

# Hepatitis E Virus

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Hepatitis E virus (HEV), a member of *Hepeviridae* family, is the major cause of waterborne hepatitis in tropical and subtropical countries (1, 2). There are four genotypes and a single serotype of hepatitis E virus infection. Genotype 1 is usually observed in the developing countries and causes community-level outbreaks, while genotype 3 is usually reported in the developed countries and does not cause outbreaks. Identification of swine hepatitis E virus in many countries, such as Japan and the United States, and its close relationship with human HEV showed and proved that HEV is a zoonotic infection (1, 3, 4). Wild deer, domestic swine and boars are considered the reservoirs of HEV in the nature (3, 4). Transmission of this infection usually occurs via the fecal-oral route. Recently many outbreaks occurred in war zones such as Syria, Iraq and Afghanistan and in the refugee camps worldwide (1, 2, 5, 6). It is estimated that 20 million infections (3.3 million acute cases) with 56,600 deaths occur annually (2, 5, 6). Incubation period of this virus is three to eight weeks. Typical signs and symptoms of HEV are, jaundice, anorexia, abdominal pain, fever, nausea, vomiting and liver enlargement. Rarely, acute hepatitis E can lead to a fulminant hepatitis and acute liver failure and finally death. Fulminant hepatitis occurs more during pregnancy, especially during third trimester (1, 2, 5, 7). The mortality rate among pregnant females is high and sometimes can reach 15% - 20%. Diagnosis of hepatitis E infection is based on the detection of specific IgM and IgG antibodies in the patient's blood. Other tests include reverse transcriptase polymerase chain reaction (RT-PCR) to show the RNA of HEV in blood and stool. HEV E is a self-limiting disease and hospitalization is required for patients with fulminant hepatitis and it should also be considered in symptomatic pregnant females (2, 5, 7). The risk of transmission can be reduced by proper disposal systems to eliminate sanitary waste, considering hygienic practices such as hand washing with safe water, particularly before handling food, avoiding drinking water and ice of unknown origin, and the most important of all maintaining quality standards for public water supplies in the endemic coun-

tries (1, 2, 5, 7). A cell culture system is described to propagate the virus, and a very successful phase II vaccine trial should be completed (8). Finally, it should be considered that sanitation is the most important way to prevent hepatitis E virus. Standard routes for public water supplies, disposal of human waste, improved personal hygiene and sanitary food preparation are required.

## Footnote

**Authors' Contribution:** Batool Sharifi-Mood and Roshanak Sharifi wrote the paper.

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