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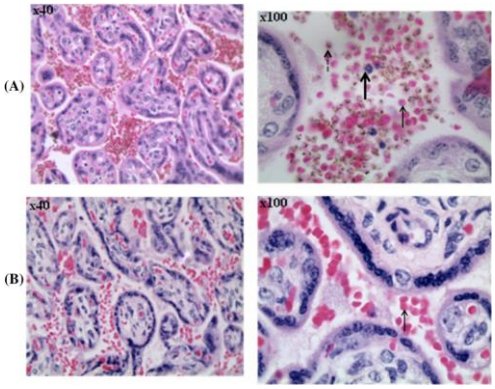


Title: Parasite accumulation in placenta of non-immune baboons during *Plasmodium knowlesi* infection

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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. Malaria infection was intravenously initiated by *Plasmodium knowlesi* blood-stage parasites on 160th day of gestation. Peripheral smear, placental smear, haematological samples, and histological samples were collected during the study period. Median values of clinical and haematological changes were analysed using Kruskal-Wallis and Dunn's Multiple Comparison Test. Parasitaemia profiles were analysed using Mann Whitney U test. A Spearman's rank correlation was run to determine the relationship between the different variables of severity scores. Placental parasitaemia levels was on average 19-fold higher than peripheral parasitaemia in the same animal. Infiltration of parasitized erythrocytes and inflammatory cells were also observed in baboon placenta. Malaria parasite score increased with increase in total placental damage score ($r_s = 0.7650$, $P < 0.05$) and inflammatory score ($r_s = 0.8590$, $P < 0.05$). This study demonstrates accumulation of parasitized red blood cells and infiltration of inflammatory cells in the placental intravillous space of non-immune baboons. This is a key feature of placental *falciparum* malaria in humans. This presents the baboon as a new model for the characterization of malaria during pregnancy.

Figure:



Biography

Dr. Faith Isdorah Onditi has completed her PhD from University of Nairobi, Kenya. She heads the malaria research program, department of Tropical Infectious Diseases at Kenya Institute of Primate Reseach, a premier research organization. She has published 5 papers so far in reputed journals and has presented her work in 13 workshops and seminars. 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.

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