

Uncommon Cause of Acute Liver Failure with Encephalopathy

Sir,

Jaundice with encephalopathy is a common presentation of many tropical infections. The hepatic involvement in tropical infections can range from mild, transient elevation in enzymes to acute liver failure (ALF).^[1] Herein, we present a case of ALF with encephalopathy caused by scrub typhus.

A 22-year-old male, the resident of New Delhi, presented with complaints of high-grade fever for 5 days. He also had right upper quadrant abdominal pain and jaundice, which developed 2 days after the onset of fever. The patient developed altered sensorium 1-day before the presentation. On examination, the patient was unconscious with a Glasgow coma scale of E3V3M4. His temperature was 104°F. His pulse rate was 105/min and blood pressure was 120/80 mmHg. Icterus was present. Central nervous system examination revealed no neck rigidity. Bilateral pupils were normal and reactive to light and bilateral planters were flexor. Rest of general and systemic examination revealed no obvious abnormality.

Laboratory tests revealed 14.3 gm% hemoglobin and total leukocyte count of 12,300/mm³ with normal differential counts and platelets. Total bilirubin was 19.3 mg/dl. The serum aspartate aminotransferase (AST), serum alanine aminotransferase (ALT), and serum alkaline phosphatase were 954, 784, and 809 IU/L, respectively. Serum ammonia was 125 µmol/L. International normalized ratio was raised (4.2). Infectious serology and antigen testing including dengue, malaria, chikungunya, *Salmonella*, HBsAg, anti-HAV, anti-HEV, anti-HCV and HIV were negative. Blood and urine culture were sterile. Urine routine and microscopy, renal function tests were all within normal limits. Meanwhile, *Brucella* and *Leptospira* serology was sent which came out to be negative. Ultrasound of the abdomen showed normal study. Magnetic resonance imaging of the brain revealed a normal study. Weil–Felix test showed OX 19-nonreactive, OX 2-nonreactive, and OX K-reactive (1:160) [Table 1]. Rickettsial serology was sent for further confirmation which showed reactive IgM antibody against *Orientia tsutsugamushi*. Capsule doxycycline (100 mg twice a day) was added through feeding tube. Four unit fresh frozen plasma was transfused. The patient improved significantly and became conscious after 3 days of treatment with doxycycline. Liver function test returned to normal limits on the 10th day of admission [Table 2].

Classical presentation of patients of scrub typhus is high-grade fever, splenomegaly, mild increases in transaminases (<5 times the upper limit of normal), AST/ALT ratio >1, and with a normal PT.^[2] Hepatic involvement can be seen in malaria and other tropical infections such as dengue fever, typhoid fever, leptospirosis, amoebic liver abscesses, and other

Table 1: Weil-Felix test suggestive of scrub typhus

OX-19	OX-2	OX-K
Nonreactive	Nonreactive	Reactive (1:160)

Table 2: Significant fall of serum aspartate aminotransferase (IU/L), serum alanine aminotransferase (IU/L), and serum ALP (IU/L)

	Serum AST (IU/L)	Serum ALT (IU/L)	Serum ALP (IU/L)
Day 1	954 IU/L	784 IU/L	809 IU/L
Day 4	402 IU/L	316 IU/L	512 IU/L
Day 6	138 IU/L	102 IU/L	98 IU/L
Day 10	35 IU/L	51 IU/L	42 IU/L

ALT: Alanine aminotransferase; AST: Aspartate aminotransferase; ALP: Alkaline phosphatase

bacterial infections.^[3] Rash and eschar are the most common characteristic features of the infection; however, rash and eschar may not be found always.^[4]

Doxycycline (200 mg once a day for 7 days) or tetracycline (25–30 mg/kg body weight/day in divided doses every 6 h) is the drug of choice. Chloramphenicol (50 mg/kg/day in divided doses every 6 h) is an effective alternative.^[5]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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