# Hepatitis E

## **Traveler Summary**

### **Key Points**

- Hepatitis E is a viral infection occurring worldwide that is acquired mainly through the consumption of fecally contaminated water or raw or undercooked pork, pig livers, or wild game infected with the hepatitis E virus (HEV).
- Risk is increased for travelers going to countries with poor sanitation who consume fecally contaminated water, food that has
  not been hygienically prepared, or inadequately cooked pork, wild game, or shellfish.
- Symptoms include jaundice (yellow eyes and skin and dark urine), fever, influenza-like symptoms, and abdominal pain.
- · Consequences of infection rarely occur but can include pain and muscle weakness or acute liver failure.
- Prevention includes observing food and beverage precautions and hand hygiene (frequent, thorough handwashing).
- · No vaccine is available, except in China.

### Introduction

Hepatitis E, caused by HEV, is an infection of the liver occurring worldwide that is acquired through consumption of fecally-contaminated water or raw (or undercooked) pork or wild game. HEV infection causes acute hepatitis in healthy persons and (less commonly) chronic hepatitis in persons with weakened immune systems. HEV is the leading cause of acute viral hepatitis in developing countries.

### Risk Areas

Worldwide, about 20 million cases of HEV infection and 3.3 million symptomatic hepatitis E cases occur every year, with 56,000 related deaths. The highest incidence of HEV infection is in Asia, Africa, the Middle East, and Central America. Large outbreaks, often associated with flooding or monsoon, have been reported in Chad, China, India, Nepal, South Sudan, Sudan, and Uganda. Outbreaks have also occurred in areas of conflict and humanitarian emergencies, such as war zones and refugee camps.

#### **Transmission**

HEV is mainly transmitted through the consumption of fecally contaminated water, food (e.g., raw, undercooked, or inadequately cooked pork, pork liver, game [wild boar and possibly deer], or shellfish), or from mother to child during pregnancy. In rare cases, HEV transmission has been attributed to transfusion of HEV-infected blood or blood products, which may result in chronic HEV infection in persons with weakened immune systems.

### Risk Factors

Risk is increased for travelers going to countries with poor sanitation who consume food that has not been hygienically prepared (e.g., salads) or has been contaminated by infected water (e.g., mollusks) or from drinking untreated water.

Travelers going to or within China, Europe, Japan, the US and possibly elsewhere are at risk of acquiring HEV infection from eating raw or undercooked domestic pig or wild boar meat, especially liver, which is traditional in many cultures.

Pregnant women (especially in the third trimester), persons with preexisting liver disease, persons with weakened immune systems, recipients of blood transfusion in affected countries, displaced persons (refugees), pig farmers, and hunters are also at increased risk.

### **Symptoms**

Symptoms (if they do appear) develop about 15 to 60 days following exposure and include jaundice (yellow eyes and skin and dark urine), fever, influenza-like symptoms, abdominal pain, vomiting, weight loss, and aching muscles. However, most persons infected with HEV have mild symptoms or are symptom free.

### Consequences of Infection

Serious illness rarely occurs, but complications can include neurological involvement (e.g., pain and muscle weakness or paralysis) and fulminant hepatitis (acute liver failure), especially during pregnancy, resulting in fetal loss and death. Death occurs in about 20% to 25% of pregnant women if they are infected during the third trimester.

### **Need for Medical Assistance**

Travelers who develop symptoms of HEV infection during or a few weeks after travel should seek urgent medical attention (especially if the traveler is pregnant, has a weakened immune system, or a preexisting liver disease).

Most cases of HEV infection resolve spontaneously within a few weeks. Treatment is mainly supportive; ribavirin (antiviral) therapy is effective in cases of severe infections.

### Prevention

#### Nonvaccine

Observe food and beverage precautions and hand hygiene (frequent, thorough handwashing), especially after using the bathroom and before preparing or eating food; avoid eating raw or inadequately cooked pork (including traditional regional products). See *Food and Beverage Precautions*.

#### Vaccine

A vaccine has been licensed in China (not elsewhere) and is in clinical trial in the US

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