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Occurrence of *Plasmodium malariae* malaria in the Municipality of Cruzeiro do Sul, Acre State, Brazil*

Ocorrência de malária causada por *Plasmodium malariae* no Município de Cruzeiro do Sul, Estado do Acre, Brasil

Brote de malaria causada por *Plasmodium malariae* en el Municipio de Cruzeiro do Sul, Estado de Acre, Brasil

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Introduction: Few cases of *Plasmodium malariae* malaria are reported in Brazil and until now no case has been in Acre, it could be happen because of the inefficiency of diagnostic methods to identify differences between species, especially in *P. vivax* and *P. malariae*, since the thick film test used in the diagnosis of this disease, this distinction is extremely difficult. The correct identification of the *Plasmodium* species is important to use the appropriate treatment. **Objectives:** 1) To describe the possible occurrence of malaria by *P. malariae* in the Cruzeiro do Sul City, Acre State, Brazil; 2) To demonstrate the epidemiological and clinical aspects of malaria cases; 3) To describe the blood profile of malaria patients; 4) To describe cases of coinfection between plasmodium and the hepatitis B (HBV) and C (HCV); 5) To describe the treatment used in malaria. **Materials and Methods:** Descriptive cross-sectional study, case-series study type, whose sample was composed by three patients from reporting stations of malaria located in Cruzeiro do Sul, it is a municipality with the highest number of reported cases of malaria in Acre. On the first day of treatment, the patients answered a questionnaire and were physically examined and venous blood samples were collected for hemogram and preparation of thick blood smears. These samples were subjected to Nested-PCR reaction (polymerase mediated chain) according to Kimura et al (1997)** for the *P. vivax*, *P. falciparum* and *P. malariae*. **Results:** It was included 136 patients, whom 52.6% were male, age ranged from 12 to 72 years old (average: 30.2 years), 24.2% (33/136) adolescents. The occupations mentioned by patients were: student, housewife and farmer. Approximately 73% of the patients seeking medical attention until four days from beggining of symptoms, and one patient was asymptomatic. Approximately 95% reported previous exposure to malaria, between one and 40 episodes of that disease. The most common symptoms were headache (90.4%), fever (85.2%), backache (81.5%) and chills (78.5%). On physical examination, the main findings were tachypnea (59.3%), abdominal pain on palpation (50.7%), mucocutaneous pallor (44.9%), tachycardia (40.0%), fever (39.3%) and jaundice (22.1%). The liver was palpable 6.3% (8/128) and spleen in 1.6% (2/128) of cases. In the thick blood smears test detected 78.7% cases of malaria caused by *P. vivax*, 20.6% by *P. falciparum* and 0.7% mixed malaria (*P. falciparum* and *P. vivax*). Nested-PCR identified the major samples as mixed malaria (*P. vivax* + *P. falciparum*) disagreeing of the results of the thick blood test. Hemogram was performed in 133 patients (97.8%), which 10.6% (12/132) had anemia, 31.1% (41/132) leukopenia and 20.5% (27/132) platelet count. A case of co-infection of *P. vivax* and HBV have shown, and possibly others with HCV, the latter without confirmation by PCR. Of the 106 patients submitted on anti-HBc test, 47.2% (50/106) were reagent ones. The PCR for plasmodium detected one case (0.7%) of malaria by *P. malariae*, whose result by thick smear test was *P. vivax*. The patient was a woman, 51 years old, farmer, illiterate, married, sick between five and seven days and reported headache as the first symptom but she did not show any manifestation of severe malaria. In most cases of malaria caused by *P. vivax* (99.1%)

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** Kimura M, Kaneko O, Liu Q, Zhou M, Kawamoto F, Wataya Y, et al. Identification of the four species of human malaria parasites by nested PCR that targets variant sequences in the small subunit rRNA gene. Parasitol Int. 1997 Jul;46(2):91-5.

was used in combination with chloroquine and primaquine, while in 92.8% of patients with falciparum malaria was used artesunate and mefloquine combination. There was not any death among the patients in this study. **Conclusion:** *P. malariae* circulates in the City of Cruzeiro do Sul, but the only detected case showed no clinical or haematological difference when it was compared to other cases of malaria caused by other agents.

Keywords: *Plasmodium malariae*; Malaria; Hepatitis B; Cross-sectional Study; Polymerase Chain Reaction.

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