IgG and IgE responses to *Plasmodium falciparum* and intestinal parasites antigens in Mozambican children

Exposure to multiple parasites in African children leads to harboring two or more simultaneous infections, which can generate immune responses with different profiles that may impair the ability of the immune system to fight one of the coexisting pathogens. Intestinal parasites mainly induce T_H2 (and IgE) responses, whereas immunity to *Plasmodium falciparum* is acquired through a T_H1 (and IgG) profile. We have previously found that T_H2 cytokines are associated with lack of protection of the antimalarial vaccine RTS,S and that CSP, the main component of RTS,S, and MSP-2, a *P. falciparum* blood stage antigen, induce elevated levels of IgE. In the case of MSP-2, high IgE levels are associated with the development of malaria. We hypothesize that the induction of T_H2 cytokines and specific IgE against *P. falciparum* antigens is due to an immune deviation caused by previous or current infections with intestinal parasites. In order to investigate the possible role of parasite co-infections on immune deviation, multiplex suspension array technology with a panel of antigens of *P. falciparum* (AMA_1, EXP-1, EBA140, LSA-1, MSP-1, MSP-2, MSP-5), *Giardia lamblia* (VSP_3) and *Cryptosporidium parvum* (Cp_{17}) was used to measure the levels of IgG and IgG_{1-4} in Mozambican children between 2 and 10 years old, for which their infection status for malaria and intestinal helminths and protozoa was known. We will present results on the influence of intestinal parasites on the response to malaria antigens in terms of IgG and its subclasses. We have observed a tendency to have reduced antibody levels in the co-infections groups in comparison with single infection with malaria for most antigens. Future studies will increase the sample size of helminthic gut infections and malaria groups. Ongoing analyses include IgE assessment with an expanded panel including helminth antigens and in samples from malaria vaccine studies and severe malaria studies.