HEMOPHAGOCYTIC SYNDROME AND ACUTE KIDNEY INJURY IN CHILDREN WITH VISCERAL LEISHMANIASIS: SERIES OF 17 CASES IN NORTHEAST BRAZIL

Ana Patrícia Freitas Vieira[1], Laio Ladislau Lopes Lima[1], Lucas Silveira do Nascimento[1], Geraldo Bezerra da Silva Junior[1,2], Elizabeth De Francesco Daher[1]

[1]Post-Graduation Program in Medical Sciences, Department of Internal Medicine, School of Medicine, Federal University of Ceará, Fortaleza, Ceará, Brazil; [2]School of Medicine, Health Sciences Center, University of Fortaleza, Fortaleza, Ceará, Brazil.

OBJECTIVES

Hemophagocytic syndrome (HS) is a rare complication in visceral leishmaniasis (VL). Acute kidney injury (AKI) has been described in the course of VL, but its pathophysiology is not completely understood. The aim of this study is to describe the occurrence of HS and AKI in children with VL.

METHODS

This is a retrospective cohort of 17 patients diagnosed with VL, complicated by HS and AKI, admitted to a tertiary hospital in Fortaleza city, Northeast Brazil, in the period from January 2012 to December 2013. Medical records were reviewed and data regarding clinical manifestations and laboratory tests at admission and during hospital stay was done. AKI was defined according to the pRIFLE criteria.

RESULTS

Patients' mean age was 3.2±3 years (range 1-13 years) and 60% were male. Time between initial manifestations and admission was 44±52 days. Mean time of hospital stay was 29±10 days. Laboratory tests at hospital admission showed: Hb 6.8±1.5g/dL, white blood count 4198±3418/mm^3, platelets 91294±58712/mm^3, LDH 1796±532IU/L, total bilirubin 1.6±1.7mg/dL, indirect bilirubin 1.0±1.4mg/dL, albumin 3.2±0.7g/dL, globulins 3.5±0.8g/dL, AST 167±193IU/L, ALT 79±95IU/L, ferritin 4148±8461ng/mL, creatinine 0.4±0.1mg/dL (maximum creatinine range 0.4-1.0mg/dL), sodium 132±6.2mEq/L, potassium 4.0±0.7mEq/L. Anemia was seen in 10 cases (58.8%), leukopenia in 8 (47%) and thrombocytopenia in 16 (94%). Febrile neutropenia was observed in 14 patients (82.4%). The main symptoms and signs included dyspnea (100%), hemorrhagic manifestations (100%), hypotension (100%), jaundice (100%), rash (100%), hepato-splenomegaly (88%) and oliguria (5.9%). AKI was observed in 12 cases (70.5%). According to the RIFLE criteria patients were in Risk (58.8%) and Injury (11.7%). No patient required dialysis and there was no death. Complete renal function recovery was observed in all cases.

Table 1. Main laboratory tests in a cohort of children with visceral leishmaniasis and hemophagocytic syndrome.

Laboratory Tests	Mean±SD
Hemoglobin (g/dL)	6.8±1.5
White blood count (/mm^3)	4198±3418
Platelets (/mm^3)	91294±58712
LDH (IU/L)	1796±532
Total Bilirubin (mg/dL)	1.6±1.7
Indirect Bilirubin (mg/dL)	1.0±1.4
Albumin (g/dL)	3.2±0.7
Globulins (g/dL)	3.5±0.8
AST (IU/L)	167±193
ALT (IU/L)	79±95
Creatinine (mg/dL)	0.4±0.1
Sodium (mEq/L)	132±6.2
Potassium (mEq/L)	4.0±0.7

Table 2. Main complications in a cohort of children with visceral leishmaniasis and hemophagocytic syndrome.

Complication	N (%)
Anemia	10 (58.8)
Leukopenia	8 (47)
Thrombocytopenia	16 (94)
Febrile neutropenia	14 (82.4)
Hemorrhagia	17 (100)
Hypotension	17 (100)
Oliguria	1 (5.9)
AKI	12 (70.5)

Table 3. RIFLE classification in children with visceral leishmaniasis and hemophagocytic syndrome

Complication	N (%)
Risk	10 (58.8)
Injury	2 (11.7)
Failure	0
Loss	0
End-stage	0

CONCLUSION

HS is an unusual complication of VL, which can be associated with AKI. A possible causal role between HS and AK in VL should be investigated in further studies. Despite being a severe disease, there was no case of severe AKI in these patients with HS. Early recognition and treatment of HS and AKI in the course of VL is of huge importance to achieve a favorable outcome.

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E-mail: geraldobezerrajr@yahoo.com.br, efdaher@uol.com.br

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