

## Hepatitis E virus infection

# GETTING TO KNOW HEV LAB MARKERS

### Course of infection

In order to diagnose an infection with HEV it is important to understand the course of infection. We distinguish acute from chronic infection.

#### Acute infection

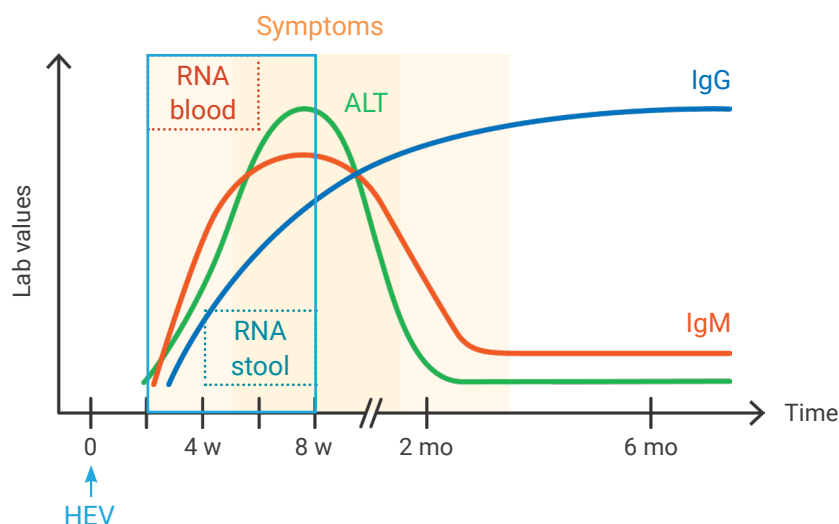
Acute infection is defined by virus clearance within six months.

Elevated alanine aminotransferase (ALT) activity levels are an unspecific marker of hepatitis.

As a correlate for the acute immune system activation, anti-HEV IgM starts rising along with liver enzymes. When symptoms first appear, IgM will be positive. An increase in anti-HEV IgG follows.

HEV RNA is detectable in stool or blood only in a short time window, soon after infection.

In immunocompetent patients, HEV infections are self-limiting. Thus, an acute infection will be resolved within six months. ALT activity levels and anti-HEV IgM drop below the level of detection. Anti-HEV IgG stays positive as a sign of a past infection. It is not clear whether IgG antibodies convey lifelong immunity to hepatitis E.



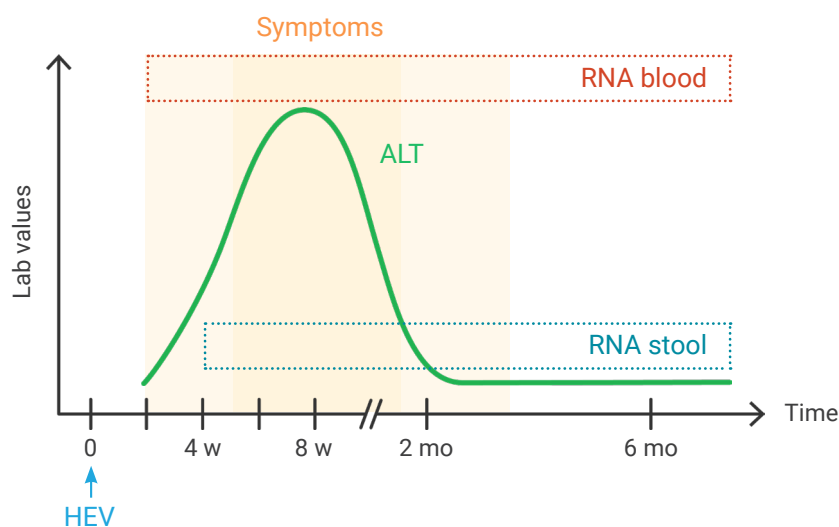
## Chronic infection

Chronic infection is defined by the persistence of viral infection for longer than six months. Chronic infection in HEV infection is a rare event and mainly occurs in immunocompromised patients.

These patients may be unable to produce antibodies to the virus. Thus, RNA measurement is necessary to diagnose an active HEV infection. Because these

patients are unable to clear the virus as quickly as immunocompetent patients, viral RNA will remain detectable in both blood and stool for much longer.

Therefore, it is important to measure HEV RNA in stool or blood in the acute as well as in the chronic setting.



## Further Reading

Mirazo, S, Ramos, N, Mainardi, V, et al. 2014. Transmission, diagnosis, and management of hepatitis E: an update. *Hepat Med.* **6**: 45–59.

Murali, AR, Kotwal, V, and Chawla, S. 2015. Chronic hepatitis E: A brief review. *World J Hepatol.* **7**: 2194–2201.

Krain, LJ, Nelson, KE, and Labrique, AB. 2014. Host Immune Status and Response to Hepatitis E Virus Infection. *Clin Microbiol Rev.* **27**: 139–165.