Virol Mycol 2018, Volume 7
DOI: 10.4172/2161-0517-C3-030

Antibody response to malaria vaccine candidate antigens in cameroonian children co-infected with malaria and intestinal parasites

Ndiabamoh Crespo'o M[1], Ekali Loni Gabriel[1], Esemu Livo[1], Djontu Jean-Claude[1], Yukie M Lloyd[2], Wilfred Mbacham[1], Jude D Bigoga[1] and **Leke Rose[1]**
[1]University of Yaoundé, Cameroon
[2]University of Hawaii, USA

Background: Malaria and intestinal parasites co-infections are very common condition in children in Africa with an impact on their humoral immune system. However, knowledge on how these co-morbidities specifically affects immune response to malaria vaccine candidate antigens is restricted. We therefore sought to determine the effect of malaria and intestinal parasites co-infections on antibody response to blood stage malaria vaccine candidate antigens.

Methods: A cross sectional analytic study was carried out in two high transmission areas in central Cameroon. Children aged 1-15 years were enrolled after informed consent. Peripheral blood was collected. An onsite rapid diagnostic test (RDT) and haemoglobin measurements (using HemoCue) was done. Fresh stool samples were equally collected. Wet mount, Kato-Katz method and Modified Rietchi concentration techniques were used to analyse stools. Blood smear microscopy was done to confirmation malaria infection and speciation. The MagPix Multiplex Analyte Platform (MAP) assay was used for antibody study.

Results: A total of 320 children were enrolled. The prevalence of malaria was 80.7% and 72.8% in Ngali and Mfou respectively, while that for co-infections was 42.1% and 17.8% respectively. The predominant species was *plasmodium falciparum* (93.3%). The mean parasite density was 12775±3316 malaria parasites per microliters. All children with malaria had high antibodies to MSP142, MSP2FC27, MSP3Ec and EBA175, with the highest of these values occurring in children age 1-5 years. Generally, increased antibody levels to malaria antigens in malaria co-infected children was observed. All co-infected children had a positive correlation between ages, parasitemia, hemoglobin and antibody levels to MSP2FC27, MSP3Ec and EBA175.

Conclusion: The prevalence of malaria and intestinal parasites co-infections remains high in these areas with an increase antibody production to EBA175, MSP2FC27 and MSP3Ec in co-infected children. This information is relevant in anticipating responses of malaria vaccines in these groups. Crude antigens from theses protozoans could be further investigated for their potentials as adjuvants.

crespo.ndiabamoh@yahoo.com