ANTIBODY RESPONSE AGAINST C-TERMINAL REGION OF THE *Plasmodium vivax* MERozoite SURFACE PROTEIN-1 IN INDIVIDUALS FROM AREA WITHOUT MALARIA TRANSMISSION

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**Introduction.** The natural exposition for *Plasmodium* antigen is a factor that can contribute for acquisition of antibodies. The 19kDa C-terminal region of the merozoite surface protein 1 (MSP119) is a highly immunogenic conserved region of *Plasmodium vivax* and one of the most promising vaccine candidates against the erythrocytic forms of malaria. In the past years, we had studied several immuno-epidemiological aspects of the malaria in individuals living in areas of stable and exclusive transmission of *P. vivax* in the north of Brazil, but till this moment we do not have data available about the acquisition of these antibodies in samples from individuals that reside in areas where the cases of malaria are not reported. **Objective.** The aim of this study was to analyze the antibody response among individuals living in areas without transmission of *P. vivax*

**Material and Methods.** We had produced a recombinant protein containing the His6 tag in fusion with *P. vivax* MSP119 in order to test and analyze antigenicity. The antibodies IgG against His6-MSP119 were evaluated by ELISA in sera from 259 individuals living in Sucuriju island, located in Amapá state. **Results.** The percentage of sera that recognized the recombinant protein was 14.67% (38/259). The concentration of antibodies was low. The mean of reactivity index was 1.66 ± 0.87. In the population examined, 250 individuals related never have had malaria. Among the exposed to parasite (9 individuals), only 2 were positive for IgG antibodies that recognized the recombinant protein. The frequency of response was low and in cases of previous malaria episodes, only few cases were positive for detection of these specific antibodies. **Conclusion.** We observed that IgG antibodies response against His6-MSP119 was detected in individuals that reside in an area where malaria transmission was never demonstrated and that these individuals were exposed in another moment to parasite. These results shown that MSP119 is immunogenic after infection by *P. vivax* but the antibodies response have an rapid decay and the re-exposition is important for a persistent antibodies response.

Financial support: PETROBRAS/PIATAM-MAR, CNPq and FAPESPA.

LONG LASTING HUMORAL AND CELLULAR RESPONSES TO *Plasmodium falciparum* MERozoite SURFACE PROTEIN 1 IN THE LOW TRANSMISSION REGION OF PERU CORRELATE WITH LONG-TERM CLINICAL PROTECTION

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**Introduction.** Antibody responses to vaccine candidate antigen Merozoite Surface Protein-1 (MSP-1 19kD) are short-lived (<2 months) in high-transmission areas such as sub-Saharan Africa, and clinical protection does not develop despite constant, overlapping infections for the first 5 years of life. **Objectives.** To investigate IgG and IgG subclass responses to MSP-1 19kD in the low-transmission Amazon region of Peru, where we examined antibody responses before, during, and after spaced *P. falciparum* infections. In addition, we performed plasmablast flow cytometry on a select group of *P. falciparum*-infected individuals to examine the potential for anti-MSP-1 19kD memory responses. **Material and Methods.** Longitudinal blood samples and comprehensive epidemiologic data were obtained from a cohort of ~2000 individuals living near Iquitos, Peru. Between 2003-2006, 111 individuals who had had successive *P. falciparum* infections spaced ~8 months apart were evaluated. ELISAs were performed on sera collected 1 month before, during, and 1 month after a detected infection to evaluate the IgG, IgG subtype, and IgM levels to MSP-1 19kD. Also, available samples from Day 5 and Day 8 after infection were evaluated using flow cytometry for plasmablast content. We then compared antibody responses and plasmablast production with clinical symptoms and parasite density. **Results and Conclusions.** We found that the anti-MSP-1 19kD IgG responses were long-lasting (>8 months) in individuals with a history of relatively frequent or early *P. falciparum* exposure. Children had a lower and slower IgG response than adults, which is likely due to lack of prior exposure. IgG1 and IgG3 responses were high in individuals with fewer symptoms, lower parasite loads, and longer aparasitemic periods. Also, our data indicate that plasmablasts, which were assumed to indicate a memory B-cell population being formed to *P. falciparum* antigens, are more likely to be present 6-8 days after infection in asymptomatic, older individuals than in younger individuals or those responding to a first infection.

Financial Support: National Institute of Health R01 AI64831