



Acute Liver Failure: A Complication of Chikungunya Infection

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To the Editor: Chikungunya virus (CHIKV) is a single-stranded RNA virus that belongs to the Alphavirus, Togaviridae family. In adults, hepatic involvement has been reported with a prevalence of 7.2–14% [1]. A 1-y-old boy presented with a history of 10 d of fever and jaundice, progressing to severe liver dysfunction. Laboratory findings revealed bicytopenia, elevated liver enzymes (ALT 526 U/L, AST 704 U/L), and coagulopathy (PT 19 s, INR 1.49). Abdominal ultrasonography showed hepatomegaly. Chikungunya PCR was positive. Other causes of liver failure, acute (hepatotropic viral, dengue, malaria) and chronic (autoimmune hepatitis, Wilson's disease) were ruled out. The metabolic test sent on the 3rd day of admission (DOA) was negative. The child's condition deteriorated with stage 3 hepatic encephalopathy, necessitating elective ventilation and plasma exchange (raised INR: 10), raised ammonia (144 mcg/dl), and low fibrinogen (30 mg/dl). Despite initial improvement, the child's condition worsened, prompting a liver biopsy, which showed necrotic changes consistent with chikungunya infection. A liver transplant was performed 27 d after symptom onset. Post-transplant, child received immunosuppression and demonstrated significant improvement in clinical condition and laboratory parameters. Whole exome sequence was sent on the 6th DOA and was negative (report came after transplantation). CHIKV can cause temporary liver damage, and it persists in liver endothelial cells. Kupffer cells take up and present viral antigens, causing hepatocellular apoptosis. It causes inflammation, steatosis, and necrosis of hepatocytes due to direct cytopathic effects caused by viral proteins nsP2 and nsP3 [2, 3].

Sharma et al., Delhi, during the 2016 epidemic, described severe manifestations of chikungunya. The study mentioned 2 children with acute liver failure, but had coinfection [4]. This case highlights the potential for chikungunya virus to cause severe liver disease in pediatric patients, necessitating liver transplantation. Early recognition and prompt management are crucial for a positive outcome. This report documents the first instance of liver transplantation in a pediatric patient with chikungunya virus-induced acute liver failure.

Declarations

Conflict of Interest None.

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