Case Report

Acute kidney injury as initial presentation of visceral leishmaniasis in a young patient- A case report

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ABSTRACT

Introduction: Visceral leishmaniasis is endemic in Somalia and in East Africa at large. Clinically, patients present with recurrent fever, weight loss, hepatosplenomegaly and pancytopenia. Sometimes, patients in low resource countries with no properly functioning primary healthcare facilities may present with complications.

Case presentation: Here, we report a case of 19 years old male patient who presented with impaired renal function. After diagnosing with VL and starting Sodium Stibogluconate, patient developed acute pancreatitis, that compelled us to shift to liposomal amphotericin B, which he responded well and finally was discharged within a good condition.

Clinical discussion: Early diagnosis and proper treatment is necessary to restore the renal function.

Conclusion: This case report elaborates some of the clinical presentations of VL, complications of treatment and encouraging physicians in endemic areas to keep VL into their list of differential diagnosis in patients with fever and hepatosplenomegaly.

1. Introductions

The protozoan Leishmania donovani causes chronic infectious disease called Visceral leishmaniasis (VL), also known as Kala-azar. It’s more prevalent in tropical and subtropical areas. leishmaniasis, mucocutaneous leishmaniasis, VL, and post-kala-azar dermal leishmaniasis are the four main clinical syndromes caused by over 20 different leishmanial species. [1]. The most common form of leishmaniasis is cutaneous leishmaniasis.VL causes about 20,000 to 30,000 deaths each year worldwide and its second-largest parasitic killer in the world after malaria [2].After the Indian subcontinent, East Africa has the highest burden [3]. This fatal parasite disease has mostly been reported in regions of southern Somalia, although data from Somalia is limited, and the exact scale of the VL burden is unknown.

In the East Mediterranean Region (EMR), leishmaniasis is a major public health concern. In 2008, 12 countries in the EMR reported 100,000 new cases of cutaneous leishmaniasis to WHO (EMR). In terms of Anthroponotic visceral leishmaniasis (AVL), Sudan and Somalia documented 4108 and 583 cases, respectively [4].

Clinical presentation depends on both the infecting species of Leishmania and the host’s immune response. Persistent fever, splenomegaly and pancytopenia are the chief characteristics of visceral leishmaniasis [5].

The microscopic detection of the parasite in patient’s tissue remains the gold standard for diagnosis. Despite splenic rupture been the most sensitive technique, lymph-node and bone aspirate can be used with lower sensitivity [6].

Renal involvement of VL is a well-known and can present as acute or chronic renal insufficiency. Here, we present the first documented and successfully managed case of acute kidney injury due to VL.

2. Case report

A 19-year-old male patient from El-Barde District, southwestern Bakool region of Somalia, presented to our hospital with a three-month history of intermittent fever, fatigue, generalized weakness and loss of appetite for one month. He took local symptomatic treatment and anti-malaria medications, but did not get any relief. The general physical examination showed a febrile patient, pulse rate of 106 beats/min, respiratory rate of 16 breaths/min and blood pressure of 125/70 mm Hg and appeared pale. Abdominal examination revealed splenomegaly and hepatomegaly. The remaining part of the examination was normal. Initial blood tests revealed WBC 1400/mm3 (normal 4000–10,000/mm3), hemoglobin 5.1 g/dL (normal 13–17 g/dL), hematocrit 16.2%

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Table 1

Summary of patient’s laboratory values before and after the treatment.

|                      | Before Treatment          | After Treatment          |
|----------------------|---------------------------|--------------------------|
| WBC 1.40 ± 4–10 × 1000/mm3 | WBC 4.07 ± 4–10 × 1000/mm3 |
| HGB 5.1 ± 13 g/dL       | HGB 9.0 ± 13 g/dL         |
| PLT 11,100–430 × 1000/mm3 | PLT 278,100–430 × 1000/mm3 |
| MCV 68.0 ± 80–100 fl    | MCV 79.3 ± 80–100 fl      |
| Creatinine 4.47 ± 0.6–1.35 mg/dL | Creatinine 0.6 ± 0.6–1.35 mg/dL |
| Urea 228 ± 10–45 mg/dL  | Urea 14 ± 10–45 mg/dL     |
| AST 345 ± 0–35 U/L      | AST 45 ± 0–35 U/L         |
| ALT 128 ± 0–45 U/L      | ALT 38 ± 0–45 U/L         |
| Albumin 2.1 ± 3.5–5.5 g/dL | Albumin 2.4 ± 3.5–5.5 g/dL |
| Calcium (Ca) 5.9 ± 8.3–10.6 mg/dL | Calcium (Ca) 8.9 ± 8.3–10.6 mg/dL |
| Potassium 6.5 ± 3.5–5.5 mEq/L | Potassium 5.7 ± 3.5–5.5 mEq/L |
| CRP 209.28 ± 0–10 mg/L  | CRP 11.97 ± 0–10 mg/L     |

WBC-white blood cells, HGB-hemoglobin, PLT-platelets, MCV-mean corpuscular volume, AST-aspartate transaminase, ALT-alanine transaminase, CRP-C-reactive protein.

Visceral leishmaniasis can present with many forms of clinical pictures, including the complications like acute kidney injury. When VL is properly treated, the renal function test resolves with no sequela.

4. Conclusion

In endemic areas, endemic parasitic infections such as VL and Malaria should be considered as a probable cause of acute kidney injury. Visceral leishmaniasis can present with many forms of clinical pictures, including the complications like acute kidney injury. When VL is properly treated, the renal function test resolves with no sequela.

Ethical approval

In our institution, Ethical approval is waived from case reports.

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None.

Author contribution

Abdirashid Hashi Mohamed- Study concept, data collection and case writing. Ahmed Muhammad Bashir-wrote an introduction, discussion and critically reviewed the case.

Registration of research studies

Name of the registry: Unique Identifying number or registration ID: Hyperlink to your specific registration (must be publicly accessible and will be checked):

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Provenance and peer review

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Declaration of competing interest

Authors declare no conflict of interest.

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