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Characteristic of Covid-19 Infected Patient in Lhoksumawe City, Aceh Province, Indonesia (2020- 2021)

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Abstract

Coronavirus disease (Covid-19) is an infectious disease caused by a newly discovered coronavirus. Covid-19 is the disease caused by SARS-CoV-2. The world first learned of this new virus in December 2019, following a report of a cluster of cases of 'viral pneumonia in Wuhan, the People's Republic of China. Until the middle of July 2021, the number of people infected with Covid-19 worldwide is around 189 million, about four million deaths, and 172 million recovered. This study objective was to analyze the characteristic of a covid-19 infected patient in Lhoksumawe city, Aceh province, Indonesia, on 2020-2021. This study was observational with cross sectional. The study was conducted in Lhosumawe city, one of 23 cities/districts in Aceh Province, Indonesia. The population of this study was all the people who infected covid-19 in Lhoksumawe city from 2020 to the middle of July 2021 (850 patients), and the sample is the total population and variables in this study were age group and sex. The Result showed that almost 55,5% or 472 patients were male, and 45,5% were female. In the age group variable, most patients aged 20-39 years, 46,1 % or 391 patients. Conclusion: male and people aged 20-39 were the main characteristic of Covid-19 infected patients in Lhoksumawe city, Indonesia.

Article Info

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Keywords

Covid-19, Patients, Lhoksumawe city.

Introduction

Coronavirus disease (Covid-19) is an infectious disease caused by a newly discovered coronavirus. Covid-19 is the disease caused by SARS-CoV-2. The world first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia in Wuhan, the People's Republic of China (WHO, 2021). Until the middle of July 2021, the number of people infected with Covid-19 worldwide is around 189 million, about four million deaths, and 172 million recovered (Worldmeter, 2021). From the emergence of covid-19 in Wuhan, China, the virus develops into several higher-risk transmission variants. Based on the WHO database, until the middle of July 2021, found

some variant covid-19 which initially came from one country but then developed throughout the world, namely: alpha from the United Kingdom (date of designation by WHO: December 2020), beta from South Africa (date of designation by WHO: December 2020), gamma from Brazil (date of designation by WHO: January 2021) and delta from India and date of designation by WHO: May 2021 (WHO, 2021).

Besides those variants, WHO and some organizations interest in some recent variants that rise in 2021, called variants of interest (VOI), those are Eta that arises from multiple countries, Iota from the United States, Kappa from India, and Lambda from Peru. WHO an action for a potential VOI is a comparative assessment of variant

characteristics and public health risk, review global epidemiology, and monitor track global spread (WHO, 2021).

WHO on 2020 mentions that the most common symptoms of COVID-19 are fever, dry cough, and fatigue. Other symptoms that are less common and may affect some patients are loss of taste or smell, nasal congestion, conjunctivitis (also known as red eyes), sore throat, headache, muscle or joint pain, different types of skin rash, nausea or vomiting, diarrhea and chills or dizziness. Symptoms of severe are shortness of breath, loss of appetite, confusion, persistent pain or pressure in the chest, and high temperature (above 38 °C). Other less common symptoms are irritability, confusion, reduced consciousness (sometimes associated with seizures), anxiety, depression, sleep disorders and more severe and rare neurological complications such as strokes, brain inflammation, delirium, and nerve damage (WHO, 2020).

Among those who develop symptoms, most (about 80%) recover from the disease without needing hospital treatment. About 15% become seriously ill and require oxygen and 5% become critically ill and need intensive care. Complications leading to death may include respiratory failure, acute respiratory distress syndrome (ARDS), sepsis and septic shock, thromboembolism, and/or multiorgan failure, including injury of the heart, liver or kidneys. In rare situations, children can develop a severe inflammatory syndrome a few weeks after infection (WHO, 2020).

Several conditions can cause an increased risk of COVID-19 infection in a person, including cancer, kidney diseases, chronic lung diseases (CDC, 2021), diabetes type 1 & 2 (McGurnaghan, *et al.*, 2021), hypertension, obesity, and diabetes (Baker, 2020). In addition, several conditions will aggravate a person suffering from COVID-19, including age, race/ethnicity, gender, some medical conditions, use of certain medications, poverty and crowding, certain occupations, and pregnancy (CDC, 2021)

In Indonesia, the number of Covid-19 patients from April 2020-July 2021 is around 3.3 million cases spread across all provinces in Indonesia (34 provinces), with the highest cases in DKI Jakarta Province as much as 24% of all cases. In Aceh Province, until July 2021, recorded 22,500 positive Covid-19 (Kemenkes RI, 2021), and Lhoksumawe city as one of 23 cities/districts in Aceh province has 850 patients covid-19. This study aims to

analyze the characteristics of a covid-19 infected patient in Lhoksumawe city, Aceh province, Indonesia, from 2020-2021.

Materials and Methods

Design

This study was observational with cross sectional

Study site

The study was conducted in Lhosumawe city.

Population and sample

The population of this study was all the people who infected covid-19 in Lhoksumawe city from 2020 to the middle of July 2021, and the sample is the total population.

Data collection

This study uses secondary data from the Lhoksumawe health office.

Variables

Variables in this study are age group and sex.

Data analysis

Descriptive statistics used univariate analysis

Results and Discussion

Table 1 shown the characteristics of Covid-19 infected patients by sex. Based on data received by the author, from June 2020-July 2021, there were 850 cases of Covid-19 in Lhoksumawe City, and most of the patients, namely 472 people or 55.5%, were male.

Table 2 shows the characteristics of the age group of people with Covid-19 infected in the city of Lhoksumawe. The age group was divided into six groups. The majority of Covid-19 infected patients are aged 20-39 years, namely 391 people or 46.1% of all cases.

The results of this study indicate that the male sex suffers more from Covid-19 than the female sex. The same results found in a study conducted in Wuhan City, Hubei

Province, China, showed that from December 2019-January 2020, most patients infected with Covid-19 were men, namely 234 patients or 55% (Li, *et al.*, 2020).

Different results were obtained from a meta-analysis study conducted by Pecham, *et al.*, (2020). The study showed that 3,111,714 reported global cases to demonstrate there was no difference in the proportion of males and females with confirmed Covid-19. Different results were also obtained from data in Indonesia; from April 2020 to the end of July 2021, there are around 3.2 million Covid-19 cases in Indonesia, and 51.2% are women (Covid.Indonesia, 2021).

Although in several studies it was stated that the proportion of male Covid-19 sufferers was not higher than women, based on several studies, it was found that the risk of severe disease was more for men than women.

Pecham, *et al.*, (2020) mentions that male patients have almost three times the odds of requiring intensive treatment unit (ITU) admission (OR=2.84; 95% CI=2.06, 3.92) and higher odds of death (OR=1.39; 95% CI=1.31, 1.47) compared to females. With few exceptions, the sex bias observed in Covid-19 is a worldwide phenomenon. Several other studies have shown differences in the effects of Covid-19 infection on women and men.

A study in China concluded that while men and women have the same prevalence, men with Covid-19 are more at risk for worse outcomes and death (Jin, *et al.*, 2020). Takahashi, *et al.*, (2020), in their research, concluded that there is increasing evidence that Covid-19 produces more severe symptoms and higher mortality among men than among women.

Griffith, *et al.*, (2020) stated that there are several factors that influence morbidity and mortality in men with Covid-19, including biological factors. Men and women differ in both innate and adaptive immune responses, perhaps related in part to sex-specific inflammatory responses resulting from X-chromosomal inheritance.

The X chromosome contains a high density of immune-related genes; therefore, women generally mount stronger innate and adaptive immune responses than men. This differential regulation of immune responses in men and women is contributed by sex chromosome genes and sex hormones, including estrogen, progesterone, and androgens. Sex-specific disease outcomes after viral infections are attributed to sex-dependent production of steroid hormones, different copy numbers of immune response X-linked genes, and the presence of disease susceptibility genes (Sharma, *et al.*, 2020).

In addition to sex differences in immune responses, hormones, and genes, there are also psychological, social, and behavioural components that influence COVID-19 progression. Compared with women, men tend to engage in more high-risk behaviours that generate the potential for contracting Covid-19 (Baker, 2020).

Based on age group, the highest percentage of Covid-19 patients in Lhosumawe City is in the 20-39 year age group; 391 patients or 46.1% of the total people infected with Covid-19. The results of this study are the same as the results of Covid-19 data in Indonesia. As of April 2020 - the end of July 2021, there are around 3.2 million Covid-19 cases in Indonesia, and most of them, namely 29%, occur at the age of 31-45 years (Covid.Indonesia, 2021).

In California (USA), until July 2021 shows that the incidence of Covid-19 is around 3.8 million cases and, and the majority of around 1.2 million cases or 33.7% occur in the age group of 18-34 years (California Department of Public Health, 2021). In Australia, cases have been reported across all age groups. The majority of all cases are reported in those aged 20-59 years, but the number of cases is highest in the 20-29 years age group (Australia Government, 2021). In India, population groups of 20-49 years are highly vulnerable to Covid-19 infection (Jakhmola, *et al.*, 2021).

Table.1 characteristic of Covid-19 Infected Patient in Lhoksumawe city bases on sex

Sex	Number	Percentage
a. Female	378	44.5
b. Male	472	55.5
Total	850	100.0

Table.2 Characteristic of age group Covid-19 Infected Patients inLhoksumawe City

Age group	Number	Percentage
a.0-1 years old	1	1
b. 2-10 years old	21	2.5
c.11-19 years old	55	6.5
d.20-39 years old	391	46.1
e. 40-59 years old	295	34.7
f. > 60 years old	87	10.2
Total	850	100.0

The age between 20-50 years is when someone is productive and active, with high mobilization. People with this age always feels healthy, and hard for illness then they often ignore health procedures to prevent covid-19, until infected.

Male and people aged 20-39 were the main characteristic patients Covid-19 in Lhoksumawe city, Indonesia.

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