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## Evaluation of cholesterol rates in patients with malaria on Brazilian Amazon

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**Background:** In Brazil, malaria is endemic in the Amazon region, responsible for 99.9% of cases of the disease in country, especially due to Plasmodium vivax (87%). Most of the studies performed in endemic regions of Africa, where Plasmodium falciparum is the most prevalent species report low levels of total cholesterol and fractions. The goal of this study was to assess the behavior of this lipoprotein in individuals living in Anajás, a hyperendemic malaria area in Brazilian Amazon, in patients infected with Plasmodium falciparum, Plasmodium vivax and mixed infection (P. falciparum + P. vivax).

**Methods:** In 2012, a cross-sectional study, approved in Ethical Evandro Chagas Committee (protocol nº 028/2010) was conducted in Anajás, located in Marajó island, state of Pará, Brazil (0° 59 '14" South, 49 ° 56' 25" West). There were enrolled 64 patients, age 20-60 years, with positive thick blood smear to malaria, respectively 52% P. falciparum, 42% P. vivax, 6% mixed infection. It drawn 5 ml of venous blood to the biochemistry exams and the serum was stored in liquid nitrogen (-182°C) and transported to Laboratory of Evandro Chagas Institute (Belém, Pará, Brazil), where total cholesterol, high density lipoprotein (HDL cholesterol), and low density lipoprotein (LDL cholesterol) were performed using the machine Cobas Integra 400 (Roche Diagnostics\*) to process the samples, according to the manufacturer's guideline.

**Results:** Mean and SD parasitemias were 1413±1998 parasites/mm3 in 33 patients with falciparum malaria, to 27patients with P. vivax we had 2237±2227 parasites/mm3 and 4 patients with mixed infection (2500F30V/mm3, 50F50V/mm3, 100F500V/mm3, 200F15V/mm3). Patients with Falciparum vivax and mixed infections had a mean of total cholesterol in 142.8±61.6mg/dL, 144.8±84.1mg/dL and 118.6±29.3 mg/dL, HDL cholesterol 25.39±16.3mg/dL, 23.1±13.8mg/dL and 23.5±8.4mg/dL, LDL cholesterol 93.6±49.4mg/dL, 99.6±73 mg/dL and 76.6±23.8mg/dL, respectively.

**Conclusion:** The hypocholesterolemia observed in infections with P. falciparum, P. vivax and mixed infections in Amazonia was similar to that described by P. falciparum in Africa. Apparently the physiologic behavior of the parasite in relation to total cholesterol and fractions is the same independent of their geographical location and drugs resistance, mainly needing of HDL cholesterol to complete its erythrocytic life cycle.

## Biography

Frederico A R Neves has completed his MSc at the age of 35 years in Nucleo de Medicina Tropical da Universidade Federal do Pará. He works in Instituto Evandro Chagas from Belém, Pará, Brazil. He has published articles in the area of lipids and malaria.

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