ABSTRACT

DYNAMICS OF TRANSMISSION AND DETERMINANTS OF CLINICAL DIPHTHERIA IN BANGKALAN DISTRICT

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Diphtheria is a breathing disease caused by *Corynebacterium diphtheriae*. The cases of diphtheria in Bangkalan tend to increase each year. The number of cases in 2010 was 27 cases (CFR=74%), 2011 was 35 cases (11.4%) and it significantly increases in 2012 with was 69 cases (CFR=5.8%). In 2013, there were 76 cases (CFR=5.3%) and it reached the highest case in Bangkalan after Surabaya. This study aimed to learn about the transmission dynamics and to analyze determinant factors of clinical diphtheria in Bangkalan.

This study was an analytic observational using case-control design. The population was the patients with clinical diphtheria aged above 15 years old in 2013. All cases were taken as the samples of this study with the ratio of cases and controls of 1:2. The number of cases was 36 people and the controls were 72 people. The data was analyzed using logistic regression. The dependent variable was the incidence of diphtheria, while the independent variable was the source of infection, contact, behavior, mobility and population density.

The results of this study in transmission dynamics of incidence of clinical diphtheria in Bangkalan showed that there was an epidemiological interaction between one case to another in Districts of Klapis, Modung, Galis, Tanjung Bumi and Bangkalan. The distribution patterns formed clusters. The average time for transmission was 12 days. The identification of 24 infected villages was classified and the results showed that these were 17 villages in the high risk of diphtheria, 2 villages in the intermediate stage and 5 villages in the low stage of diphtheria incidence. The risk factors for the incidence of clinical diphtheria were the source of transmission ($p=0.785$), the residential density ($p=0.686$), the contacts with infected people ($p=0.149$), the behavior of hygiene ($p=0.015; OR=4.495$) and mobility of people from one area to another ($p=0.000; OR=9.334$).

The conclusion of this study shows that factors which influence the incidence of clinical diphtheria in Bangkalan are both behavior and mobility.

Keywords: Diphtheria, Epidemiological Interaction, Mobility