Epidemiological, Ecology, and Case Management of Plasmodium Knowlesi Malaria in Phang-Nga Province, Thailand

Authors : Surachart Koyadun

Abstract : Introduction: Plasmodium knowlesi (P. knowlesi) malaria is a zoonotic disease that is classified as type 5 of human malaria. Commonly found in macaques (Macaca fascicularis) and (Macaca nemestrina), P. knowlesi is capable of resulting in both uncomplicated and severe malaria in humans. Situation of P. knowlesi malaria in Phang-Nga province for the past 3 years from 2020 – 2022 revealed no case report in 2020, however, a total of 14 cases had been reported in 2021 - 2022. This research aimed to 1) study the epidemiology of P. knowlesi, 2) examine the clinical manifestations of P. knowlesi patients, 3) analyze the ecology and entomology of P. knowlesi, and 4) analyze the diagnosis and treatment of P. knowlesi. Method: This research was a retrospective descriptive study/case report. The study was conducted in 14 patients with P. knowlesi malaria between 2021 and 2022 in 4 districts of Phang-Nga Province, Thailand including Thapput, Kapong, Takuapa and Khuraburi. Results: The study subjects of P. knowlesi malaria were all males. Most of them were working age groups as farmers and worked in forest or plantation areas. All had no history of blood transfusions. Most of the patients did not use mosquito nets and had a history of camping in the forest prior to the onset of fever. An analysis of all 14 sources of infection unveiled the area is home to macaques, and that area has detected Anopheles mosquito, which is the carrier of the disease. Majority of them got sick in the dry season of Thailand (December-April). The main symptoms brought to the hospital were fever, chills, headache, body aches. Laboratory findings on the first day of diagnosis were as follows: The white blood cell count was found within the normal range. In the proportion of white blood cells, eosinophils were found to be slightly higher than normal. Slight anemia was found on early examination. The platelet count was found to be below normal in all cases. Severely low platelet count (2,000 cells/mm3) was found in severe cases with multiple complications. No patient was found dead but 85.7% of complications were found, with acute renal failure being the most common. Patients with delayed diagnosis and treatment of malaria (inaccurate diagnosis or late access to the hospital) had the highest severity and complications than those who had seen the doctor since the first 3-4 days of illness or the screening of symptoms and risk history by the malaria clinic staff at vector-borne disease control unit. Conclusion and Recommendation: P. knowlesi malaria is an emerging infectious disease transmitted from animals to humans. There are challenges in epidemiology, entomology, ecology for effective surveillance, prevention and control. Early diagnosis and treatment would reduce complications and prevent death.

Keywords : malaria, plasmodium knowlesi, epidemiology, ecology, entomology, diagnosis, treatment

Conference Title : ICEID 2024 : International Conference on Epidemiology and Infectious Diseases

Conference Location : Paris, France

Conference Dates : July 18-19, 2024