

## Hepatitis E induced severe myositis

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### Abstract

Hepatitis E is one of a rare cause of viral myositis in immunocompromised patients. Presentation in immunocompetent patient is even rarer. We present a case of 26-year-old female patient who presented with viral myositis secondary to hepatitis E with rhabdomyolysis with acute kidney injury with right leg foot drop due to compartment syndrome in an immunocompetent patient.

**Keywords:** Hepatitis E, viral myositis, Rhabdomyolysis

### Introduction

Hepatitis E is one of a rare cause of viral myositis in immunocompromised patients. The clinical manifestations ranges from myalgias to rhabdomyolysis with myoglobinuric renal failure. Here, we present a case of viral myositis with rhabdomyolysis and acute kidney injury secondary to acute hepatitis E infection in immunocompetent patient.

### Case report

A 26 years old female presented to our emergency with complaints of severe pain, swelling and rashes in bilateral lower limb, face and abdomen of 3 days and anuria of 2 days duration. The pain started on her left foot at first associated with swelling, which then progressed to her right leg and ascended upwards to involve her bilateral thighs. It was associated with erythematous, non-pruritic rashes in bilateral foot and shin of her legs (Figure 1), face and abdomen. She also complained of generalized pain all over her body. On examination, she had pitting edema in both her legs and the distal pulses were absent in her right leg. A complete neurological examination of the power and reflexes of her legs could not be done due to severe pain.

Her investigations showed hemoglobin of 8.2 mg/dl, total leucocyte count of 15,370 cells/mm<sup>3</sup> and platelets count of 122,000 cells/mm<sup>3</sup>. Her serum creatinine was 711 micromol/L, blood urea was 25.8mmol/L and serum creatine phosphokinase level of 184,700 IU/L. Her liver function test showed serum SGOT of 1600 IU/L, SGPT of 507 IU/L, total bilirubin of 24 micromol/L with direct fraction of 10 micromol/L and lactate dehydrogenase level of 6,076 IU/L. Anti nuclear antibody, VDRL,

HbsAg, anti HCV antibodies, HIV and CMV IgM were all negative. Doppler ultrasound of bilateral legs was normal. She was found to have Hepatitis E IgM ELISA positive.

During her hospital stay, hemodialysis was started. For severe pain and tense swelling of her legs, she also received 3 doses of IV methylprednisolone and IV antibiotics. Her urine output gradually increased and the pain and swelling gradually subsided. On examination after her pain had subsided, we found foot drop in her right leg (figure 2) with distal pulses intact. We treated her with foot splint and physiotherapy. Her renal function test and liver function test both normalized and her serum creatine phosphokinase level fell down to 884 IU/L. She was finally discharged after 23 days of hospital admission with a diagnosis of Viral myositis secondary to Hepatitis E with rhabdomyolysis with acute kidney injury- improved with foot drop in right leg secondary to compartment syndrome.

### Discussion

Hepatitis E is a nonenveloped RNA virus that is a member of Herviridae family. It is transmitted by fecal-oral route. The highest incidence of HEV infection is in Asia, Africa, Middle East, and Central America<sup>1</sup>.

Acute hepatitis is the most common manifestation. Hepatitis E is generally considered a self-limiting disease. However, chronic infections by HEV have been reported in immunocompromised patients, such as HIV-infected individuals<sup>2</sup>, patients with hematologic disorders receiving chemotherapy<sup>10</sup>, and solid organ transplant recipients<sup>8</sup>.

Infection by HEV in immunosuppressed patients has been related to several extrahepatic manifestations such as thrombocytopenia, red cell aplasia, muscular manifestations such as proximal myopathy, necrotizing myositis and neurological manifestations such as encephalitis, ataxia, brachial neuritis, guillain-Barré syndrome. A case of Guillain-Barré syndrome associated with severe necrotizing myositis was reported in a liver transplant patient with acute HEV infection, who recovered after treatment with ribavirin<sup>4</sup>.

Viral myositis accompanied by massive rhabdomyolysis has been reported with many viruses like cytomegalovirus<sup>7</sup>, human immunodeficiency virus<sup>6</sup> and others. However, hepatitis E causing severe myositis with rhabdomyolysis has been reported only in immunocompromised patients<sup>4</sup>. However, here we present a case of severe myositis with rhabdomyolysis with acute kidney injury in an immunocompetent patient.

The mechanism of muscle necrosis in acute viral myositis that have been proposed are direct invasion of muscle tissue by the viral agent, myotoxic cytokines released in response to viral infection<sup>5</sup> or immunologic processes induced by the viral infection, which could result in muscle damage<sup>3</sup>. Patients often present with an upper respiratory or gastrointestinal viral prodrome from one day to two weeks before the development of severe diffuse muscle pain, often involving the upper and lower extremities and the trunk, with tenderness or swelling that interferes with function. In severe cases, a compartment syndrome may develop as a result of muscle edema<sup>9</sup>. In our case as well, the patient had swelling of both legs with compartment syndrome in her right leg that resulted in foot drop.

## Conclusion

In this case report, we present a case of severe myositis with rhabdomyolysis with acute kidney injury due to hepatitis E in immunocompetent female with resolution of HEV infection and improvement in neurological and renal function.



**Figure 1. Swelling and erythematous rashes in left leg.**



**Figure 2. Foot drop in Right leg.**

**Conflict of interests: None Declared**

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