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Case Study

Tropic Fever With Multiple Organ Dysfunction : A Case Report

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ABSTRACT

Tropic fever with multiple organ dysfunction is often seen as undifferentiated fevers with organ failure. Dengue, scrub typhus, leptospirosis, malaria, typhoid fever and some other fevers are incorporated in Tropic fever. These fevers are prevalent in tropical and subtropical regions. Symptoms of tropic fever includes sudden onset of fever, headache, chills, myalgia, transient skin rashes, conjunctival suffusion. A variety of acute insults, including sepsis, can cause progressive and potentially reversible physiologic dysfunction in two or organs or organ systems which is what is known as MODS (Multiple Organ Dysfunction Syndrome). A patient may present with overlapping symptoms due to concurrent infections with multiple etiological dysfunction can range in severity from mild to severe, and different organs may exhibit different levels of malfunction. There is no commonly accepted classification system outlines parameters of organ specific failure. To guide critical care specialists, evidence based algorithms are presented based on early empiric therapy based on clinical syndromes.

INTRODUCTION

Infectious illness can affect all age groups particularly for those living in tropical and subtropical regions¹. The critical illness known as multiple organ dysfunction syndrome (MODS) is characterized by reversible physiological

abnormalities with simultaneous dysfunction of two or more organs if this condition prolongs its stays in the intensive care units (ICU) and, in severe cases⁴, increases mortality rates (27%-100%). Mostly tropical fevers are caused by a slew of viruses, bacteria, fungus and often transmitted

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via insect bite². Insects like flies and mosquitoes are the most common disease carrier (vector). In Asian countries dengue, malaria, typhoid, influenza A, leptospirosis, rickettsiosis comprehending scrub typhus, Japanese encephalitis (JE), chikungunya are the common tropical fevers outlined¹. Many of the diseases mentioned above have no known cure, and most don't have vaccines. Multiple Organ Dysfunction Syndrome (MODS) may develop in a small percentage of these patients³. In absence of timely diagnosis and treatment facilities enteric fever is correlated with high morbidity and mortality. Scrub typhus (47.5%), malaria (17.1%), enteric fever (8%), and dengue (7%), leptospirosis (9.47%) were reported as the most prevalent tropical fevers from south India among adult patients³. The common symptoms accompanied with tropic fever are hyperthermia, body aches, joint pain, headache, rash, and fatigue. Other signs include diarrhea, vomiting, lethargy, and nausea.

We present a case report of 34 year old male patient admitted with complaints of sudden onset of hip pain followed by bilateral lower limb pain (radiating pain), yellowish discoloration over sclera & skin and decreased intake of food. Patient lives in contaminated remote area. He was diagnosed as tropic fever with multiple organ dysfunction syndrome (MODS), leptospirosis : hepatorenal involvement, acute kidney injury resolved, acute hepatitis, herpes labialis, hematoma (left inguinal region).

CASE REPORT

A 34 year old male patient was admitted with complaints of sudden onset of hip pain followed by B/L lower limb pain (radiating pain), yellowish discoloration over sclera & skin and decreased food intake. While taking interview, personal history showed that patient lives in contaminated remote area. His vitals include Temperature: (Normal), RR: (22 breath/min), Pulse: (140 beats/min), BP: (100/60 mmHg). No abnormalities

in the auscultation of lungs, peripheries warm, no abdominal tenderness.

Provisional diagnosis

1. Tropical fever
2. Sepsis
3. AKI/ Hepatitis

Laboratory Investigations

Reports showed an increase in WBC count: 20620 cells/cumm, ESR: 40 mmhr, urea: 216 mg/dL, creatinine: 5.2mg/dL, T.bilirubin: 17.44mg/dl, D.Bilirubin: 15.90 mg/dl, SGOT: 230 U/L, SGPT :530 U/L, ALP: 175 U/L, troponin I: 170.2 ng/ml, CPK: 979 ng/ml, LDH: 720 mg/dl, TRG: 225mg/dl, VLDL: 45mg/dl, CRP:79.2 mg/dl, Pro-BNP: 30,000 ng/ml and slight depletion in sodium : 134 mmol/l during the last two days of hospitalization. Lepto antibody IgM was manifested as positive.

Investigations

- **Plain CT (abdomen & pelvis):**

Mild hepatomegaly, bilateral bulky kidneys, no free fluid in abdomen or pelvis.

- **CT Thorax:**

B/L asymmetrical areas of ground glass densities with few early consolidations in lower lobe basal segment, correlating with clinical symptoms and laboratory data these findings could represent as pulmonary manifestation of leptospirosis.

- **MRI (lumbar spine):**

Primary lower lumbar canal narrowing, edema in all lumbar inter-spinal ligaments

Initially he was given with Inj. Sodium bicarbonate 500mg , Inj. Meropenam 1g , Inj. Furosemide 40mg, Inj. Theophylline 400mg, Cap. Racecadotril 100mg , Inj. Magnesium Sulphate 500mg , Inj. Amiodarone 150mg were given as STAT. As a supportive measure IV fluids were also given. During hospitalization he was treated with Inj. Meropenam 500mg TDS, Inj.Doxycycline 100mg BD, Inj.Pantoprazole 40mg OD, T. Ursodeoxycholic acid 300mg BD, Inj.Sodium bicarbonate 500mg Q6H,



Inj.Hydrocortisone 50mg Q6H, Inj.Acetyl cysteine 1.2gm BD, Syp.Potassium chloride 10ml TDS, Vitamin tablets BD, Inj. Thiamine 100mg OD, T.Cholestyramine 4gm BD, T.Befotiamine 100mg BD, T.Ademetionine 400mg BD, Oral Choline salicylate gel BD were given for local application. After 10 days of hospitalization the patient was symptomatically improved and hence discharged with Acyclovir ointment for L/A, T.Benfotiamine 100mg, T.Ademetionine 400mg, Cholestyramine sachet along with daily cleaning and dressing at local hospital with Metronidazole + Povidone iodine ointment for 5 days.

DISCUSSION

Tropic fevers are infections that are only found in tropics and subtropics. Dengue, scrub typhus, leptospirosis, malaria, typhoid fever and some other fevers are incorporated in Tropic fever . Some occurs all over the year while others are more common during the rainy and post-rainy seasons. In most patients with systemic manifestations and acute febrile illness, dengue, scrub typhus and leptospirosis to be the prevalent etiological diagnosis. Our patient initially came with complaints of sudden onset of hip pain followed by B/L lower limb pain (radiating pain), yellowish discoloration over skin and sclera, decreased food intake. The diagnosis of leptospirosis should be considered in patients presented with symptoms like headache, muscle pain, chills, vomiting, high grade fever if he is from a leptospirosis endemic area. Tropic fever is caused by a number of bacteria, viruses, and protozoa and most often get transmitted by insect bite. Leptospirosis have been associated with a broad range of clinical manifestations including mild flu like illness to very severe disease with hemorrhagic manifestations and multiorgan failure. Its widely known that tropical fevers exhibit overlapping clinical characteristics that would results in multiple organ dysfunction syndrome (MODS). Patient was suffering from

liver injury, kidney injury, hyponatremia. While previous reports have described similar complications of leptospirosis, and this case is unusual in that it involved all of these complications simultaneously. Our treatment regimen was in accordance with Centres for Disease Control and Prevention. Treatment option includes management of the symptoms associated with the tropic fevers here by prophylactically managing further wellbeing of the patient by antibiotics, liver protectant, anti-inflammatory agents, potassium supplements, antivirals, hepatoprotective agents along with vitamin & nutritional supplementation.

CONCLUSION

In certain cases leptospirosis may result in multisystemic problems and subsequent onset of MODS. The restoration on normal organ function depends on an early diagnosis, fast treatment and appropriate monitoring⁵. In regions where many diseases are highly endemic, co-infections with leptospirosis, viral infections, acute hepatitis are frequent among patients presenting with unusually atypical symptoms of severe fever⁶. It could be difficult to interpret the several positive serological results in MODS. Nonetheless, the right diagnosis is frequently reached through thorough history taking, comprehensive clinical examination, careful interpretation of laboratory results in light of the information at hand⁵. Clinicians need to be more mindful of the potential for coinfections when a patient presents with a modest unusual presentation along with an acute febrile illness and other organ dysfunctions⁶. Recognition is crucial for an early diagnosis and treatment with the right antibiotic to prevent complications and higher death rates⁷. The case study draws attention to possible issues related to multiple organ failure. Numerous organ function tests, imaging examinations, and assessments of inflammatory markers were crucial in tracking the patient's reaction to treatment and directing



therapeutic choices⁵. The knowledge acquired from this study adds to the body of knowledge and serves as a reminder of the value of thorough assessments, early identification, and interdisciplinary cooperation in the handling of these complicated cases⁷.

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