

## Arbovirus co-infections in suspected febrile malaria and typhoid patients: A worrisome situation in Nigeria

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Clinically symptoms of malaria, typhoid and arboviruses are indistinguishable. In Nigeria, febrile patients only visit a health care facility if the fever persists after self medication with two or three anti-malaria treatments. 310 samples from suspected malaria/typhoid patients were tested initially for *P. falciparum* by microscopy, *S. typhimurium* by widal but Chikungunya, Yellow Fever, Dengue and West Nile viruses by plaque reduction neutralization test. 25 (8%) tested negative for the six pathogens, suggesting other arboviruses not tested may also be circulating. Of those that showed  $\geq 90$ -95% virus neutralization, 196 (69%) had neutralizing antibodies against DENV, 148 (52%) against CHIKV, 72 (25%) against WNV and 25 (9%) against YFV. Within each of these groups, subsets had neutralizing antibodies to each of DENV (95/33%), CHIKV (25/9%) WNV (11/4%), and YFV (6/2%). 135 (44%) of 310 sera tested positive for > 1 virus. Of these, co-infection with DEN/CHIK viruses was most common (44%), followed by DENV/CHIKV/ WNV (23%), CHIKV/WNV and CHIK/YFV (11%). Of the 135 sera co-infected with >1 arbovirus, DENV/WNV co-infection was observed in 8% while WNV/CHIKV & YFV and WNV/YFV occurred only in 2% and 0.7%, respectively. A smaller than expected number of patients with positive diagnoses for typhoid / CHIKV ( $P=0.005$ ) and DENV/YFV ( $P<0.001$ ) was observed. Whereas a higher than expected number had neutralization antibodies for WNV/ CHIKV ( $P<0.001$ ) and YFV/ CHIKV ( $P<0.001$ ). The results suggest that misdiagnosis and under-reporting of arbovirus co-infections as malaria infections, is a serious underlying public health concern in Nigeria.

### Biography

Professor Marycelin Mandu Baba is a Professor of human Virology with University of Maiduguri, Nigeria. She started the Department of Medical Laboratory Science as the head and only staff in 2003/2004 academic session. Now she has more than 30 staff and has graduated three set of graduates with each set specializing in different disciplines such as in Chemical Pathology, Histopathology, Haematology and Medical Microbiology. She is also, the Director of WHO National/ ITD polio Laboratory, at Maiduguri, Borno State, Nigeria. She's actively involved in teaching and research and has published more than 40 papers in reputed local and international journals.

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