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Malaria situation in Lampung Pesawaran during the COVID-19 pandemic

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Abstract

Background : At the time of COVID-19 was determined as a pandemic there are still many infectious diseases that have not been eliminated such as HIV / AIDS, tuberculosis, including malaria. Malaria is an infectious disease that existed long before corona virus or COVID-19 appeared in the world. malaria itself is a parasitic infectious disease plasmodium sp transmitted through the bite of a female Anophelese sp mosquito. The current incidence of malaria cases coincides with the COVID-19 pandemic, which could potentially increase or decrease the incidence of malaria cases.
Purpose: To find out the comparison of malaria cases in endemic areas before and during the COVID-19 pandemic in The Hanura Health Center of Lampung Pesawaran Regency 2019-2020..
Method: Comparative research with purposive sampling research techniques with the population of all malaria patients in Puskesmas Hanura Pesawaran Lampung Regency from September 2019 to August 2020. Analyze data using univariate and bivariate..
Results : The most cases of malaria based on the age before the COVID-19 pandemic at the age of >15 years amounted to 121 patients (72,9%) and during the COVID-19 pandemic the most at the age of >15 years amounted to 25 patients (61,0%). The most cases of malaria by gender before the COVID-19 pandemic were in 102 male patients (61,4%) and based on gender during the COVID-19 pandemic the most was in men as many as 21 patients (51,2%) . Malaria cases before the COVID-19 pandemic were highest in October 2019 at 55 patients (33,1%) and during the COVID-19 pandemic the highest in March 2020 was 14 patients (34,1%).
Conclusion: There is a significant comparison in malaria cases before and during the COVID-19 pandemic with a P value of 0.033.

Keywords: Malaria; COVID-19; Pneumonia.

INTRODUCTION

On December 31, 2019, the Wuhan health commission of China's Hubei Province reported a cluster of pneumonia cases of unknown cause and was later linked to the report of the Wuhan huanan seafood wholesale market, a wholesale market selling various kinds of animals. On January 9, 2020, the Chinese CDC reported that a new coronavirus (2019-nCoV) was detected as the virus that causes pneumonia. On February 11, 2020, WHO announced the official name of this new disease, namely as "COVID-19" (Coronavirus Disease 2019) which is listed in the International Classification of Diseases (ICD). On January 7, 2020, it was finally discovered that the cause of this disease was a new type of corona virus or what is known as the novel coronavirus (Kementerian Kesehatan Republik Indonesia, 2020).

At the time COVID-19 hit, there were still many cases of infection that were still occurring and had not

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been eliminated, such as HIV/AIDS, Tuberculosis, including malaria. Malaria is an infectious disease that has existed long before the corona virus emerged as a pandemic. Malaria is an infectious disease caused by Plasmodium sp which is transmitted by the bite of a female Anopheles sp mosquito. This parasite lives and reproduces in human red blood cells.

Naturally, malaria transmission occurs due to interactions between agents (Plasmodium sp), intermediate hosts (humans), and definitive hosts (Anopheles sp) (World Health Organization, 2010). Malaria globally has fallen from an estimated 262 million cases in 2000 to 214 million cases in 2015 (World Health Organization, 2018). Nationally, the annual parasite incidence (API) in 2009 to 2017 has decreased, in 2009 by 1.85 and in 2017 to 0.99 (Ministry of Health, 2017; Notoadmodjo, 2012).

Lampung is a malaria endemic area because there are many swamps, brackish water puddles on the seashore, and abandoned ponds that can be a breeding ground for the Anopheles mosquito, except for some areas in West Lampung Regency which are rice fields and plantations. According to the Lampung Province Annual Parasite Incident (API) figures in 2019 that the highest number of malaria cases was in Pesawaran Regency, namely 1.97 per 1000 people affected by malaria (Mahmudi & Yudhastuti, 2015).

Based on data from the Hanura Health Center in 2019, the incidence of malaria reached 652 people and in 2019 it reached 136 people. This shows that the incidence of malaria in the Hanura Health Center is still quite high, the working area of the Hanura Health Center itself consists of 10 villages namely Sukajaya Limpasing, Munca, Hurun, Cimulus, Talang Mulya, Hanura, Sidodadi, Gebang, Batu Menyan and Tanjung Agung Villages.

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RESEARCH METHOD

This study uses a comparative research technique. Comparative research is research conducted by comparing similarities and differences as phenomena to find out what factors or situations cause certain events to occur. From this study, samples were obtained from secondary data taken from 2 years, namely September 2019 to August 2020. The data obtained were taken by taking into account the inclusion criteria and exclusion criteria, the study subjects were 207 malaria patients. This study uses a purposive sampling technique, this research was conducted at the Hanura Health Center, Pesawaran Regency, Lampung 2021.

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Tabel 1. Distribution of Malaria Patients COVID-19 Pandemic (N=207)

Variable	Before (n = 166)	During (n =41)
Age (n/%)		
1-4	12/7.2	3/7.3
5-4	22/13.3	8/19.5
10-14	11/6.6	5/12.2
>15	121/72.9	25/61.0
Gender (n/%)		
Male	102/61.4	21/51.2
Female	64/38.6	20/48.8
Month (n/%)		
September/March	40/24.1	14/34.1
Oktober/April	55/33.1	3/7.3
November/May	27/16.3	6/14.6
December/June	8/4.8	4/9.8
January/July	24/14.5	7/17.1
February/August	12/7.2	7/17.1

It can be seen that malaria cases before the COVID-19 pandemic were 166 patients divided into 4 age categories. a total of 12 patients (7.2%) in patients aged 1-4 years, 22 patients (13.3%) in patients aged 5-9 years, 11 patients (6.6%) in patients aged 10-14 years, 121 patients (72.9%) in patients >15 years of age. That malaria cases during the COVID-19 pandemic were 41 patients divided into 4 age categories. A total of 3 patients (7.3%) in patients aged 1-4 years, 8 patients (19.5%) in patients who were aged 5-9 years, 5 patients (12.2%) in patients aged 10-14 years, 25 patients (61.0%) in patients aged >15 years. The majority of patients diagnosed with malaria before the COVID-19 pandemic were male. Number of samples as many as 166 patients. There were 102 patients (61.4%) were male and 64 patients (38.6%) were female. the majority of patients diagnosed with malaria during the COVID-19 pandemic were gender male. The number of samples was 41 patients and 21 patients (51.2%) were male and 20 patients (48.8%) were female.

That malaria cases before the COVID-19 pandemic were 166 patients. A total of 40 patients (24.1%) in September, 55 patients (33.1%) in October, 27patients (16.3%) in November, 8 patients (4.8%) in December, 24 patients (14.5%) in January, 12 patients (7.2%) in February. That there were 41 cases of malaria during the COVID-19 pandemic. A total of 14 patients (34.1%) in March, 3 patients (7.3%) in April, 6 patients (14.6%) in May, 4 patients (9.8%) in June, 7 patients (17.1%) in July, 7 patients (17.1%) in August.

Table 2. Comparisons of malaria cases before and during the COVID-19 pandemic

Variable	Mean ± SD	*p-value*
Before	27.67	0.033
During	6.83	

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Based on table 2 the results of the Independent sample t-test, it can be seen that the P value or absolute error is 0.033, because the P value <0.05 then Ho is rejected. If Ho is rejected, there is a significant difference in malaria cases before and during the COVID-19 pandemic.

DISCUSSION

Highest number of malaria cases before the COVID-19 pandemic was at the age of >15 years as many as 121 patients (72.9%), and malaria cases at the time of the COVID-19 pandemic. Most of the COVID-19 pandemics were those aged >15 years with 25 patients (61.0%). This is because in malaria cases in.

Puskesmas Hanura in the age group > 15 years are included in the productive age who are active outside the home until the evening so that the possibility of being exposed to vectors increases. The habit of residents being outside the house at night and also not wearing clothes is related to the incidence of malaria (Departemen Kesehatan Republik Indonesia, 2009). In accordance with research conducted, the results of malaria sufferers based on the age of 54 people of productive age (15-64 years) were 94.40% with suspected malaria and 5.60% positive for malaria (Lappra & Sudharmono, 2021; Muni, 2019).The most cases of malaria were in men as many as 102 patients (61.4%), and the most cases of malaria during the COVID-19 pandemic were in men as many as 21 patients (51.2%). In the results of this study, there were more malaria cases in men because malaria-transmitting mosquitoes were more active at night, compared to women, men went out more at night such as night watchers (Wardani & Arifah, 2016).

The distribution of the frequency of malaria cases before and during the COVID-19 pandemic. The number of malaria cases before the COVID-19 pandemic was 166 patients and the most malaria cases before the COVID-19 pandemic was 55 patients (33.1%) in October, while the malaria cases during the COVID-19 pandemic were 41 patients and the most malaria cases during the pandemic. COVID-19 in March totaled 14 patients (34.1%). So malaria cases before the COVID-19 pandemic were higher than during the COVID-19 pandemic, meaning that during the COVID-19 pandemic there was a decrease in malaria cases.

In the bivariate analysis, this study aims to determine the comparison of malaria cases before and during the COVID-19 pandemic. Based on table 7 of the results of the Independent sample t-test, it can be seen that the P value or absolute error is 0.33, because the P value <0.05 then Ho is rejected. If Ho is rejected, there is a significant difference in malaria cases before and during the COVID-19 pandemic at the Hanura Health Center, Pesawaran Regency 2019-2020, it can be seen that malaria cases before the COVID-19 pandemic were higher than during the COVID-19 pandemic.

The Pesawaran area itself is a malaria endemic area where there are many swamps, brackish water pools on the seashore, and abandoned ponds, where these places are breeding grounds for the vector Anopheles sp. According to the person in charge of malaria at the Hanura Health Center, Pesawaran Regency, the decline in malaria cases in 2020 was due to the malaria eradication work program focusing more on vector eradication. where in 2019 the activities of ciding larvae or Eradication of malaria vectors is carried out every 3 months and in 2020 it will be increased to every month (Shaqiena & Mustika, 2020). Research conducted on the Risk Factors for Malaria in the Leuser Ecosystem Area, Karo Regency, North Sumatra Province stated that there was an effect of spraying insecticides on mosquito nests with the incidence of malaria, where respondents who suffered from malaria were 4.7 times greater with houses/environments where insecticides were not sprayed against mosquito nests, rather than houses where insecticides were being sprayed. Respondents who suffer from malaria are 6.1 times more likely to find breeding places for malaria mosquitoes in their home environment than respondents who do not suffer from malaria (Tarigan, 2006; Rahardjo, 2019). According to the World Health Organization (WHO) (2011) one of the prevention of malaria is vector eradication using insecticides.

Based on research conducted, it was found that there was a decrease in malaria cases in 2001 – 2005, this decrease was due to eradication efforts carried out by spraying and distributing mosquito nets. If the

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spraying of malaria larvae is carried out continuously in their breeding environment, it will have an impact on reducing malaria cases (Rumbiak, 2006). This is in line with the decline in malaria cases in areas in Pesawaran Regency where spraying is more often done, it has decreased.

CONCLUSION

There is a significant comparison in malaria cases before and during the COVID-19 pandemic with a p-value of 0.033.

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