Weil's disease in a 36 years old female: a case report

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Abstract. Leptospirosis is an acute zoonotic infection, it is caused by spirochetes of the genus Leptospira, has extensive vasculitis characterizes, can usually be transmitted indirectly, per contaminated water, rarely directly, and through contact with infected animals. Leptospira bacteria commonly enter the body through the damaged skin or mucous membranes. The clinical syndromes may vary from a subclinical infection and mild febrile condition to severe clinical symptoms with jaundice and renal failure. It is the case report from a woman 36 years old with leptospirosis (Weil's disease) whose clinical manifestations included: icterus, renal failure, hemorrhagic syndrome and disturbances of consciousness. After the use of antibiotics, symptomatic and substitution therapy, all symptoms resolved completely.

1. Introduction

Leptospirosis is a rare infectious disease. It is a spirochetal zoonosis caused by Leptospira species. Human leptospiral infection results primarily from exposure to the urine of infected rats. Leptospires can contaminate humans through cuts and abrasions of the skin, through intact mucous membranes and the waterlogged skin. The disease appeared with complex clinical features varying from subclinical infection and self-limiting anicteric illness to multiple-organ failure and death. Severe leptospirosis is the same with Weil's disease which is characterized by kidney and liver failure. Antibiotics should be as soon as the diagnosis is suspected. We showed such a severe case and its management.¹,²

2. Case Presentation

A woman with 36-year-old presented to the emergency department complaining of anorexia, continuous fever, malaise, headaches, retro-orbital pain, and myalgia of 5 days evolution. She did not complain chills, vomiting, abdominal pain, cough, diarrhea neither frequency nor urgency in urination. She was also complaining of yellowish in her eyes, dark yellow color urine and reduce urine volume. She works as a housemate. The patient stated that two weeks before admission she was experienced laceration in the lower extremities while working in the puddle. A day before admission she became confused. There was no history visiting endemic malaria region. Physical examination disclosed a scleral icteric, bilateral conjunctival suffusion, and gastrocnemius pain. There was no finding hepatomegaly, and Murphy signs negative.
Vital signs in the emergency department were notable for a temperature of 39.2°C, the pulse of 98 beats/min and blood pressure of 126/73 mmHg. The patient was delirium. The ocular examination was notable for scleral icterus. The skin presented jaundiced (yellow), the lungs were clear by using auscultation, the abdomen has soft condition, gastrocnemius tenderness, and it is a pain.

First laboratory results were creatinine of 2.3 mg/dL, platelets of 58,000 cells/mm³, hemoglobin of 9.2 g/dL, white blood cell count of 11×10³ cells/mm³, total bilirubin of 25.3 mg/dL, direct bilirubin of 21 mg/dL, aspartate aminotransferase (AST) of 63 U/L, alanine aminotransferase (ALT) of 27 U/L, creatinine of 6.16 mg/dL. The urine analysis showed moderate hematuria and bilirubinuria but no proteinuria. Results of chest radiography were negative, and electrocardiography showed normal sinus rhythm at 98 beats/min.

Because of the initial presentation and the patient’s history, leptospirosis was treated with ceftriaxone 1g/day IV and supportive therapy. However, in our patient, hemodialysis was not necessary due to acute renal failure, as a resolved of renal function with conservative therapy.

The following day, serologic test results for acute hepatitis A, B and C infections were negative. Malaria rapid test was negative. Renal and abdominal ultrasonography results were normal. The diagnosis was made using IgM leptospira was positive.

On the third day, patient’s acute renal failure, hyperbilirubinemia, anemia, and thrombocytopenia getting better and consciousness improved. Laboratory finding creatinine 1.37 mg/dL, total bilirubin 15.71 mg/dL, bilirubin direct 13.85 mg/dL.

Initially, on the twelfth days, hyperbilirubinemia and renal function improved. Laboratory finding creatinine 1.1 mg/dL, total bilirubin 3.16 mg/dL, bilirubin direct 2.34 mg/dL. Urinalysis is within normal limits. Serum MAT finding elevated level serovar icterohaemorrhagiae, which confirmed the suspicion of leptospirosis. Furthermore, the patient gradually improved, and the patient was subsequently discharged.

3. Discussion

Leptospirosis has been an emerging global public health problem because of its increasing incidence in both developing and developed countries. It is a zoonotic disease caused by spirochetes belonging to different pathogenic species of the genus Leptospira. Human infection manifests from accidental contact with carrier animals or environment contaminated with leptospires.1,2

The incubation phase from the exposure to the onset of symptoms averages from 7 to 12 days. The step in the pathogenesis of leptospirosis is a penetration of tissue barriers to gain entry to the body. Chances portals of entry include the skin by cutting or abrasion the mucous membranes of the conjunctivae or oral cavity. The next step in pathogenesis is hematogenous dissemination and persist there during the leptospiemia phase of the illness.1

Most exposed individuals develop a mild symptomatic infection while a few progress to develop severe disease forms such as Weil’s disease. Severe leptospirosis is dysfunction of multiple organs including the liver, kidneys, lungs, and brain. Renal involvement varies in severity from mild non-oliguric renal dysfunction to complete renal failure, a hallmark of Weil’s syndrome. This interstitial nephritis elevated in extending and intensity during the two weeks of illness. Most patients with acute renal failure due to leptospirosis who is clear regain normal renal function. However, patients have persistent renal dysfunction associated with tubular atrophy and interstitial fibrosis on kidney biopsy. Clinical signs of bleeding are common and occur in hemostof patients with severe leptospirosis. Most bleeding manifestations are mild; it is including petechiae, ecchymoses, and epistaxis. However, some patients got severe gastrointestinal (melena or hematemesis) or pulmonary hemorrhage. Thrombocytopenia frequently appears, although usually not to the extent that would cause spontaneous hemorrhage.1,3

Leptospirosis is diagnosed by serology because the capacity for culture and PCR is limited. IgM antibodies are detectable in the blood 5–7 days after the onset of symptoms. In the microscopic agglutination test (MAT), patient’s sera are reacted with active antigen suspensions of
leptospiral serovars. After incubation, the serum/antigen mixtures are checked microscopically for agglutination, and the titers are determined.\textsuperscript{1,4}

The most case of leptospirosis are mild and resolve spontaneously. Soon initiation of antimicrobial therapy may prevent some patients from progressing to more severe disease. Empirical treatment should be as soon as the diagnosis of leptospirosis is suspected. Therapy for patients with leptospirosis severe usually involves intravenous penicillin (1.5 million units IV every 6 h), ampicillin (0.5–1 g IV qid), ceftriaxone (1 g IV daily), or cefotaxime (1 g IV qid). Ceftriaxone has been shown to be non-inferior to penicillin for serious leptospirosis Adult outpatients with early disease should receive either doxycycline 100mg orally twice per day or azithromycin 500mg orally once per day.\textsuperscript{1,4}

4. Conclusion
It is a case report of a 36 years old female with severe manifestations of leptospirosis (Weil’s disease). The diagnosis was made using Ig M leptospira and serum MAT finding elevated level serovaricterohaemorrhagiae, which confirmed a suspicion of leptospirosis. Clinical diagnosis of the disease and serologic verification of infection are fundamental prerequisites followed by antibiotic and other symptomatic therapy. Although presenting with severe symptoms, treated with antibiotics and supportive treatment, complete and recovery was achieved.

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