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The detection of vector-borne-disease-related DNA in human stool paves the way to large epidemiological studies

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The detection of *Plasmodium* spp. by the molecular analysis of human feces was reported to be comparable to detection in the blood. We believe that for epidemiological studies using molecular tools, it would be simpler to use feces, which are easier to obtain and require no training for their collection. Our aim was to evaluate the usefulness of feces for the detection of these pathogens towards developing a new tool for their surveillance. Between 2008 and 2010, 451 human fecal samples were collected in two Senegalese villages in which malaria and rickettsioses are endemic. *Rickettsia* and *Plasmodium* DNA were detected using quantitative PCR (qPCR) targeting *Rickettsia* of the spotted fever group (SFG), *R. felis* and *Plasmodium* spp. Two different sequences were systematically targeted for each pathogen. Twenty of the 451 fecal samples (4.4%) were positive for *Rickettsia* spp., including 8 for *R. felis*. Inhabitants of Dielmo were more affected (18/230, 7.8%; p=0.0008) compared to those of Ndiop (2/221, 0.9%). Children under 15 years of age were more often positive (19/285, 6.7%) than were older children (1/166, 0.6%; p=0.005, odds ratio (OR) =11.79). Only one sample was positive for *Plasmodium* spp. This prevalence is similar to that found in the blood of the Senegalese population reported previously. This preliminary report provides a proof of concept for the use of feces for detecting human pathogens, including microorganisms that do not cause gastroenteritis, in epidemiological studies.

Biography

Alpha Kabinet Keita obtained his medical degree at the Faculty of Medicine of the Gamal Abdel Nasser University in Guinea-Conakry in 2007, completed Master degree in 2010 and PhD in infectious diseases and Microbiology in 2013 at Aix-Marseille University in France. Currently, he is Post doctoral Research Scientist at Institut de Recherche pour le Développement (IRD) in Unité de Recherche sur les Maladies Infectieuses et Tropicales Emergentes (URMITE) at Dakar (Senegal). He has published 09 scientific papers in reputed journals and his research interests include epidemiology of infectious diseases, *Tropheryma whipplei* agent of Whipple's disease, malaria and non malaria fever.

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