

Malaria Infections in Non-Human Primate

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Editorial

Many areas of the world still struggle with malaria as a public health issue. It is a potentially fatal condition brought on by *Plasmodium* species parasites that are spread to people via the infected bites of female *Anopheles* mosquitoes. If untreated, it can be fatal, especially in young children under the age of five. In 87 countries with endemic malaria, the World Health Organization (WHO) predicted 229 million cases in 2019. This is a substantial decrease of 4% from the 238 million cases reported in 2000. The COVID-19 pandemic and service interruptions accounted for 77 percent and 68 percent, respectively, of all malaria deaths in 2020. Despite the drop, there were still almost 627,000 malaria deaths reported globally.

In Malaysia, malaria is still regarded as a public health issue, and it has been included on the list of diseases that must be reported on a national level since 1988. In Peninsular Malaysia, it has been acknowledged as a significant condition from the early nineteenth century. The Straits Settlements considered it to be a major problem (i.e., a division of British Malaya including Singapore, Penang, Malacca, Labuan, and some smaller islands).

Since the implementation of the Malaria Eradication Program in Peninsular Malaysia and Malaysian Borneo in 1961 and 1967, respectively, the number of malaria cases has drastically dropped in Malaysia. From 243,870 cases in 1961 to 4725 cases in 2012, it significantly decreased malaria cases. After that, the initiative was reinforced, and since 2018 there have been no indigenous human malaria cases (i.e., *Plasmodium vivax* and *Plasmodium falciparum*). Even if cases of human malaria have significantly declined, the rise of simian malaria has become a serious public health concern in Malaysia's less developed regions. In Peninsular Malaysia and the isolated interior villages of Malaysian Borneo, it is an issue that is particularly difficult to approach. 6 fatal cases of zoonotic malaria were reported among 3222 cases in Malaysia in 2019.

At least 11 different *Plasmodium* species are present in Southeast Asia, where they infect non-human primates. Five of these species are normally present in macaques, whereas the other seven mostly affect apes. *Anopheles* *Leucosphyrus*-group mosquitoes that live in forests are the carriers of the knowlesi malaria parasite; as a result, mosquito population dynamics are a key indicator of malaria risk. As was already established, one of the important causes of the rise in *P. knowlesi* infections in Malaysia is deforestation. However, human interaction, natural reservoir hosts, and effective mosquito vectors are required for successful transmission of simian malaria. Identification of the vector species and settings connected to their exposure to people is the first step in designing control methods for simian malaria. *Anopheles* *hackeri*, *Anopheles* *latens*, *Anopheles* *cracens*, *Anopheles* *introlatus*, and *Anopheles* *balabacensis* are the five species of the *Leucosphyrus* group that are the vectors of *P. knowlesi* malaria in Malaysia.

These outdoor biters are primarily found in woods and are vectors. In the Kudat district of Sabah, where human infections are most prevalent, *A. balabacensis* has been identified as the primary vector. The majority of human cases of Knowles malaria have been documented in Kapit, Sarawak, and *A. latens* has been identified as the vector there. This species often feeds in the forest between the hours of 7 and 10 p.m., preferring to hunt macaques in higher elevations. Meanwhile, *A. cracens*, which has a peak bite period between 8 and 9 p.m., is the primary malaria vector of the Knowles parasite in the majority of states in Peninsular Malaysia. This species is quite zoophilic and has been observed to consume both people and macaques at different levels in the canopy [1-5].

Conclusion

In Malaysia and other Southeast Asian nations, zoonotic malaria poses a public health risk. The natural environments of the hosts and vectors as well as the parasite's development may be responsible for this underdiagnosed yet rapidly spreading disease's dissemination. Additionally, as a newly emerging human source of malaria, changes in the global environment and climate may have an impact on the dynamics of simian malaria transmission. For the National Malaria Elimination Strategic Plan in Malaysia to be successful, further research utilizing molecular and multidisciplinary methods to identify simian malaria infection in humans, vectors, and natural hosts is required.

Conflict of Interest

None.

References

1. Dian, Nor Diyana, Ahmad Firdaus Mohd Salleh, Mohd Amirul Fitri A. Rahim and Mohd Bakhtiar Munajat, et al. "Malaria Cases in a Tertiary Hospital in Kuala Lumpur, Malaysia: A 16-Year (2005–2020) Retrospective Review." *Trop Med Infect Dis* 6 (2021): 177.
2. Rahim, Mohd Amirul Fitri A., Mohd Bakhtiar Munajat, and Zulkarnain Md Idris. "Malaria distribution and performance of malaria diagnostic methods in Malaysia (1980–2019): a systematic review." *Malar J* 19 (2020): 1–12.
3. Antinori, Spinello, Cecilia Bonazzetti, Andrea Giacomelli and Anna Lisa Ridolfo, et al. "Non-human primate and human malaria: past, present and future." *J Travel Med* 28 (2021): taab036.
4. Coatney, G. Robert. "Simian malaria: its importance to world-wide eradication of malaria." *JAMA* 184 (1963): 876–877.
5. Chin, William, Peter G. Contacos, G. Robert Coatney, and Harry R. Kimball, et al. "A naturally acquired quotidian-type malaria in man transferable to monkeys." *Sci* 149 (1965): 865–865.

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