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Acute Hepatitis E Virus (HEV) Infection in an HIV-Infected Person in the U.S.

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Abstract

Background—Hepatitis E virus (HEV) is an enterically transmitted cause of viral hepatitis rarely noted without international travel.

Objective—To report the first case of an HIV-infected man with acute hepatitis due to HEV infection who had not traveled outside the United States.

Keywords

Hepatitis E; viral hepatitis; HIV; immunocompromise

Case report

A 45-year-old HIV-positive male had mildly elevated aminotransaminase levels that were asymptomatic. He had a CD4 cell count of 360 cells/mm³ (31%) with an undetectable HIV RNA (<50 copies/ml) while receiving abacivir/lamivudine, atazanavir, and ritonavir. He had visited Maine and Illinois four weeks previously, but reported no exposure to sick persons, nonmunicipal water exposure, or farm animals; international travel; or medication changes. He reported anonymous sexual partners, but did not report alcohol or illicit drug use.

Over the next week, the patient developed low-grade fever, abdominal tenderness, fatigue, and diffuse myalgias. Examination revealed right upper quadrant tenderness with a palpable liver edge. Repeated laboratory testing revealed levels of alanine aminotransferase (ALT) at 1396 U/L (normal range, 0–45 U/L), aspartate aminotransferase (AST) at 810 U/L (normal range, 0–40 U/L), total bilirubin at 5.7 (normal range 0.4–2.0 mg/dl), and an alkaline phosphatase at 148 (normal range, 26–110 U/L); prothrombin, partial thromboplastin time, and albumin were normal.

Medical history included HIV infection diagnosed in 1986, herpes simplex virus 2 treated with suppressive acyclovir, and gastroesophageal reflux managed with daily ranitidine. All drug treatments, including antiretroviral therapies, were discontinued because of concern about

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potential hepatotoxic effects. ALT level peaked at 2288 IU/L and AST at 1267 IU/L during the second week of illness.

An extensive work-up for infectious causes (hepatitis A, B, C, Epstein-Barr virus, cytomegalovirus, and syphilis) and autoimmune causes of hepatitis was negative. Acute HEV was considered; blood sent to the Centers for Disease Control and Prevention was positive for HEV IgM and IgG by enzyme immunoassay and HEV polymerase chain reaction. The patient promptly restarted antiretroviral therapy and has remained healthy with normalization of liver enzymes. Blood samples six months after initial presentation were negative for HEV IgM and polymerase chain reaction, but remained positive for HEV IgG.

Discussion

Hepatitis E virus is a common cause of epidemic and sporadic hepatitis in the developing world, but few cases have been reported in industrialized countries. Only four previous nontravel cases of HEV have reported within the U.S.(1); we believe this is the first case in an HIV-infected patient.

Despite the paucity of HEV cases, the rate of seropositivity for HEV IgG antibodies is approximately 20% among U.S. blood donors.(2) The source is unclear, but increasing evidence suggests that HEV may be spread zoonotically from swine.(2) Given the high seroprevalence of HEV, it is possible that HEV represents an important cause of previously unrecognized hepatitis. As such, serologic studies for HEV should be considered in patients presenting with acute hepatitis of unclear etiology.

It is unclear if HIV infection predisposes to HEV acquisition. Studies from endemic areas have shown higher HEV seroprevalence rates in HIV-infected persons and an association between HEV seropositivity and more advanced HIV disease.(3) Whether this indicates an opportunistic infection or similar modes of transmission is unknown. One study suggested that oral-anal sexual contact may be associated with HEV acquisition among HIV-infected persons,(4) perhaps similar to that of other enteric infections (e.g., *Giardia*); however, other studies have refuted this association.

Our patient recovered uneventfully, with normalization of liver tests and disappearance of detectable HEV. Although HEV infection is usually not associated with chronic hepatitis, transplant recipients develop chronic liver disease in >50% of cases.(5) Whether our patient's rapid reinitiation of antiretroviral therapy prevented the development of chronic hepatitis is unknown. Treatment of acute HEV infections is supportive; the impact of reversing immunosuppression in preventing chronic HEV infection requires further investigation.

Conclusion

Sporadic HEV infection may occur in patients in the United States who have no history of international travel.

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