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# Treatment of recurrent malaria in pregnant women with chloroquine and repercussions in the Region of Rorainópolis- RR

Tratamiento del paludismo recurrente en mujeres embarazadas con cloroquina y repercusiones en la Región de Rorainópolis- RR

Tratamento de malária recorrente em gestante com cloroquina e repercussões na Região de Rorainópolis- RR

## ABSTRACT

Malaria remains among the diseases caused by protozoa. Pregnant women are considered a group particularly vulnerable to malaria because they change their immunity during pregnancy, making them more susceptible to changes in the course of pregnancy, increasing the risk of complicated forms of the disease. The objective of this article is to evaluate prescriptions for antimalarials according to quality indicators and to describe reports of adverse events among pregnant women with uncomplicated malaria through the use of chloroquine-based medication. As a methodology, the exposed case study was adopted, all the medical conduct adopted and the clinical treatment of the patient. The results showed that the patient showed reactions due to the side effect, but the delivery was at term without complications with the newborn. Concluding that endemic places of the disease it is necessary to know how to treat correctly, adjusting to the protocols recommended by the Ministry of Health.

**DESCRIPTORS:** Malaria; pregnancy Complications, Infectious; Recurrence.

## RESUMEN

La malaria sigue siendo una de las enfermedades causadas por protozoos. Las mujeres embarazadas se consideran un grupo particularmente vulnerable a la malaria porque cambian su inmunidad durante el embarazo, haciéndolas más susceptibles a cambios en el curso del embarazo, aumentando el riesgo de formas complicadas de la enfermedad. El objetivo de este artículo es evaluar las prescripciones de antimaláricos de acuerdo con indicadores de calidad y describir informes de eventos adversos en mujeres embarazadas con malaria no complicada mediante el uso de medicamentos a base de cloroquina. Como metodología se adoptó el estudio de caso expuesto, toda la conducta médica adoptada y el tratamiento clínico del paciente. Los resultados mostraron que la paciente presentó reacciones por efecto secundario, pero el parto fue a término sin complicaciones con el recién nacido. Concluyendo que los lugares endémicos de la enfermedad es necesario saber tratar correctamente, ajustándose a los protocolos recomendados por el Ministerio de Salud.

**DESCRIPTORES:** Malaria; Complicaciones Infecciosas del Embarazo; Recurrencia.

## RESUMO

A malária continua sendo, entre as doenças causadas por protozoários. As mulheres grávidas são consideradas um grupo particularmente vulnerável à malária por alterar o seu estado de imunidade durante a gestação, tornando-as mais suscetíveis às alterações no curso da gravidez, aumentando o risco de formas complicadas da doença. O objetivo deste artigo é avaliar prescrições de antimaláricos segundo indicadores de qualidade e descrever relatos de eventos adversos entre gestantes com malária não complicada através do uso da medicação a base de cloroquina. Como metodologia foi adotado o estudo de caso exposto toda a conduta médica adotada e o tratamento clínico da paciente. Os resultados mostraram que a paciente demonstrou reações devido ao efeito colateral, porém o parto foi a termo sem intercorrências com o recém-nascido. Concluindo que lugares endêmicos da doença se faz necessário saber como tratar corretamente ajustando-se aos protocolos recomendados pelo Ministério da Saúde.

**DESCRITORES:** Malária; Complicações Infecciosas na Gravidez; Recidiva.

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**INTRODUCTION**

**M**alaria is known to be a popular disease in the Amazon region due to the number of cases registered annually. It is a parasitic infection caused by an obligatory intracellular protozoan of the *Plasmodium* genus, whose transmission is made through the infected female of the mosquito belonging to the *Anopheles* genus, occurring when this mosquito feeds on blood in an individual.<sup>1</sup>

Malaria symptoms are triggered when toxins are released after the parasite has developed in the early stages of the disease. The first symptoms are nonspecific and similar to a flu syndrome, such as: fever, chills and sweating. To confirm the disease, a thick blood smear examination is performed using a microscopic slide. In this initial phase, patients can be easily treated, with quick and complete recovery, but if sought later, treatment can progress to severe malaria.<sup>2</sup>

During pregnancy, it is a potentially serious condition that affects the population all over the world, and it is estimated that each year 50 million pregnant women are exposed to the risk of this infection annually. Pregnant women are a particularly vulnerable group to malaria due to changes in the immune system.<sup>3</sup>

Thus, it consists of an increase in risks and complications during pregnancy resulting from changes caused by malaria, such

as maternal anemia and maternal death, prematurity, low birth weight, fetal loss and maternal death. And for the fetus, maternal malaria poses the threat of miscarriage and premature birth, low birth weight and restricted intrauterine growth.<sup>4</sup>

The main strategies in the treatment of malaria in pregnant women adopted by the Ministry of Health are drug treatment, guided by the official protocol and periodically revised. The protocol deals with the organization of therapeutic regimens for all patients, including gestational malaria, varying according to the parasitic species, the severity of the disease and the presence of pregnancy, and other factors.<sup>5</sup>

In the protocol for pregnant women with malaria uncomplicated by *P. vivax*, for example, the use of chloroquine-based medication is recommended as a first choice. The treatment consists of administering 4 pills on the first day of the beginning of the protocol and 3 pills on the other days, totaling 3 days of treatment.<sup>6</sup>

In the case of *P. falciparum* infections with this same condition, treatment consists of using three quinine sulphate tablets a day for a period of seven days. Another treatment has the protocol of administration of quinine sulfate 30mg/kg/day for 3 days, associated with 20mg/kg of clindamycin, four times a day, for a period of five days.<sup>6</sup>

The aim of this article is to evaluate antimalarial prescriptions according to quality indicators describing the re-

ports of adverse events among pregnant women with uncomplicated malaria through the use of medication based on chloroquine.

**METHODS**

This article adopted the qualitative method for the theoretical framework used through bibliographic sources from scientific articles, books and protocols provided by the Ministry of Health (MH), scientific journals such as *Revista Saúde Coletiva* (Barueri), *Revista Brasileira de Ginecologia e Obstetrícia*, *Revista Brasileira de Epidemiologia*, *Revista da Sociedade Brasileira de Medicina Tropical* among others. This is a case study, describing the diagnosis and evolution of malaria in pregnancy. The survey was conducted in 2019 and lasted for 07 months.

Exposing the mechanisms of the disease and treatments, from clinical and laboratory studies previously used in other cases, as it brings great relevance and scientific contribution, it brings the treatment of a pregnant patient diagnosed with Malaria. The report is made from the first consultation, as the protocol used and monitoring of the healing process.

Data collection was performed at the Gentil Carneiro Basic Health Unit, located in the city of Rorainópolis - Roraima, through the patient's medical record, which authorized the publication of her clinical data for the exclusive use of scien-

tific research by signing the Informed Consent Form (ICF) Resolution No. 466/12 of the National Health Council – CNS (Conselho Nacional de Saúde).

The time limit established was the duration of follow-up of prenatal and postpartum consultations carried out by the patient during 2019. The patient had symptoms similar to malaria, which was later confirmed by examination. The disease was present throughout pregnancy through recurrent episodes. As an inclusion character for the research, the number of tests tested positive for malaria during pregnancy was used, characterizing it as a recurrent pathology that lasted throughout the gestational period.

It is known that during the gestational period when the pregnant woman becomes infected with Malaria, the basic treatment protocol recommends the use of the drug Chloroquine as the first choice. In the results, the case report is presented along with the conduct adopted during the patient's pregnancy and puerperal period.

## RESULTS

Patient S.S.S., 32 years old, started low-risk prenatal care on December 6, 2018 with a gestational age equivalent to 9 weeks, referring to the day of the last menstruation (LMP) on October 3rd, 2018, residing in an endemic area for emerging diseases.

On January 7th, 2019, gestational age equivalent to 13 weeks and 5 days, the patient came to the consultation reporting symptoms such as nausea, fever and vomiting. Being referred to perform the malaria examination through the slide, the result was positive for vivax. The approach adopted was the use of 150 mg chloroquine medication for 3 consecutive days. The test was repeated on January 28th, 2019 and was negative.

On February 6th, 2019, she reported only headache in a medical consultation, a thick blood drop was requested again on February 8th, 2019 positive vivax malaria again, she had a gestational age equi-

valent to 18 weeks and 2 days was treated by an obstetrician in the region, with weekly chloroquine, until March 8th, 2019 and stopped due to the doctor moving from the municipality, during this period I had a malaria slide on March 19th, 2019 - negative malaria, the conduct was to do a malaria slide every month.

**It is known that during the gestational period when the pregnant woman becomes infected with Malaria, the basic treatment protocol recommends the use of the drug Chloroquine as the first choice. In the results, the case report is presented along with the conduct adopted during the patient's pregnancy and puerperal period.**

Again, during the prenatal consultation that took place on April 15th, 2019 with a gestational age equivalent to 27 weeks and 5 days, he presented a positive result for vivax with a slide, he was treated with chloroquine for 3 days, after which the malaria treatment was started again, recurrent in primary care, on May 10th, 2019 weekly chloroquine 150mg 02 tablets once a week for 12 weeks, and requested a 15/15 day malaria slide, and follow-up with prenatal consultations for 15/15 days.

On June 3rd, 2019 with a gestational age equivalent to 34 weeks and 5 days, she had contractions and severe pain, needing to go to the emergency room of the municipality, where she was diagnosed with threat of premature birth, referred to the maternity hospital located in the municipality of Boa Vista, a reference in the region, received steroids and nifedipine, and she was able to stabilize her condition, she was hospitalized for 5 days, during hospitalization she took a weekly dose of chloroquine and was discharged while maintaining the chloroquine prescription.

Attended the consultation on June 11th, 2019, gestational age equivalent to 35 weeks and 6 days attended the consultation, referring to the threat of premature birth and intense weakness, the conduct was referred to high risk due to complications of malaria in pregnancy, however, patient due to social conditions can not go to the reference in good view. Patient continued with weekly follow-up.

On June 18th, 2019, with a gestational age equivalent to 36 weeks and 6 days, complaining of poor general condition, nausea and diarrhea for 2 days, repeated negative malaria slides, at the time he was in the seventh week of treatment.

And finally, on July 4th, 2019, a cesarean delivery took place, with a gestational age equivalent to 39 weeks and 1 day. The cesarean was uneventful, the newborn did not show any symptoms, was born well, with a slide of malaria

in the pregnant woman and in the NB, both were negative, NB exams without changes, in a postpartum home visit and NB had no changes on physical examination, and with no complaints.

## DISCUSSION

The protocol used during pregnancy is supported by the protocol of strategies adopted by the National Malaria Control Program.<sup>5</sup> The timely and adequate treatment of cases is one of the main strategies adopted by the National Malaria Control Program. In this study, the use of the drug chloroquine in monotherapy was verified, one of the varieties of antimalarial regimens used for the treatment of pregnant women, this drug is classified in pregnancy as category C, where animal studies showed abnormalities in the offspring, but there are no studies in humans, the risk to the baby cannot be ruled out, but medication use is still the most used as the potential benefit may outweigh the risks.<sup>7</sup>

The use of chloroquine was predominant throughout pregnancy due to recurrent episodes of complaints and positive tests for the disease. During treatment, the patient had reactions due to the side effects of using chloroquine during pregnancy and in general in pregnant women, such as headaches, di-

ziness, tiredness, nausea, vomiting, loss of appetite and abdominal discomfort. Side effects in pregnant patients are common and are described throughout the literature.<sup>8</sup>

One of the main concerns of malaria in pregnancy is that it is one of the causes of many premature or threatened births. In the case study, it can be seen through the symptoms reported that the patient presented symptoms consistent with the threat of premature birth, being referred to the Maternity Hospital for treatment and thus the birth occurred within the expected period, being considered a term pregnancy.<sup>4</sup>

Although the literature reports clinical cases yesterday, the newborn may develop placental malaria or have sequelae during the period of pregnancy in which the disease occurred, the NB of the study patient was not affected, being later proven through examination and maintaining follow-up during routine postpartum consultations.

This case report will add to the literature on the efficiency of the exclusive use of chloroquine in the recurrent treatment of malaria in pregnancy. Due to the lack of specificity of medications for exclusive use during pregnancy, little is said about this in the literature, and in endemic places it is necessary to know how to correctly treat this disease in or-

der not to cause any harm to both the mother and the baby, also preventing the pregnant woman from having several episodes during this period.<sup>9</sup>

## CONCLUSION

As it has been seen, malaria is a curable disease, after identifying the parasitic species by laboratory examination of the thick drop, treatment must be immediately instituted in accordance with the protocols presented by the Ministry of Health, thus avoiding complications or complications and development of severe malaria.

It is noteworthy that it is of utmost importance that all health professionals involved in the treatment of malaria, as well as in prenatal care, guide pregnant patients about the type of medication being offered, how to ingest it and the respective times as well as the importance of not interrupting drug treatment.

Thus, this work contributes to the medical approach to be used in the fight against malaria in pregnancy, listing the main care in prenatal care. It is also expected that the evaluation methodology used can be used to monitor the treatment during pregnancy for other endemic diseases, being a reference for fighting malaria based on early diagnosis and treatment. ■

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