

Fulminant hepatitis E in an infant

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ABSTRACT

Hepatitis E virus (HEV) is an enterically transmitted infection that is typically self-limited. It spreads by fecally contaminated water within endemic areas. Hepatitis E infection occurs in both sporadic and epidemic forms in developing countries. HEV infection is usually subclinical in children but in a pregnant woman, it manifests commonly as fulminant hepatic failure. A few cases of acute liver failure caused primarily by HEV infection in children have been reported. We present a case of fulminant hepatitis E in a 1-year-old child. She showed positive signs of hepatic encephalopathy, jaundice, and coagulopathy and was given symptomatic treatment for the same. She recovered due to the self-limiting nature of HEV infection and prompt symptomatic relief.

Keywords: Fulminant hepatitis, hepatitis E, infant

Introduction

Hepatitis E is the most common cause of acute viral hepatitis in India but mostly manifests as a self-limiting disease. Outbreaks are associated with rainy seasons, floods, overcrowding, inadequate sanitation, and poor personal hygiene. It affects predominantly patients between 15 and 40 years of age. In younger age group, infection is usually subclinical. Fulminant hepatic failure is seen in 4% of patients and is higher (20%) in pregnant women.^[1] Fulminant hepatic failure due to hepatitis E virus (HEV) usually occurs in young adults and pregnant woman in endemic areas, rarely in children.^[2] The main cause for fulminant hepatitis in children is found to be hepatitis A infection.^[2] The incidence of fulminant hepatic failure in children is higher in coinfection of both hepatitis A virus and HEVs rather than in single infection. According to a study conducted in India, in children between 2 months and 13 years of age, 45% of patients with acute liver failure tested positive for anti-HEV IgM antibody, of which 27.5% were dual infections of hepatitis A and E.^[3] We present hepatitis E infection in a child of 1 year of age who had acute hepatitis with acute liver cell failure and hepatic encephalopathy but recovered.

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Case Report

A 1-year-old boy presented with fever for 3 days, drowsiness for 4 days and one episode of convulsion. He also had hematemesis, ascites, and jaundice. There was no history of blood transfusion and had achieved milestones appropriate for age. He was on breast feeds and weaning diet. On examination, weight was 7.5 kg, length was 72 cm, heart rate was 142/min, and respiratory rate was 26/min. He had jaundice, anasarca. Glasgow Coma Scale was 8, and he had hypertonia with normal reflexes. He had a tender hepatomegaly and ascites. Other systems were normal. Investigations showed bilirubin of 4.1 mg/dl (direct bilirubin = 2.1 mg/dl), serum glutamic oxaloacetic transaminase of 1110 mg/dl, serum glutamic pyruvic transaminase of 2030 mg/dl, total proteins was 5.4 g/dl, and albumin of 2.6 g/dl. He had deranged prothrombin time (PT) (37.8 s) and partial thromboplastin time (39.1 s). Serum ammonia was 215 µg/dl (normal - 70–135 µg/dl). His hemogram was normal. Ultrasound abdomen showed hepatomegaly with increased hepatic echotexture and ascitis with the left pleural effusion. His hepatitis A IgM was negative, and hepatitis E IgM was positive. He was treated with lactulose, ornithine-aspartate, multivitamins, Vitamin K, dextrose, and fresh frozen plasma. He responded in next 1 week.

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Discussion

Symptoms of hepatitis E are similar to hepatitis A and include abdominal pain (35%–80% of patients), hepatomegaly (10%–85%), malaise (95%–100%), jaundice, anorexia, and vomiting.^[1] Other symptoms recorded in cases of acute liver failure in association with hepatitis infection are ascites, coagulopathy (deranged PT time), and sometimes splenomegaly.^[4] This is consistent with our patient's symptoms.

Hepatitis E mostly occurs in adults but in children the disease is subclinical; however, fatal outcomes in children due to HEV have been reported.^[5] Rare cases of chronic hepatitis with HEV infection have been reported in children who have received solid organ transplants.^[6] Studies in children from Sudan^[7] and Hong Kong^[8] have demonstrated that 12%–66% cases of acute sporadic hepatitis seeking care in hospital tested positive for IgM anti-HEV antibodies suggesting recent infection. In a study conducted by the All India Institute of Medical Sciences, New Delhi among children between 6 months and 10 years of age from rural and urban settings, 45% patients with acute liver failure had anti-HEV IgM antibody positivity.^[9] Children are thus susceptible to HEV infection, but exposure and the immune profile may be different from that of adults. In this study, infants between 6 and 12 months of age constituted 4.4% of the total number of cases who had recent HEV infection with acute liver failure.^[9] It was also found in this study that breastfeeding in infants conferred resistance toward HEV infection; in urban areas postnatally acquired anti-HEV antibodies were positive but in rural areas anti-HEV antibodies were not found in infants <12 months of age which is due to longer duration of breastfeeding in rural areas.^[9] However, our patient was on breastfeeding as well as weaning diet, yet he acquired a severe HEV infection. No specific treatment for hepatitis E exists. The treatment is mainly symptomatic as was seen in our patient.

Thus, it can be concluded that in a developing country like India even children are highly likely to contract severe infections of HEV.

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Conflicts of interest

There are no conflicts of interest.

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