

Experimental infection of laboratory rats with the hepatitis E virus

<https://www.researchgate.net/publication/14370736> DOI: 10.1002/(SICI)1096-9071(199602)48:2<121::AID-JMV1>3.0.CO;2-B · Source

Cited in:

Journal of Medical Virology 48(2):121-8, 1996

Experimental infection of laboratory rats with the hepatitis E virus

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Abstract

To confirm an earlier report that laboratory rats are susceptible to infection with the hepatitis E virus (HEV), we inoculated 27 Wistar rats intravenously with a suspension of a human stool known to contain infectious HEV. Stool, sera, and various tissues were collected from three rats each on days 0 (preinoculation) and 4, 7, 11, 14, 18, 21, 25, 28, and 35 postinoculation. Stool and sera specimens were examined by reverse transcription-polymerase chain reaction for the presence of HEV genomic sequences. Tissues were examined by light microscopy for detection of histopathological changes and by direct immunofluorescence for detection of HEV antigens. We detected HEV RNA in stools on day 7 in all three animals and in serum intermittently between days 4 and 35. We found HEV antigens in liver, peripheral blood mononuclear cells, spleen, mesenteric lymph nodes, and small intestine. We detected histopathology attributable to the inoculum in liver, spleen, and lymph nodes. The results confirm that HEV can replicate in laboratory rats and suggest new tissue sites for HEV replication.

Reference

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