

MALARIA IS CAUSED BY P. FALCIPARUM

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Abstract: Malaria is an infectious disease caused by *Plasmodium* species (*P. vivax*, *P. ovale*, *P. malariae*, *P. falciparum*), transmitted through the bite of female mosquitoes of the *Anopheles* genus. The clinical presentation typically includes febrile episodes, chills, progressively worsening anemia and splenomegaly. Malaria caused by *P. falciparum* is particularly prevalent in tropical regions and is often encountered in individuals with a recent history of travel to endemic countries. This case report describes a 48-year-old male patient diagnosed with malaria and emphasizes the importance of prophylactic antimalarial drug use among individuals traveling to malaria-endemic areas for effective disease prevention.

Keywords: Malaria, *P. falciparum*, prophylactic treatment

Introduction

Malaria, caused by *Plasmodium falciparum*, is a form of infectious disease in humans with the most severe clinical course and a high mortality rate. This parasite is widespread in tropical and subtropical regions, especially in Africa, Southeast Asia, and South America. Infection occurs through the bite of female *Anopheles* mosquitoes. Patients with *P. falciparum* infection experience symptoms such as fever, chills, weakness, and anemia. The disease can progress rapidly and, if not diagnosed early, can lead to serious complications, including coma, pulmonary edema, renal failure, and life-threatening conditions such as hypoglycemia. In the initial stage, patients present with high and persistent fever, severe chills, headache, muscle aches, fatigue, nausea, vomiting, and sometimes abdominal pain, as well as symptoms such as oliguria, jaundice, elevated transaminases, and thrombocytopenia. These symptoms can be confused with those of other infectious diseases, so a thorough travel history and laboratory diagnosis are crucial. Severe clinical manifestations of *P. falciparum* malaria, especially in travelers to endemic areas, carry a high risk of death if not treated promptly. Therefore, preventive measures and pre-travel drug therapy are essential.

Methods

Clinical case: A 48-year-old male patient has considered himself ill since 11.09.25. According to the anamnesis, he traveled to the African republic on 26.08-28.08.25 and returned to Baku on 29.08.25. The symptoms that began with a dry cough were suddenly accompanied by complaints of high fever (39-40°C) 6 days ago, chills, sweating, and weakness. He consulted a doctor at another center and took Ceftriaxone (1 g x 2 times) and paracetamol for 2 days.

However, since there was no improvement in his general condition, he was admitted to the Infectious Diseases Department of the Clinical Medical Center for inpatient treatment. According to the anamnesis and symptoms, the patient's blood sample was sent to the GEM, and *P. Falciparum* gametocytes and trophozoites were detected in the Giemsa-stained examination.

Results and discussion

When the patient was admitted to the department, his complaints were high fever, weakness, chills, cough, and shortness of breath. During auscultation, dry wheezing and coarse breathing were heard in the upper lobes of the lungs. During palpation, the liver was enlarged. The skin and visible mucous membranes were pale. Laboratory tests showed complete blood count WBC - $3.19 \times 10^3 \mu\text{L}$; HGB - 13.3 g/dL; PLT - $12 \times 10^3 \mu\text{L}$ NEUT% % -81.2; LYM- $0.49 \times 10^3 \mu\text{L}$: biochemical blood test ALT-105.2 U/L AST- 73.6 U/L, CRP-190.2 mg/dL, bilirubin-2.08 mg/dL. In instrumental examinations, pleuropulmonary fibrotic bands were detected in the superior and inferior lingular segments of the left lung during CT of the chest (Fig. 1.)

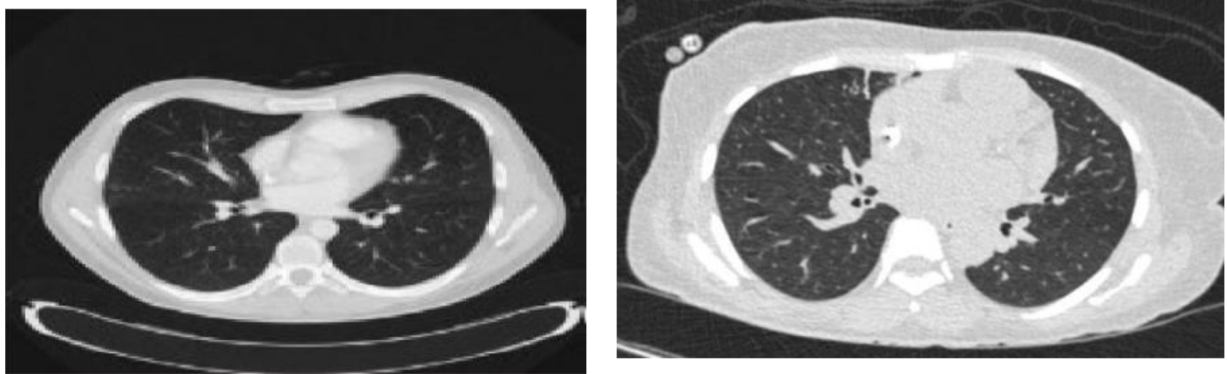


Fig. 1. CT chest images

The patient was prescribed symptomatic treatment with artesunate (iv.. 2.4 mg/kg x 3) and artesunate-lumefantrine tablets (4 tablets x 2) for 3 days according to the appropriate scheme. As a result of the examination and treatment, the patient's fever, cough, and shortness of breath resolved. Laboratory indicators P. falciparum gametocytes and trophozoites were not detected, complete blood count WBC- $14.76 \times 10^3 \mu\text{L}$; HGB-12.2 g/dL; PLT- $430 \times 10^3 \mu\text{L}$; NEUT % -74.6; LYM- $2.54 \times 10^3 \mu\text{L}$. After achieving clinical and laboratory recovery, the patient was discharged home.

Discussion: While our country was once on the list of endemic countries for malaria, no cases of domestic infection have been reported since 2013 as part of preventive measures, and it has been officially recognized by WHO since 2023 (3). This clinical case shows that malaria caused by P. falciparum can develop after a short trip to an endemic region. The patient's approximately 10-day latent period after returning from Africa, followed by his admission to the hospital with acute symptoms, coincides with the classic clinical course of P. falciparum infection (1,2). Despite the patient receiving antibiotics during the initial treatment approach, the persistence of fever and deterioration of the condition indicate that the lack of proper and early recognition of malaria negatively affected the course of the disease. The patient also had anemia, thrombocytopenia, elevated CRP and liver enzymes, hypoxemia, and fibrotic changes on lung CT, which are evidence of systemic effects of the disease (1,2,4). The initiation of antimalarial treatment - intravenous artesunate and then oral artesunate-lumefantrine combination therapy, as well as symptomatic supportive care, resulted in significant improvement in the patient's clinical and laboratory parameters.

Conclusion

Timely recognition and treatment of P. falciparum malaria in patients is vital. This clinical case demonstrates that the disease can be cured with early diagnosis and proper treatment (1,2). It also highlights the importance of prevention. Although preventive antimalarial treatment (chemoprophylaxis)

is not mandatory for travelers to endemic areas, it is very important (1,2) . Experts should conduct a pre-travel risk assessment, prescribe mosquito protection methods, and prescribe appropriate drug prophylaxis. This is a key tool for health. These preventive strategies remain one of the most effective public health tools for reducing malaria transmission worldwide (1) .

References

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