

Interplay of malaria, thrombocytopenia, and HIV Co-infection in a traveler returning from an endemic area: A clinical case report

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Abstract

Background: The co-infection of malaria and HIV presents considerable diagnostic and treatment difficulties, especially in travellers returning from endemic areas.

Thrombocytopenia is a prevalent haematological symptom in malaria, frequently signifying severe disease, and its management is complicated by HIV co-infection.

Case presentation: We present a case of a 36-year-old man who had high-grade fever, non-bloody diarrhoea, and generalized weakness upon his return from Kenya, a region endemic to malaria. Laboratory studies indicated *Plasmodium falciparum* infection accompanied by pronounced thrombocytopenia, acute renal damage, and high D-dimer levels, in addition to a recent diagnosis of HIV. The patient received atovaquone- proguanil and supportive treatment, which included intravenous fluids and empirical antibiotics. Notwithstanding thrombocytopenia and the problems associated with HIV co-infection, the patient exhibited considerable clinical improvement without any serious sequelae.

Conclusion: This case emphasizes the significance of taking malaria into account in febrile patients who have recently travelled to endemic regions, particularly when it is exacerbated by HIV co-infection. Timely diagnosis and a multidisciplinary strategy are essential for enhancing patient outcomes in these intricate circumstances.

Introduction

Malaria continues to be an important worldwide health issue, especially in tropical areas where it causes considerable morbidity and mortality [1]. Thrombocytopenia, a prevalent haematologic manifestation in malaria, frequently signifies illness severity [2]. The management of malaria becomes considerably more challenging in the presence of HIV co- infection, as it might modify the disease's development and

confound therapeutic approaches [3]. In an age of heightened global travel, it is essential for healthcare personnel to incorporate a patient's travel history into the differential diagnosis of febrile infections [4].

This case report underscores the vital significance of prompt diagnosis and thorough clinical assessment, stressing the necessity of meticulously evaluating travel history and underlying diseases, such as newly diagnosed HIV, to guarantee suitable and timely intervention.

Case Presentation

A 36-year-old guy arrived to the hospital with a high-grade fever of 103.1°F, accompanied by non-bloody diarrhoea, diaphoresis, chills, and generalized cephalgia. The patient returned from Kenya, a malaria-endemic location, 1.5 weeks ago, raising considerable worries regarding a potential malaria infection. The patient's medical history included hypertension. Vital indicators were as follows- Blood Pressure: 163/100 mmHg, Pulse: 127 beats per minute, Respiratory Rate: 16 per minute.

During the physical examination, the patient presented as unwell and diaphoretic.

The cardiovascular assessment indicated tachycardia with a steady rhythm and normal heart sounds. His respiratory system exhibited clarity, devoid of discomfort, and bilateral breath sounds were normal. The abdominal examination revealed a soft, non-tender abdomen accompanied with heightened bowel noises. The patient exhibited alertness and orientation neurologically.

Hematological assays indicated a hemoglobin level of 13.4 g/dL, a hematocrit of 40.5%, and a White Blood Cell (WBC) count within the normal range at $4.6 \times 10^3/\mu\text{L}$. The blood smear revealed neutrophils with band forms, monocytosis, and ring-like intracellular structures in red blood cells. Nevertheless, the platelet count was recorded at $60 \times 10^3/\mu\text{L}$, and sodium levels were measured at 129 mmol/L. The patient's creatinine level was marginally high at 1.34 mg/dL, and Pro-calcitonin levels were elevated at 1.04 ng/mL. Furthermore, the D-dimer level was high, and CT imaging excluded pulmonary embolism.

The patient was diagnosed with malaria, exacerbated by severe thrombocytopenia and acute renal failure.

Furthermore, the patient received a new diagnosis of HIV while hospitalization, complicating his clinical treatment. The patient got atovaquone-proguanil for malaria treatment and supportive care, which included intravenous fluids for rehydration, electrolyte monitoring, and the initiation of empirical antibiotics. Piperacillin/Tazobactam with Vancomycin.

During the hospital admission, the patient remained without fever once treatment commenced, exhibiting significant symptom improvement. Despite the persistence of thrombocytopenia, there were no signs of bleeding, and the patient remained hemodynamically stable. The patient was informed of his new HIV diagnosis, with plans for confirmatory testing and potential beginning of Antiretroviral medication (ART).

Discussion

This example exemplifies the intricacies of controlling malaria in an HIV-positive patient, with thrombocytopenia acting as a critical indicator of illness severity [5]. The co-infection of malaria and HIV presents distinct issues, including bleeding complications; the presence of HIV certainly contributes to the reduced platelet count, highlighting the necessity for vigilant surveillance [6].

Individuals with HIV with malaria face an elevated risk of severe illness manifestations, including extended parasitaemia and increased incidence of sequelae such as thrombocytopenia [7]. The increased D-dimer level, although indicative of potential thrombotic events, did not correlate with any clinical thrombotic consequences, as verified by imaging.

Timely diagnosis and suitable treatment are crucial for the efficient management of such patients. The patient exhibited a favorable response to atovaquone and proguanil, with no serious problems despite pronounced thrombocytopenia.

Conclusion

This case highlights the necessity of evaluating malaria in patients with fever who have recently travelled to endemic regions, particularly in individuals with confirmed or suspected HIV infection.

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