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**ORIGINAL RESEARCH REPORT**

# Clinical profile of patients with COVID-19 at Raden Mattaher General Regional Hospital Jambi

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**ABSTRACT**

**Background:** Coronavirus disease 2019 (COVID-19) is a new virus that was first reported in Wuhan, Hubei. The World Health Organization (WHO) announced that COVID-19 is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus attacks the upper respiratory tract, then spreads to the lower respiratory tract, and continues to the gastrointestinal tract. **Objectives:** This study aimed to describe COVID-19 patients' profiles at Raden Mattaher Hospital, Jambi. **Methods:** This was an observational study that took a descriptive cross-sectional approach. It intended to describe the profiles of COVID-19 patients seeking treatment at Raden Mattaher Hospital, Jambi. These data were recorded during the period of October 2021-December 2021, with a total of 30 samples obtained. **Results:** Most of the COVID-19 patients' profiles revealed they were between ages 50-59 and 70-79, male, complained of respiratory system disorders, and without comorbidity. As for vital signs, most had normal pulses, tachypnea breathing, normal oxygen saturation, and normal blood pressure. Laboratory examinations showed that most had normal ALCs, suspicious NLR, positive RT-PCR results, and negative antigen swabs. Most patients had a length of stay of 8-14 days and exited with independent isolation. **Conclusion:** COVID-19 patients at Raden Mattaher Hospital, Jambi had different characteristics, clinical results, and laboratory tests with varying results. Most results were by the proposed theory and few had results that differed from it.

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## Highlights

1. COVID-19 infections affected more elderly males than women (59-59 and 70-79 years old).
2. COVID-19 patients had a normal pulse, tachypnea, normal oxygen saturation, and normal blood pressure.

## BACKGROUND

Most of the population has been faced with new challenges on a global scale due to coronavirus disease 2019 (COVID-19), which was reported for the first time in Wuhan, Hubei, China. This virus can

penetrate the mucosal membrane, particularly the larynx and nasal mucosa, and enter the lung via the respiratory tract to the target organ (Fitriani, 2020; Susilo et al., 2020).

COVID-19 can infect everyone, but some groups are at higher risk of exposure, resulting in increased mortality risk (Fitriani, 2020). Every person who has been exposed to COVID-19 has various symptoms; those with mild cases may be asymptomatic and those with heavy cases could go into critical condition. Studies must identify populations susceptible to COVID-19 infections. This will help increase society's awareness of preventing this virus from spreading and reduce these populations' mortality rates (Fitriani, 2020).

Based on the Indonesian Ministry of Health, the COVID-19 incidence in Jambi reached 7,053 persons. A total of 64 persons (0.91%) recovered by April 20$^{th}$, 2021. However, the mortality rate reached 101 persons (1.43%), which was almost twice the recovery rate. According to Centers for Disease Control and Prevention (CDC) data, COVID-19 is more prevalent in males than females (51.4 vs. 48.6%) aged between 30-79 years old. The fewest cases were found in the population under 10 years old (1%). As for severity, 81% of cases were mild, 14% were severe, and 5% were critical. The elderly (Mueller et al., 2020; Perrotta et al., 2020) and those with congenital heart disease had a higher risk of being infected with severe cases compared to the rest of the population (Broberg et al., 2020).

## OBJECTIVE

This study was performed to review the clinical profiles of COVID-19 patients at Raden Mattaher General Regional Hospital, Jambi.

## MATERIAL AND METHOD

### Study Design

A cross-sectional study with an observational and descriptive design was performed from October until December 2021 at Raden Mattaher General Regional Hospital, Jambi to describe COVID-19 inpatients' clinical profiles.

### Data collection

The data were collected by surveying, observing, and gathering COVID-19 patients' data collection sheets. Inclusion criteria were hospitalized patients with COVID-19. The study has been approved as clinically appropriate by the Health Research Ethical Committee of the Faculty of Medicine, Universitas Jambi University on Augustus 22$^{nd}$, 2022 with approval number 2033/UN21.8/PT.01.04/2022.

### Data analysis

The data were descriptive and summarized in numbers (%) using SPSS version 21 (IBM, US).

## RESULTS

There were 30 patients with COVID-19; the subjects' characteristics are summarized in **Table 1**. It is shown that the most prevalent age ranges were 55-59 years old and 70-79 years old, otherwise known as the elderly. Based on gender, there were more males (63%) than females (37%). The main complaints were respiratory disorders (53.3%). The length of hospital stays (LOS) for the COVID-19 patients in this study lasted between 0-7 days and 8-14 days, with a mortality rate of 10% and a recovery rate of 23.3%. Most of the COVID-19 patients underwent independent isolation (66.7%).

**Table 2** summarizes COVID-19 patients' clinical profiles. There were almost as many subjects without comorbidity (53.3%) as those with comorbidity (46.7%). Those without comorbidity had a lower risk of the disease progressing and mortality than those with comorbidity. Vital signs are shown to be in the normal range. Tachypnea was the most prevalent type of breathing in this study (86.7%). Most subjects also had normal oxygen saturation (73.3%), meaning most patients were in the normal range in the $SpO_2$ category. Most subjects also had normal tension (53.3%).

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**Table 1.** Subjects' characteristics based on clinical characteristics (n=30)

| Clinical Characteristics | Frequency | Percent (%) |
|---|---|---|
| **Age (years old)** | | |
| - 0-9 | 3 | 10.0% |
| - 10-19 | 2 | 6.7% |
| - 20-29 | 3 | 10.0% |
| - 30-39 | 5 | 16.7% |
| - 40-49 | 3 | 10.0% |
| - 50-59 | 6 | 20.0% |
| - 60-69 | 1 | 3.3% |
| - 70-79 | 6 | 20.0% |
| - 80-89 | 1 | 3.3% |
| **Sex** | | |
| - Male | 19 | 63% |
| - Female | 11 | 37% |
| **Main complains** | | |
| - Respiratory disorders | 16 | 53.3% |
| - Indigestion | 4 | 13.3% |
| - Neurology disorders | 6 | 20.0% |
| - Cardiovascular disorders | 1 | 3.3% |
| - Urinary tract disorders | 3 | 10.0% |
| **Length of hospital stay** | | |
| - 0-7 days | 13 | 43,3% |
| - 8-14 days | 14 | 46,7% |
| - 15-21 days | 1 | 3,3% |
| - 22-30 days | 1 | 3,3% |
| - < 1 month | 1 | 3,3% |
| ***Outcomes*** | | |
| - Recovered | 7 | 23,3% |
| - Independent-isolation | 20 | 66,7% |
| Death | 3 | 10,0% |

**Table 2.** Subject's distribution based on clinical characteristics (n=30)

| Clinical profile | Frequency | Percent (%) |
|---|---|---|
| **Comorbidity** | | |
| - Type 2 Diabetes mellitus (T2DM) | 3 | 10% |
| - Hypertension | 3 | 10% |
| - Tuberculosis Pneumonia | 2 | 6.7% |
| *Overlapping** | | |
| - Tuberculosis and HIV | 1 | 3.3% |
| - T2DM and Chronic Kidney Disease (CKD) | 1 | 3.3% |
| - T2DM and Hypertension | 1 | 3.3% |
| - T2DM, CKD, and Hypertension | 1 | 3.3% |
| - No comorbidity | 16 | 53.3% |
| **Pulse** | | |
| - Bradycardia | 3 | 10% |
| - Normal | 18 | 60% |
| - Tachycardia | 9 | 30% |
| **Breath** | | |
| - Bradypnea | 1 | 3.3% |
| - Normal | 3 | 10% |
| - Tachypnea | 26 | 86.7% |
| **Oxygen saturation** | | |
| - Normal | 22 | 73.3% |
| - Mild hypoxia | 5 | 16.7% |
| - Moderate hypoxia | 2 | 6.7% |
| - Severe hypoxia | 1 | 3.3% |
| **Blood pressure** | | |
| - Hypotension | 3 | 10% |
| - Normal | 16 | 53.3% |
| - Pre-hypertension | 6 | 20% |
| - Hypertension stage 1 | 4 | 13.3% |
| - Hypertension stage 2 | 1 | 3.3% |

Laboratory examination results are summarized in **Table 3**, which shows that most subjects (50%) had normal absolute lymphocyte counts (ALC) due to mild infection. Meanwhile, 43.3% of the subjects were suspected to be infected with COVID-19 based on their neutrophil-to-lymphocyte ratio (NLR).

**Table 3.** Subject's distribution based on laboratory examination (n=30)

| Laboratory examination | Frequency | Percent (%) |
|---|---|---|
| **ALC** | | |
| - Normal | 15 | 50% |
| - Suspected | 6 | 20% |
| - Alert | 6 | 20% |
| - Dangerous | 3 | 10% |
| **NLR** | | |
| - Normal | 7 | 23,3% |
| - Suspected | 13 | 43,3% |
| - Alert | 3 | 10% |
| - Dangerous | 7 | 23,3% |
| **RT-PCR** | | |
| 1-times checking | 22 | 73% |
| >1-times checking | 8 | 27% |
| **Swab Antigen** | | |
| - Positive | 7 | 23% |
| - Negative | 12 | 40% |
| - No results | 11 | 37% |

## DISCUSSION

Subjects' ages in this study were in line with a study conducted by Minuljo et al. (2020), stating that COVID-19 patients varied in age. These ranged between 31-70 years old, but the highest incidence was found in the elderly (64,3%). Immune responses decrease with age, making the elderly one of the populations most susceptible to COVID-19 (Minuljo et al., 2020).

High COVID-19 prevalence in males was also found in another study, which noted that the COVID-19 mortality rate in males was 90%. It was suspected that the ACE-2 receptor, which acts as the virus's entrance, is more prevalent in males, which worsens the prognosis (Azwar et al., 2020).

The COVID-19 patients' main complaint was respiratory disorders. Another study in Jakarta found that COVID-19's main clinical symptom was coughing (93.7%) followed by fever (87.5%), which was the main respiratory disorder(Surendra et al., 2021). The CDC identified the inability to smell (anosmia) and taste (ageusia) as general COVID-19 symptoms during the first day of infection. In several children and young adults with mild symptoms, rashes appeared in the form of itchy red spots, swelling, and blistering on the toes (CDC, 2019).

COVID-19 patients' length of hospital stays (LOS) was in line with other findings, with a median of 13 days. The average LOS for COVID-19 patients in Indonesia is 7-14 days. This is based on clinical findings such as improvements in radiological and/or hematological profile, as deemed by responsible doctors (Fahmia et al., 2022; Kementerian Kesehatan RI, 2021).

This study's outcomes contrast another study, which found a lower mortality rate (5.8% of 1,233 COVID-19 patients) with 94.16% of patients recovering (Bobdey and Ray, 2020). The main contrast was that patients in independent isolation had a significantly higher recovery rate than hospitalized patients (Bobdey et al., 2021).

The independent risk factors for COVID-19 infection were hypertension (OR: 2.29; $p < 0.001$), diabetes (OR: 2.47; $p < 0.001$), chronic obstructive pulmonary disease (COPD) (OR: 5.97; $p < 0.001$), cardiovascular disease (OR: 2.93; $p < 0.001$), and cerebrovascular disease (OR: 3.89; $p = 0.002$) (Sanyaolu et al., 2020). Comorbidity also increased the risk of the disease progressing to be more severe (Sanyaolu et al., 2020). Hypertensive patients had vascular endothelium dysfunction, while T2DM patients had coagulation disorders and acute inflammation (Minuljo et al., 2020; Sanyaolu et al., 2020). While the exact mechanisms are not known, inflammatory, hormonal pathways, and social factors (such as living conditions) are postulated. For those without comorbidity, the risk of mortality was 1-5 times,

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while those with comorbidity had 3.8 times the risk of mortality (Adab et al., 2022).

The vital signs found in this study were in line with another study, in which tachypneic breathing was one of the clinical signs of COVID-19 (Wang et al., 2020). Blood pressure was also in the normal range, which showed that not all COVID-19 patients had hypertension. Blood pressure raises in line with the disease's severity (Perhimpunan Dokter Paru Indonesia, 2020).

Lymphopenia is correlated with COVID-19's severity, followed by NLR (Yufani and Rofinda, 2021). The NLR showed normal values, which was in line with another study that used NLR as a predictor of inflammation and to measure the prognosis (Toori et al., 2021).

### Strengths and Limitations

This study did not assess the patients' and their families' knowledge. All stakeholders were needed to educate them on how to prevent COVID-19 infection**.**

## CONCLUSION

Age (elderly), gender (male), and comorbidity were found to be COVID-19 risk factors and increased COVID-19 severity. Clinical manifestation of COVID-19 varied based on the inflammation stage and the laboratory's findings (ALC, NLR).

### Acknowledgment

None

### Conflict of Interest

All authors have no conflict of interest.

### Ethics Consideration

The study has been approved as clinically appropriate by the Health Research Ethical Committee Faculty of Medicine, Universitas Jambi on Augustus 22nd, 2022, with approval number 2033/UN21.8/PT.01.04/2022.

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