ACUTE KIDNEY INJURY IN SCHISTOSOMIASIS: A RETROSPECTIVE COHORT OF 60 PATIENTS IN BRAZIL

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OBJECTIVES

Schistosomiasis is an important parasitic disease which is endemic in tropical countries. The aim of this study is to investigate the occurrence of acute kidney injury (AKI) in schistosomiasis.

METHODS

A retrospective cohort of 60 consecutive patients with schistosomiasis admitted to a university hospital in Maceió, Brazil. The patients were divided into two groups: patients with and without AKI, according to the RIFLE criteria. We compared the groups for differences in clinical manifestations and laboratory tests.

RESULTS

Patients' mean age was 58 ± 16 years, and 56.7% were female. The average length of hospital stay was 16.4 ± 12.1days. Patients with hypertension and diabetes were 35% and 21.7%, respectively. The main clinical symptoms and signs presented were: ascites (86.7%), splenomegaly (80%), hepatomegaly (63.3%) and intestinal disorders (66.7%). Current or previous history of upper gastrointestinal bleeding was found in 45% of patients, esophageal varices on endoscopy was present in 92% and periportal fibrosis on ultrasound examination in 81%. AKI incidence was 43.3% during hospital stay. Mean age and length of hospitalization were higher in the AKI group. Diuretics use such as furosemide and spironolactone, ascites and AST levels were also associated with AKI. Death occurred in five cases (8.5%); four of them in the AKI group. The classifications CHILD and MELD presented higher scores among patients with AKI (CHILD: 9.5 ± 1.5 vs. 8.4 ± 1.7, P=0.02; MELD: 19 ± 5.8 vs. 13 ± 3.9, P<0.001).

Table I. Characteristics and clinical manifestation of schistosomiasis patients with and without AKI admitted to a tertiary hospital.

	Non-AKI (N=34)	AKI (N=26)	*P* value
Age, years	54 ± 16	64 ± 16	0.02
Female	52.9%	61.5%	0.60
Time of hospitalization, days	12 ± 8	22 ± 14	0.002
Diabetes mellitus	23.5%	19.2%	0.76
Arterial hipertension	23.5%	50.0%	0.05
Systolic blood pressure (mmHg)	113.9 ± 10.8	113.4 ± 10.9	0.87
Diastolic blood pressure (mmHg)	73.3 ± 7.4	70.5 ± 5.6	0.13
Signs and symptons			
Ascites	76.5%	100%	0.008
Splenomegaly	88.9%	69.6%	0.17
Hepatomegaly	67.6%	57.7%	0.58
Upper GI bleeding	47.1%	34.6%	0.43
Esophageal varices	97.0%	92.0%	0.57
Periportal fibrosis	82.8%	79.2%	0.74
Prior splenectomy	20.6%	11.5%)	0.56
Treatment (during hospital stay and chronic use)	50.0%	92.3%	0.001
Furosemide use	58.8%	88.5%	0.01
Spironolactone use	32.4%	38.5%	0.78
Weight change > 1kg/day	26.5%	38.5%	0.40
iECA use	50.0%	76.9%	0.06
Paracentesis	41.2%	26.9%	0.28
β-blocker therapy	47.1%	50.0%	0.82
Antibiotics use			
Mortality	2.9%	15.4%	0.15

Table II. Laboratory result comparisons between schistosomiasis patients with and without AKI admitted to a tertiary hospital.

	Non-AKI (N=34)	AKI (N=26)	*P* value
Hematuria, %	21.4%	33.3%	0.36
Proteinuria, %	25.0%	45.8%	0.14
Leukopenia, %	58.8%	34.6%	0.07
Thrombocytopenia, %	70.6%	61.5%	0.58
Scr_{Adm}, mg/dL	0.7 ± 0.3	0,9 ± 0.5	0.15
Scr_{Max}, mg/dL	0.8 ± 0.3	1.6 ± 0.6	<0.001
$Urea_{Adm}$, mg/dL	37 ± 19	52 ± 40	0.09
$Urea_{Max}$, mg/dL	45 ± 29	80 ± 54	0.006
Hemoglobin, g/dL	9.7 ± 2.6	9.9 ± 1.8	0.67
Hematocrit, %	29.7 ± 7.7	29.7 ± 5.2	0.98
ALT, UI/L	34 ± 33	39 ± 20	0.54
AST, UI/L	36 ± 14	52 ± 23	0.004
Lactate dehydrogenase, UI,L	229 ± 100	258 ± 106	0.48
Alkaline Phosphatase, UI/L	150 ± 134	157 ± 86	0.84
Total bilirubin, mg/dL	1.3 ± 1.0	1.8 ± 2.4	0.28
Direct bilirubin, mg/dL	0.4 ± 0.3	0.9 ± 1.5	0.10
Indirect bilirubin, mg/dL	0.8 ± 0.8	0.9 ± 1.0	0.93
Albumin, g/dL	2.9 ± 0.6	2.7 ± 0.5	0.18
Na, mEq/L	136 ± 4.0	135 ± 3.9	0.09
K, mEq/L	4.2 ± 0.5	4.6 ± 0.7	0.05
Calcium, mg/dL	8.3 ± 0.7	8.4 ± 1.0	0.83
Albumin ascitic fluid, g/dL	0.7 ± 0.7	0.7 ± 0.4	0.99

CONCLUSION

Renal dysfunction is an important feature of schistosomiasis, which is associated with significant morbidity and possible increased mortality. Further studies are necessary to establish the mechanisms through which schistosomiasis can lead to renal dysfunction.

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