

Malaria Research in Khanh Phu, Vietnam and detection of parasites from fecal samples

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While intervention strategies have dramatically reduced malaria prevalence among the human population of Khanh Phu, Vietnam since 1996, the sporozoite positivity rate of the *Anopheles dirus* vector has not fallen during the same period. As a mosquito co-infected with *Plasmodium knowlesi* and human malaria parasites was recently discovered in the forest area of this region, 549 blood samples were collected from people who frequently entered the forest area for work in 2009-2010 to determine *P. knowlesi* prevalence in humans. From these samples, 125 were diagnosed as malaria positive by microscopy. They were subsequently analyzed by PCR for all four human malaria parasite species and *P. knowlesi*. Thirty-two were positive for *P. knowlesi* infections. All the *P. knowlesi*-infected samples were also infected with human malaria parasites. People infected with *P. knowlesi* did not show any obvious severe symptoms except anemia found in a 1 year-old boy. To evaluate the frequency of the *P. knowlesi* sporozoite positivity rate in this area, 5663 *A. dirus* were examined by microscopy and sporozoites were detected in 89 mosquitoes. Seventy-three out of 89 were analyzed by PCR for species diagnosis and 31 were found to be positive for *P. knowlesi*, including 22 co-infection cases with one of the human malaria parasite species. It is highly possible the mosquito vector bites both wild monkeys and humans. The wild monkeys in this area may maintain malaria parasites, which are transmitted to humans by *A. dirus*. It must now be proven that *A. dirus* bites monkeys and the malaria prevalence in wild monkeys has to be evaluated. Recently, *Plasmodium reichenowi* and other species were detected in the fecal samples of African great apes kept for analysis of SIV. Malaria parasite detection in fecal samples of old world monkeys will be discussed.