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Case Report

A case of Leptospirosis

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Abstract:

We describe a case of a patient with fever and jaundice initially diagnosed as a case of dengue with viral hepatitis, but his occupation, persistence of fever and jaundice, subconjunctival hemorrhage and renal involvement provide the clue to diagnose the case as Leptospirosis.

Introduction

Leptospirosis is a zoonotic disease caused by infection with Leptospira species which is prevalent in both tropical and temperate regions,[1] but more common in tropics as the pathogenic bacteria survives longer in tropical environment. Leptospira species lives in kidneys of mammalian species like rodents, cattle, sheep and pig but rodents are the most common reservoir in transmission of the disease. Humans are infected incidentally after being exposed to infected animal tissue or excreta.[2]

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 started as soon as the diagnosis is suspected.[3,4]

According to WHO guidelines treatment regimen for less severe cases is DOXYCYCLINE, TETRACYCLINE, AMPICILLIN, AMOXICILLIN, third generation cephalosporins like CEFTRIAXONE, CEFOTAXIME and QUINOLONE antibiotics.[4] Severe cases usually treated with high doses of BENZYLPENICILLIN (30mg/kg up to 1.2g IV 6-hourly for 5-7 days). Along with antibiotics supportive care should be provided.[5]

Case Presentation

A 55-year-old farmer hailing from Kapasia, Gazipur got admitted in Dhaka National Medical College Hospital with the complaints of high-grade intermittent fever for 14 days, yellowish discoloration of both eyes for the same duration. His fever was associated with anorexia, nausea and mild itching. On query he gave history of cough with expectoration of scanty mucoid sputum, initially 3 Days after development of symptoms he got admitted at Kapasia upazila health complex, where he developed right sided subconjunctival hemorrhage and his jaundice was gradually increasing, so he shifted to Dhaka for better treatment. He does not have history of hematemesis, melena or other bleeding manifestation.

On examination he was non anemic, deeply icteric, right sided subconjunctival hemorrhage was present. His pulse was 100 b/min regular. BP 90/60 mm/Hg. RR - 16 breathe/ mm, temperature was 100° F. He had no stigmata of chronic liver disease. On abdominal examination the liver was palpable 4 cm from rt costal margin, firm, non-tender, upper border of liver dullness was present in rt 5th intercostal place. After sending first line investigation, we started injection ceftriaxone 2gm twelve hourly. After five days, as fever was not responding, we started doxycycline 100mg BD along with ceftriaxone.

Repeated CBC is presented in table-I.

Table-I: CBC of patient for 4 different days.

	19.05.19	22.05.19	25.05.19	28.05.19
Hemoglobin H GB. (g/dl)	10.7	11	13	11.3
WBC/mm^3	13000	15000	19000	1000
Neutrophil (%)	78	76	74	71
Lymphocyte (%)	19	18	18	24
Monocyte (%)	2	2	3	3
Eosinophil (%)	1	3	5	2
PLT(/mm^3)	20,000	70,000	3,40,000	4,10,000
ESR (mm/1st hour)	120	95	105	85

PBF showed - Neutrophilic leucocytosis with thrombocytopenia.

Urine RME showed 7-8 pus cell and scanty albumin. His initial serotonin was 2.1 mg/dl, RBS was - 6.8 mmol/L;

His liver function test showed in table-II.

Table-II: Liver functions of patient in 3 different days

Parameters	19.05.19	27.05.19	05.06.19
S. bilirubin (mg/dl)	17	14	3
SGPT (10/L)	65	60	25
SGOT(10/L)	60	62	40
ALP (10/L)	220	120	115
Serum albumine (gm/L)	27	30	35
Prothrombin time (s)	13	13	12

His HBs Ag, Anti HEV IgM, AntiHAV Igm, Anti HEV-IgM were negative. Ultrasonography of whole abdomen showed Hepatomegaly and mild splenomegaly. Chest X - ray showed bilateral pulmonary inflammatory lesion. MT was negative.

ICT for Dengue, ICT for Malaria, ICT for Kela-azar was negative. Anti-leptospiral Ab was positive but urine for leptospira (DGI) was negative. With injection cefrtiaxone patient was not responding initially, but with addition of the doxycycline his fever subsided after 14 days of antibiotic and after around one month his jaundice subsided.

Discussion

Leptospirosis has been an emerging global public health problem because of its increasing incidence in both developing and developed countries. 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 come 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 leptospiremia phase of the illness.[6] As our patient was a farmer and had a history of working in the dirty water for long, he was a risky patient to develop leptospirosis.

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 leptospiralserovars. After incubation, the serum/antigen mixtures are checked microscopically for agglutination, and the titers are determined.[7] IgM antibody was detected in our patient.

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. We treated our case with injection cefrtiaxone and doxycycline for 14 days.

Conclusion

It was a case of a 55-year-old farmer with moderate manifestation of leptospirosis which was diagnosed with presence of IgM leptospiral antibody. Detail history taking, good clinical guess and early starting of empirical antibiotic can prevent further deterioration and complication.

Reference

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