

Risk Factors Associated with Dengue Fever Outbreak in Diredawa Administration City, Ethiopia, October 2015: A Case Control Study

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Abstract : Half of the world's population is at risk of Dengue Fever (DF), a highly under-recognized and underreported mosquito-borne viral disease with high prevalence in the tropical and subtropical regions. Globally, an estimated 50 to 200 million cases and 20, 000 DF deaths occur annually as per the world health organization report. In Ethiopia, the first outbreak occurred in 2013 in Diredawa administration city. Afterward, three outbreaks have been reported from the eastern part of the country. We received a report of the fifth DF outbreak for Ethiopia and the second for Diredawa city on October 4, 2015. We conducted the investigation to confirm the outbreak, identify the risk factors for the repeatedly occurrence of the disease and implement control measures. We conducted un- matched case-control study and defined a suspected DF case as any person with fever of 2-7 days and 2 or more of the following: a headache, arthralgia, myalgia, rash, or bleeding from any part of the body. Controls were residents of Diredawa city without DF symptoms. We interviewed 70 Cases and 140 controls from all health facilities in Diredawa city from October 7 to 15; 2015. Epi Info version 7.1.5.0 was used to analyze the data and multivariable logistic regression was conducted to assess risk factors for DF. Sixty-nine blood samples were collected for Laboratory confirmation. The mean age for cases was 23.7 ± 9.5 standard deviation (SD) and for controls 31.2 ± 13 SD. Close contact with DF patient (Adjusted odds ratio (AOR)=5.36, 95% confidence interval(CI): 2.75-10.44), nonuse of long-lasting insecticidal nets (AOR=2.74, 95% CI: 1.06-7.08) and availability of stagnant water in the village (AOR=3.61, 95% CI:1.31-9.93) were independent risk factors associated with higher rates of the disease. Forty-two samples were tested positive. Endemicity of DF is becoming a concern for Diredawa city after the first outbreak. Therefore, effective vector control activities need to be part of long-term preventive measures.

Keywords : dengue fever, Diredawa, outbreak, risk factors, second

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