

Screening of blood donations for hepatitis E virus (HEV)

Hepatitis E is an infectious inflammation of the liver caused by the hepatitis E virus (HEV).

Transmission of HEV



Contaminated drinking water



HEV containing blood products



Infected pork



Fruit and vegetables

HEV variants are present in resource-limited areas, with reduced hygienic conditions, as well as industrialized countries. Transmission is mainly through contaminated drinking water, infected pork, fruit or vegetables and via HEV containing blood products.

The vast majority of acute HEV infections are asymptomatic and fewer than 1% develop symptomatic hepatitis E. However, in rare cases, acute HEV infection can progress to acute or acute-on-chronic liver failure. Furthermore, HEV gt 3 (and 4) infections can result in chronic hepatitis E in immunocompromised individuals, e.g. transplant recipients. Chronic hepatitis E can progress to liver cirrhosis, resulting in liver failure with life-threatening complications.

Currently there is no approved antiviral treatment for acute or chronic HEV infections although Ribavirin can be effective in patients with chronic hepatitis E and leads to HEV clearance in approximately 80% of treated patients. Furthermore, there is no approved vaccine for the prevention of HEV infection in Europe. Thus, preventive measures are restricted to improving hygiene, avoiding raw pork products and testing of blood donations.

Why Blood Screening?

Transfusion of blood products is a frequent, potentially life-saving medical treatment but there is emerging evidence that HEV can be transmitted by transfusion of different types of blood-derived products.

Recent studies reveal that HEV in asymptomatic blood donors in Europe is more frequent than previously assumed. Approximately 0.04-0.12% of blood donations are HEV and this is far more frequent than Hepatitis B and C or HIV-positive blood donations. While testing of blood products for these three pathogens is universally accepted, testing for HEV is still under debate in several European countries.

As HEV infection can cause severe acute and chronic liver disease, EASL recommends that blood donations should be tested for HEV RNA by nucleic acid testing (NAT) to reduce the risk of transfusion transmitted infections.

HEV screening should ideally include all blood donations but, if this is not feasible, a selective screening should be performed for blood products used in immunocompromised patients such as organ transplant recipients.