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The development of chronic hepatitis in rabbits experimentally infected with Hepatitis E virus isolate from another rabbit

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Under experimental conditions, rabbit Hepatitis E virus (HEV) has been shown to spread cross-species infection in monkeys and pigs. Swine HEV isolates were also shown to infect rabbits, indicating rabbits may serve as a non-primate small animal model for HEV infection. However, the pathogenesis profile of HEV infection of rabbits has not been clearly defined. This study focused on investigating the pathogenesis in rabbits following infection with a homologous rabbit HEV isolate and comparing it to that seen following infection with a heterologous swine genotype 4 HEV isolate. Three of the four animals inoculated with the homologous rabbit HEV became infected, exhibiting an intermittent viremia, obvious fluctuations of liver function biomarkers ALT and AST, and persistent fecal virus shedding throughout the nine month duration of study. In addition, liver histopathology showed both chronic inflammation and some degree of fibrosis. Both positive and negative-stranded HEV RNA and HEV antigen were detected in liver, brain, stomach, duodenum and kidney from the necropsied rabbits. Inflammation of extra hepatic tissue was also observed. Three of the four rabbits inoculated with the heterologous genotype 4 swine HEV also became infected, showing similar levels of anti-HEV antibody to that generated following infection with the homologous virus isolate. The duration of both viremia and fecal shedding of virus was however shorter following infection with the heterologous virus and there was no significant elevation of liver function biomarkers. These results suggest that rabbit HEV infection may cause more severe hepatitis and prolong the course of the disease, with a possible chronic trend of hepatitis in rabbits.

Biography

Ling Wang completed her Ph.D at Kyoto University, Japan. Currently, she is working as a professor at the Department of Microbiology, School of Basic Medical Sciences, Peking University in Beijing of China. She has published more than 20 papers in reputed journals on HEV research.

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