Clinical Investigation of Leprosy Case in Kendari City

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Abstract

Leprosy is a disease caused by Mycobacterium leprae infection that predominantly affects the skin and peripheral nerves. The long term impact of this infection including neuropathy is deformities and disability. The disease is associated with stigma, especially when deformities are present. Majority of patients exposed to Mycobacterium leprous will not develop the disease, suggesting that person immunity plays an important role in disease infection. This study aims to figure out the new case detection of leprosy patient in Kendari city at the year 2017-2019 and to find out the issues in leprosy elimination. The research was an observational study with descriptive approach. Data collection in this study is using the direct interview for the leprosy programmer from all of Public Health Centre in Kendari City and home visiting the leprosy patient. Data analyzed and presented in narrative and figure. The result showed that in 2019, all of cases (14 cases) detected in the population were adult MB type of leprosy, New Case Detection Rate 3.67/100,000 population. Prevalence rate of leprosy cases that go under treatment in Kendari city was 0.57/10,000 population. Problem in eliminating of leprosy case : Case mapping of leprosy patient was not present, so endemic status not clear; several doctors and programmer of leprosy staffs untrained, low participation and collaboration of relevant sector.

Keywords: Leprosy patient; Kendari City; new case detection.

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1. Introduction

The section headings are arranged by numbers, bold and 10 pt. Here follows further instructions for authors. Leprosy is a disease infection that affects the skin and peripheral nerves [1]. This disease caused of *Mycobacterium leprous*, an intracellular obligate bacterium [2]. Leprosy is assumed endemic in the country with rates of socio-economic development is still low[3]. *World Health Organization* (WHO) states that there are 200,000 new cases at the year 2016, 211,009 new cases at 2017 were reported from 159 countries in the world[1].

Based on data from WHO, for South East Asia Region reported 71% of all global cases: 2 countries consisted of India (120,334 cases) and Indonesia (17,017 cases) contributed 92% of the cases in this region. In Region of the Americas, Brazil reported high case levels (28,660 cases) representing 93% of all cases in this Region. Combined, Brazil, India and Indonesia accounted for 79.6% of all the new cases detected globally [4].
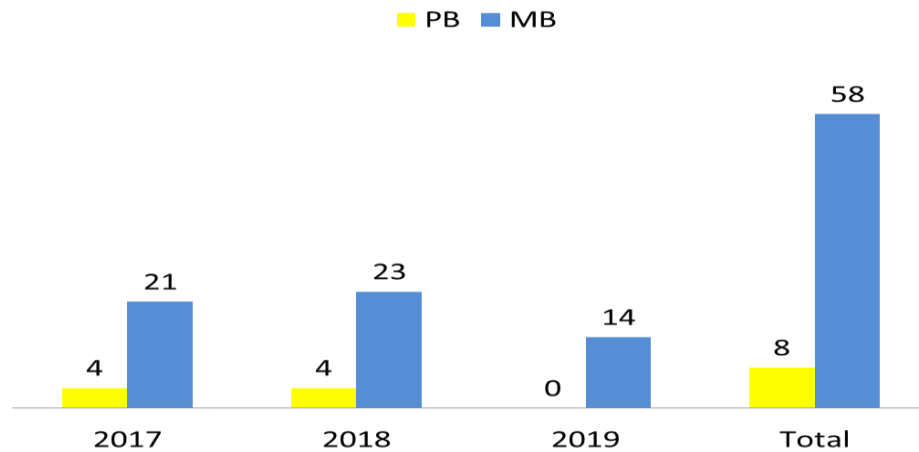
In 2017, the number of new leprosy cases in Southeast Sulawesi was 327 cases with a new case detection rate (NCDR) 12.40/ 100,000 populations [5]. It seems that efforts to avoid leprosy still require harder efforts in the next few years so that the prevalence rate of leprosy in Southeast Sulawesi especially in Kendari city can reach the national target in order to eliminate leprosy. So, this study aims to figure out the prevalence and new case detection of leprosy patient in Kendari city at the year 2017-2019 and to find out the issues in leprosy elimination in Kendari city.
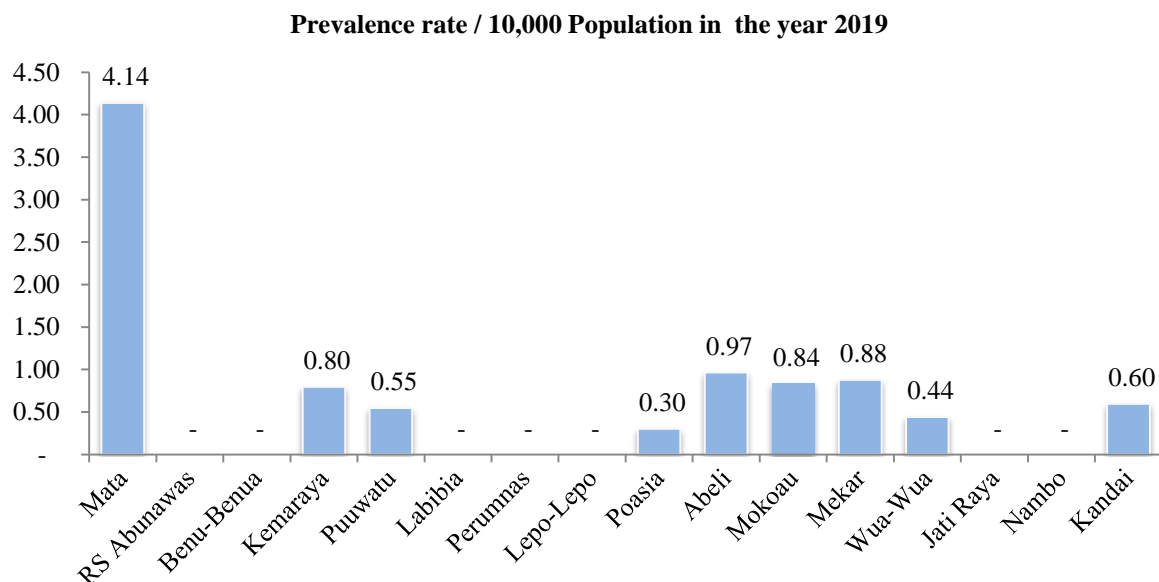
2. Materials and Method

The research was an observational study with descriptive approach. Primary data collection using direct interview to leprosy programmer from all of Public Health Centre in Kendari City and home visiting to the leprosy patient. Secondary data collected from Health office of Kendari City.

3. Results

Kendari is the capital of the Indonesian province of Southeast Sulawesi. The city lies along Kendari bay. The city has a population 381,628 peoples in the year 2019 and 29.600 Ha total area. Health office of Kendari City consisted of 15 Public Health Center (called Puskesmas) spread into all of Kendari city area. New cases of PB and MB Type of leprosy in Kendari city tend to decrease in the last three years. In the year 2017, from 25 cases of MB there were 21 of cases detection in detection, while PB cases there were 4 cases of 25 cases in detection. Whereas in the year 2018 tends to increased, but decreased in 2019 as showed at figure 1. In 2019, all of cases (14 cases) detected in the population were adult MB type of leprosy (New Case Detection Rate 3.67/100,000 population). Whereas, the patient go under treatment until the end 2019 amounts 22 patients so prevalence rate was 0.57/10,000 population. Prevalence rate of each health care provider are shown in figure 2 below.

Figure 1: New Case detection of leprosy patient in Kendari city

Figure 2: Prevalence rate/10,000 population in 2019 from each health care provider in Kendari city

Elimination of leprosy program in Kendari City is still remain several problem especially related to human resources. From field investigation in Puskesmas, several of the doctors (6 of 15 doctors = 40%) and nurse staffs (1 of 15 = 6.7 %) get untrained about early diagnosis and prevention of leprosy disease. The other hand, case mapping of leprosy patient was not present, so endemic status not clear. Although, there are 14 cases has found in 2019, majority of all patient (10 of 14 patients = 71 %) is found voluntarily when they visit to Puskesmas and the others was found actively in case finding of health staff in the field. It indicates there was low participation and collaboration of relevant sector.

4. Discussion

Leprosy is still assumed a commonly health problem in Indonesia. The factors contributing to the incidence of

leprosy are still poorly unknown. The instruments and knowledge to recognize the source, routes and mode of infection and transmission are needed [6]. For decades, it was believed that the only source of transmission of M. leprae, the main etiologic agent, was multibacillary patients not receiving treatment [7].

Nowadays, to explain leprosy transmission can be determined by a synthesis of both molecular and epidemiological data, leading to more effective control of the disease [8]. Agent – host - environment model can be used to explain numerous factors that affect the pathogenesis of leprosy disease [9] . The factors contributing to development of desease through a process known as an infection chain consisting of factors, namely: causes, the source of transmission, the way of transmission, how to enter the host, and the host[8] . Two exit routes of M. leprae from the human body often described are the skin and the nasal mucosa [10] but Araujo and his colleagues suggested that the airborne route of infection and transmission and household contacts predominantly influence to the infection risk of leprosy [11]. The other factors to be considered as the risk of leprosy are pathogenesis of germs, mode of transmission, environmental conditions, and genetic variants associated with susceptibility, immune change, and the possibility of reservoirs outside humans [12].

There are still many things that are not immediately known about leprosy, socioeconomic condition especially in developing country [13] and people living in households had a risk of leprosy [14-17]. The other hand, meteorological factors such as temperature and soil humidity can influence the dynamics of M. leprae. However, M. leprae remain viable in various environmental conditions, such us intensity of exposure to contaminated soil and water [7,12]. Although, route and mode transmission is unknown, the main challenge of the doctors and nursing staffs are to eliminate the social stigma through effective information, education, and communication and promote voluntary reporting about leprosy [13]. This condition leads to increase case finding in the field, so elimination program of leprosy can be aplicated.

5. Conclusion

From the result of observational study, the conclusion is: In 2019, all of the cases (14 cases) detected in the population were adult MB type of leprosy (New Case Detection Rate 3.67/100,000 population), the Prevalence rate of leprosy cases that go under treatment in Kendari city was 0.57/10,000 population. Case mapping of leprosy patient was not present, so endemic status not clear; Several doctors and programmer of leprosy staffs untrained, low participation and collaboration of relevant sector so the researcher recommendation to the stakeholder of health office staff of Kendari city to Plan the program of training and education to health care provider especially doctors and nursing staff Collaborating to relevant sector in eliminating leprosy disease about funding and advocating.

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