

O1156 Emergence of *Plasmodium knowlesi* at Thai-Myanmar border, Ratchaburi, Thailand (March - September 2018)

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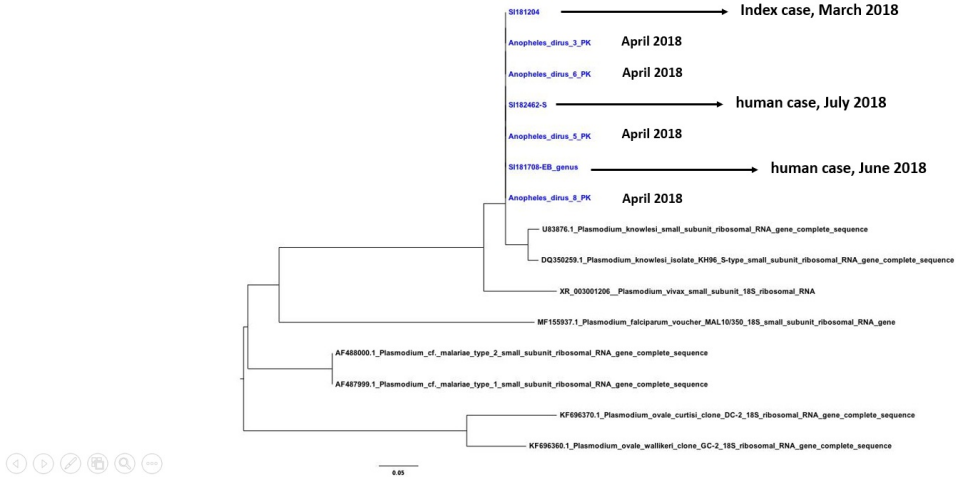
Background: *Plasmodium knowlesi* (PK) is an important newly recognized human pathogen. A long-tailed macaques is natural animal reservoir. The case report of PK malaria in Thailand is limited to Thai-Malaysian border. On March, 2018 we received the notification of a PK malaria case from the Thai-Myanmar border area. We started investigation with aims to confirm the disease, to explore the disease burden, to identify vector and animal reservoirs in this area.

Materials/methods: We conducted descriptive study. We reviewed medical record of all malaria cases in the hospital. We interviewed cases about clinical presentation and travel history in the jungle. We collected blood and blood slide from all malaria cases in this area and confirmed PK by molecular sequencing during March – September 2018. We went to the jungle and collected *Anopheles* spp. and macaques' s blood for testing PK by nested PCR and molecular sequencing.

Results: Total 3 cases of PK were identified (21.42%) in this period. Two cases were male. All cases went to the jungle at Thai-Myanmar border before onset. The index case was 37 years old Thai man. He denied underlying disease. He developed high acute fever, headache and muscle ache on March, 2018. He went to the jungle approximately 2 week earlier. His clinical was worst and admitted in a hospital. Thick and thin film for malaria was similar to *P. malariae* but sequencing revealed PK. We identified 17 contacts who went to the jungle (4 co-workers and 13 forest protection officers). All contacts were negative malaria by PCR. The molecular sequencing of 14 malaria cases revealed 7 *P. vivax*, 4 *P. falciparum* and 3 *P. knowlesi*. Forty-four adult mosquitos identified to be *An. dirus*. Four mosquito pools (4/9) were positive PK malaria. Two macaques' s blood samples (2/4) were positive *P. inui*.

Conclusions: We confirmed PK malaria in human and mosquito from the jungle of Thai-Myanmar border. But animal reservoirs still not be identified. Malaria pigment may not be accuracy for PK. Molecular identification is crucial for PK. The special integrated malaria surveillance among wildlife, vector and human must be implemented for long-term in this area.

Phylogenetic tree of *Plasmodium knowlesi* in human and *Anopheles dirus* in Thai-Myanmar border jungle, March – July 2018



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