

## Plasmodium knowlesi Zoonotic Malaria: An Emerging Challenge of Health Problems in Thailand

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**Abstract :** Currently, Plasmodium knowlesi malaria has spread to almost all countries in Southeast Asia. This research aimed to 1) describe the epidemiology of Plasmodium knowlesi malaria, 2) examine the clinical symptoms of P. knowlesi malaria patients 3) analyze the ecology, animal reservoir and entomology of P. knowlesi malaria. 4) summarize the diagnosis, blood parasites, and treatment of P. knowlesi malaria. The study design was a case report combined with retrospective descriptive survey research. A total of 34 study subjects were patients with a confirmed diagnosis of P. knowlesi malaria who received treatment at hospitals and vector-borne disease control units in Songkhla Province during 2021 - 2022. The results of the epidemiological study unveiled the majority of the samples were male, had a history of staying overnight in the forest before becoming sick, the source of the infection was in the forest, and the season during which they were sick was mostly summer. The average length of time from the onset of illness until receiving a blood test was 3.8 days. The average length of hospital stay was 4 days. Patients were treated with Chloroquine Phosphate, Primaquine, Artesunate, Quinine, and Dihydroartemisinin-piperaquine (40 mg DHA-320 mg PPQ). One death was seen in 34 P. knowlesi malaria patients. All remaining patients recovered and responded to treatment. All symptoms improved after drug administration. No treatment failures were found. Analyses of ecological, zoonotic and entomological data revealed an association between infected patients and forested, monkey-hosted and mosquito-transmitted areas. The recommendation from this study was that the Polymerase Chain Reaction (PCR) method should be used in conjunction with the Thick/Thin Film test and blood parasite test (Parasitaemia) for the specificity of the infection, accuracy of diagnosis, leading to treatment of disease in a timely manner and be effective in disease control.

**Keywords :** human malaria, Plasmodium knowlesi, zoonotic disease, diagnosis and treatment, epidemiology, ecology

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