

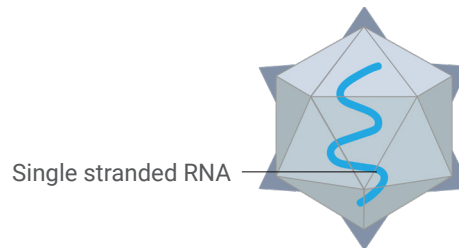
Hepatitis E virus infection

UNDERSTANDING THE PATHOGENESIS AND COURSE OF HEV INFECTION

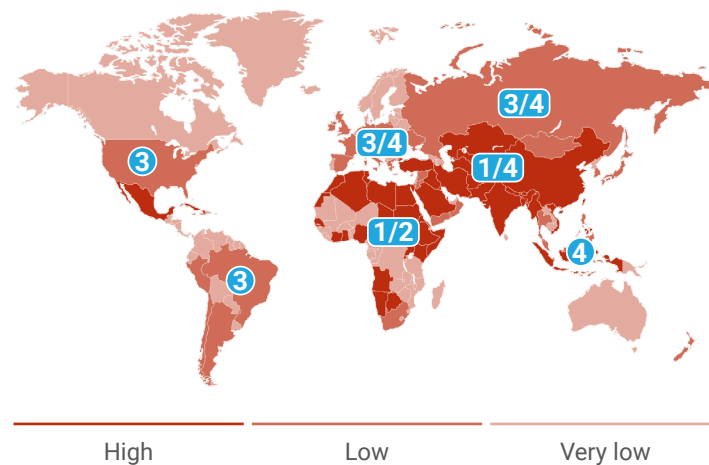
Profile

Hepatitis E virus (HEV) is a non-enveloped, single stranded RNA-virus.

Genus: Hepevirus
Family: Hepeviridae
Genotypes: 1–4



Prevalence



Transmission

The mode of transmission of HEV depends on the genotype.

Genotypes 1 and 2

Fecal-oral: consumption of contaminated food or water

Vertical: transmission from mother to child

Genotypes 3 and 4

Zoonotic: transmission from an animal host to a human, for example, through consumption of undercooked meat.

Pathogenesis

The pathogenesis of HEV is not yet completely understood. HEV replicates in the cytoplasm of hepatocytes. The presence of HEV induces

the immune system. As such, HEV itself, is not cytopathic, but rather hepatic damage is induced by cytotoxic T-cells and natural killer (NK) cells.

Clinical course

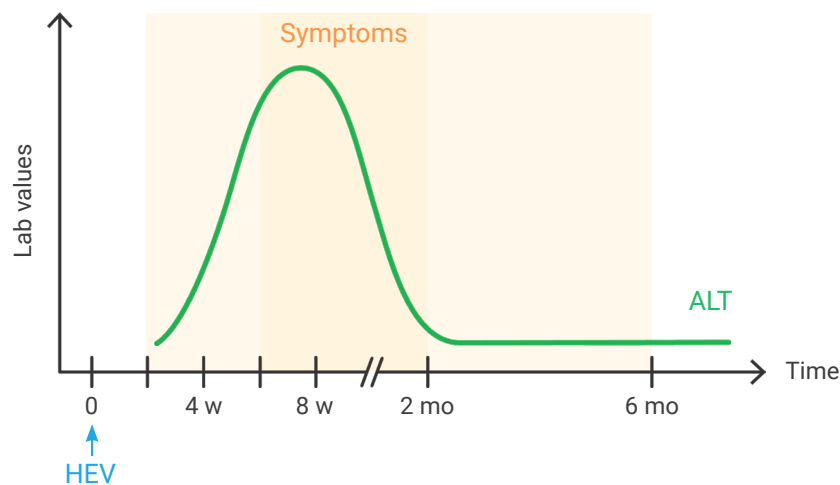
Incubation period: 2–8 weeks

Resolution: possible

Acute HEV infection

Acute HEV infection occurs when viral RNA is detectable in blood for a maximum of six months. Along with the symptoms, a significant elevation of liver enzymes is evident in the lab report, which is a sign of liver damage.

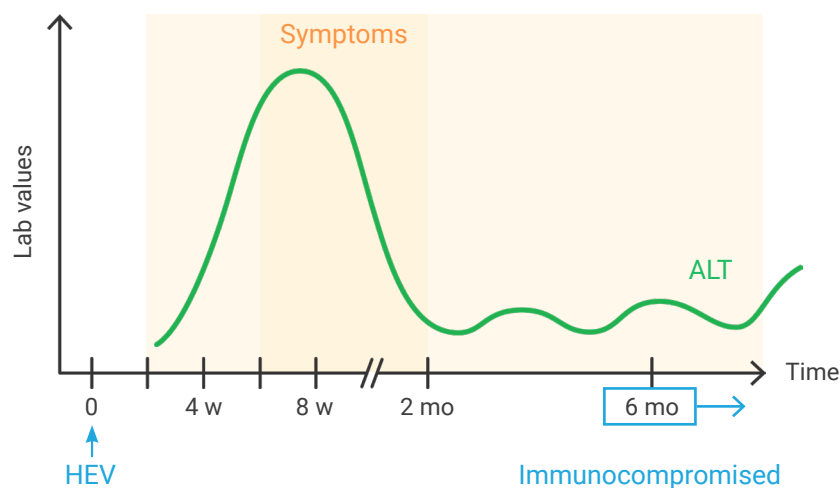
However, HEV infection is often completely asymptomatic! The vast majority of patients clear the virus spontaneously and liver enzymes decrease with convalescence. Nevertheless, there is a risk of acute hepatic failure in 0.5–4% of patients.



Chronic HEV infection

Chronic infection is defined as an ongoing infection and thus the presence of virus replication for more than six months. According to the continuing liver damage, ALT levels fluctuate.

Chronic HEV infection is a rare event and mainly occurs in immunocompromised patients, such as those who have received an organ transplant, patients suffering from HIV, or patients with hematological diseases.



In 10% of cases, chronic HEV infection leads to liver cirrhosis or liver failure. Unlike hepatitis B or C, hepatitis E does not lead to hepatocellular carcinoma.



Predictors of disease progression

Immunosuppression is the main predictor of chronification. Factors that contribute to a faster progression to cirrhosis or liver failure have not yet been identified.

HEV infection in pregnancy

HEV infections in the third trimester, especially, can lead to fulminant hepatic failure and a high maternal mortality rate of 15–25%!

In children of HEV-infected mothers, mortality is also increased in utero. Whether this is a direct result of

hepatitis E infection, or due to the mother's health complications is not clear.

Neonates can show signs of liver damage due to vertically transmitted HEV infection. However, there are no reports of cases of chronification in these children.

Further Reading

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