhibit viral replication and transmission, although definitive treatment for COVID-19 remains elusive. Antibiotics and supportive medications play crucial roles in managing symptoms and preventing complications in COVID-19 patients. Azithromycin, in particular, serves as a prophylactic measure against bacterial respiratory infections, while antipyretics, analgesics, and antiemetics help alleviate fever, pain, and nausea commonly associated with the disease. Comprehensive approach to treatment underscores the multifaceted nature of COVID-19 management and the importance of tailored interventions to optimize patient outcomes. The therapeutic landscape and clinical course of COVID-19 inpatients without comorbidities, this study contributes to the growing body of knowledge surrounding the disease. These insights can inform clinical decision-making, resource allocation, and public health strategies aimed at combating the ongoing pandemic. Moving forward, continued research is warranted to further refine treatment protocols and enhance our understanding of COVID-19 pathogenesis, ultimately improving outcomes for patients worldwide.

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