

Atypical strain of hepatitis E virus (HEV) from north India.

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Atypical strain of hepatitis E virus (HEV) from north India.

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Abstract

Hepatitis E virus (HEV) infection was detected during an epidemic in North India. Virus particles present in the stool of an acutely ill patient (YAM-67) was transmitted intravenously into rhesus monkeys (*M. mulata*) and orally to a human volunteer. Virus-like particles (VLPs) of 32-34 nm were detected in the bile of monkeys and in the stools of the human volunteer by means of solid phase immune electron microscopy (SPIEM) with acute homologous and heterologous sera. The VLPs were confirmed to be HEV by a reverse transcription polymerase chain reaction (RT-PCR). Virus-like particles from human volunteer stools were passaged further into rhesus monkeys. A bimodal rise in aminotransferase levels were observed in the animals, and liver histopathology indicated mild to severe form of hepatitis. Further, SPIEM and RT-PCR analysis in monkey bile revealed presence of virus from 15 to 45 days post-inoculation. Rechallenge of the animals 6 months after recovery with the same viral inoculum failed to produce abnormal liver function tests indicating the presence of protective immunity during this period. The VLPs in the stool from the patient (YAM-67) with epidemic hepatitis were found to retain infectivity even after several cycles of freeze-thawing and exposure at 37 degrees C for 2 days. Moreover, these VLPs from the patient, human volunteer, and monkeys did not react with an anti-HEV chimpanzee serum from NIH, Bethesda, MD. These findings indicate that this North India isolate of HEV is an atypical strain of HEV. The present study further validates that the rhesus monkey is a suitable experimental model for HEV.

References

Tandon BN, Gandhi BM, Joshi YK, Irshad M, Gupta H. Hepatitis virus non-A, non-B: the cause of major public health problem in India. Bull WHO 1985; 63: 931- 934.