

Frequency of ABO blood group system polymorphisms in *Plasmodium falciparum* malaria patients and blood donors from the Brazilian Amazon region

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ABSTRACT. We investigated the ABO genotypes and heterogeneity of the *O* alleles in *Plasmodium falciparum*-infected and non-infected individuals from the Brazilian Amazon region. Sample collection took place from May 2003 to August 2005, from *P. falciparum* malaria patients from four endemic regions of the Brazilian Amazon. The control group consisted of donors from four blood banks in the same areas. DNA was extracted using the Easy-DNA™ extraction kit. ABO genotyping was performed using PCR/RFLP. There was a high frequency of *ABO*O01O01*. *ABO*AO01* was the second

most frequent genotype, and the third most frequent genotype was *ABO*BO01*. There were low frequencies of the *ABO*O01O02*, *ABO*AA*, *ABO*AB*, *ABO*BB*, and *ABO*O02O02* genotypes. We analyzed the alleles of the O phenotype; the *O^{1variant}* allele was the most frequent, both in malaria and non-malaria groups; consequently, the homozygous genotype *O^{1v}O^{1v}* was the most frequently observed. There was no evidence of the homozygous *O²* allele. Significant differences were not detected in the frequency of individuals with the various alleles in the comparison of the malaria patients and the general population (blood donors).

Key words: Malaria; *Plasmodium falciparum*; ABO blood system; Brazilian Amazon region; Genetic polymorphism