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Pathology of placental malaria in *Plasmodium knowlesi* infected Olive baboons (*Papio anubis*)

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Placental malaria (PM) causes adverse pregnancy outcomes in the mother and her foetus. It is difficult to study PM directly in humans due to ethical challenges. This study set out to bridge this gap by determining the outcome of PM in non-immune baboons in order to develop a non-human primate model for the disease. Ten pregnant baboons were acquired late in their third trimester (day 150) and randomly grouped as seven infected and three non-infected. Another group of four nulligravidae (non-pregnant) infected was also included in the analysis of clinical outcome. Malaria infection was intravenously initiated by *Plasmodium knowlesi* blood-stage parasites through the femoral vein on 160th day of gestation (for pregnant baboons). Peripheral smear, placental smear, haematological samples, and histological samples were collected during the study period. Findings in this study demonstrates the pathophysiology of placental malaria in non-immune baboons. Gross patholog presented similar features to human placentas. Placental parasitaemia was on average 19-fold higher than peripheral parasitaemia in the same animal. Placental damage and infiltration of immune cells was directly associated with *P. knowlesi* infection and subsequent sequestration in the baboon placenta. Therefore, our findings compare with key feature of placental *falciparum* malaria in humans. This presents the baboon as a new model for the characterization of malaria during pregnancy.

Biography

Faith I Onditi is a Senior Research Scientist at the Institute of Primate Research, Department of Tropical and Infectious Diseases, Malaria program. She holds a PhD in Biochemistry (Reproductive Immunology) from University of Nairobi and a Master's degree in Molecular Medicine. Her research interest is in the development of baboon (*Papio anubis*)-*Plasmodium knowlesi* animal model for placental malaria, validating and utilizing the model in testing potential vaccines and drug candidates against malaria in pregnancy. She has published 6 papers in peer reviewed journals and has presented her work in 12 conferences.

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