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Evolutive Visceral Malaria in Children: Clinical, Therapeutic and Progressive Aspects of 12 Cases Treated in the Pediatric Department of Chul from January 2017 to November 2024

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Introduction

Evolutive visceral malaria is a rare but severe form of malaria, often seen in young children in endemic areas, mainly in sub-Saharan Africa. This condition is characterized by progressive hepatosplenomegaly, immunological disorders, severe anemia, and clinical signs varied [1, 2].

Malaria, caused by Plasmodium falciparum, represents one of the leading causes of infant morbidity and mortality in tropical and subtropical regions of the world [3].

The diagnosis of evolutive visceral malaria is based on a set of clinical symptoms and diagnostic tests, including serological tests and abdominal ultrasound. Our study presents 12 patients with massive hepatosplenomegaly, anemic syndrome and hyper gammaglobulinemia, characteristic of this rare form of malaria.

The aim of our study was to describe the diagnostic, therapeutic and evolutionary approach of this condition.

Patients and Methods

This is a retrospective study of 12 children (7 girls and 5 boys), diagnosed and followed between January 2017 and November 2024 for active visceral malaria. 8 patients were from rural areas, and all cases had a positive thick blood film for Plasmodium falciparum. Hepatosplenomegaly with splenic sequestration was observed in 4 patients, while 2 patients required splenectomy, and 2 others had splenic rupture, leading to their death.

Results

The study included 7 girls and 5 boys, diagnosed with Evolutive visceral malaria. Clinical examination revealed long-standing abdominal distension, according to the parents, with an increase in abdominal volume in 5 patients, including 2 with sickle cell disease. All patients presented with severe hepatomegaly and splenomegaly (Hackett stage 4) as well as a clinical anemic syndrome.

Laboratory tests showed a positive thick blood film in all patients, with low parasitemia, leukopenia in 3 patients, and severe anemia (3 g/dl) in 2 children (with a hematocrit less than 15%). The other patients had hemoglobin levels between 5 and 7 g/dl. Marked hypergammaglobulinemia was observed, and antimalarial serology by indirect immunofluorescence was positive in 6 patients. Serological tests for HCV, HBV and SRV as well as hemoglobin electrophoresis were performed to establish the differential diagnosis. Abdominal ultrasound performed in all patients demonstrated Hackett grade 4 hepatomegaly and splenomegaly in 4 patients. Abdominal computed tomography was performed in 3 patients.

Medical treatment consisted of the administration of artesunate, an artemisinin derivative, and symptomatic management of anemia and other clinical signs. Surgical treatment involved splenectomy in 3 patients. Clinical and biological follow-up was performed to assess the evolution of the patients' condition. Two deaths were recorded.

Treatment

Treatment of Evolutive visceral malaria consists of the administration of effective antimalarials. In these cases, artesunate, an artemisinin derivative, was administered in 7 doses (H0, H12, H24, H48, H72, H96, H120), followed by clinical monitoring to assess the response to treatment. In parallel, symptomatic treatment with paracetamol was initiated to manage fever and pain [4, 5]. Nutritional support was implemented, with particular attention paid to the correction of anemia and monitoring of the nutritional status of the children [6]. In addition, surgical man-

agement of complications by splenectomy was performed in the two sickle cell patients.

Monitoring and Evolution

Follow-up showed rapid improvement in the clinical condition of 10 children. Hepatosplenomegaly decreased in size, blood counts showed normalization of hemoglobin and platelets, and hypergammaglobulinemia gradually decreased in 8 patients. Regular biological monitoring prevented complications, such as splenic rupture, which led to the two deaths recorded, as well as signs of liver failure. The treatment was therefore considered effective in 8 patients, and the duration of hospitalization varied between 7 and 15 days, with regular follow-up in the outpatient clinic.

Discussion

Evolutive visceral malaria is a rare but severe form of malaria, often seen in young children in endemic areas such as sub-Saharan Africa. This clinical form is characterized by severe hepatosplenomegaly, anemic syndrome, leukopenia, and hypergammaglobulinemia. It is frequently associated with low or absent parasitemia on blood smear, which can complicate diagnosis. The clinical signs of this form of malaria are often nonspecific, which can delay the initiation of appropriate treatment. Diagnostic tests are crucial for differential diagnosis. In this case, although the initial blood smear was negative, malaria serology and abdominal ultrasound confirmed active visceral malaria. Seroimmunology is a valuable tool for detecting previous malaria infection and assessing the host immune response [1, 2, 7-10].

Treatment of Evolutive visceral malaria is mainly based on the administration of artemisinin derivatives, such as artesunate, which have shown remarkable efficacy against severe forms of the disease [4]. Antimalarials should be administered with close clinical monitoring to avoid serious complications such as splenic rupture or bleeding disorders. Symptomatic management of anemia and thrombocytopenia is also essential to improve the child's general condition [11, 12].

Conclusion

Evolutive visceral malaria is a rare but extremely serious form of malaria, which requires rapid diagnosis and appropriate treatment to avoid fatal complications such as splenic rupture. This study highlights the importance of early management with effective antimalarials, including artesunate, as well as symptomatic management and close monitoring to prevent serious complications [4, 12]. Long-term follow-up is crucial to assess the evolution of patients' condition after treatment and to avoid recurrences [11, 5]. The management of this condition remains complex and must be multidisciplinary, including specialists in pediatrics, surgery and hematology for optimal management of complications, including splenectomy and management of severe anemia [6].

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