Risk factor of plasmodium knowlesi infection in Sabah Borneo Malaysia, 2020: A population-based case-control study

ABSTRACT

Background: In the Malaysian state of Sabah, P. knowlesi notifications increased from 2% (59/2,741) of total malaria notifications in 2004 to 98% (2030/2,078) in 2017. There was a gap regarding P. knowlesi acquisition risk factors related to practice specifically in working age group. The main objective of this study was to identify the risk factors for acquiring P. knowlesi infection in Sabah among the working age group. Methods and methods: This retrospective population-based case-control study was conducted in Ranau district to assess sociodemographic, behavioural and medical history risk factors using a pretested questionnaire. The data were entered and analyzed using IBM SPSS version 23. Bivariate analysis was conducted using binary logistic regression whereas multivariate analysis was conducted using multivariable logistic regression. We set a statistical significance at p-value less than or equal to 0.05. Results: A total of 266 cases and 532 controls were included in the study. Male gender (AOR = 2.71; 95% CI: 1.63–4.50), spending overnight in forest (AOR = 1.92; 95% CI: 1.20–3.06), not using mosquito repellent (AOR = 2.49; 95% CI: 1.36–4.56) and history of previous malaria infection (AOR = 49.34; 95% CI: 39.09–78.32) were found to be independent predictors of P. knowlesi infection. Conclusions: This study showed the need to strengthen the strategies in preventing and controlling P. knowlesi infection specifically in changing the practice of spending overnight in forest and increasing the usage of personal mosquito repellent.