Disease Fact Sheet: Hepatitis E

Hepatitis is a general term meaning inflammation of the liver. Hepatitis is a disease that can be caused by a variety of different viruses such as hepatitis A, B, C, D and E. Since the development of jaundice is a characteristic feature of liver disease, a correct diagnosis can only be made by testing patients' sera for the presence of specific viral antigens and/or anti-viral antibodies.

Hepatitis E (HEV) was not recognized as a distinct human disease until 1980. Hepatitis E is caused by infection with the hepatitis E virus, a non-enveloped, positive-sense, single-stranded RNA virus. Although man is considered the natural host for HEV, antibodies to HEV or closely related viruses have been detected in primates and several other animal species.

How is HEV transmitted?
HEV is transmitted via the faecal-oral route. Hepatitis E is a waterborne disease, and contaminated water or food supplies have been implicated in major outbreaks. Consumption of faecally contaminated drinking water has given rise to epidemics, and the ingestion of raw or uncooked shellfish has been the source of sporadic cases in endemic areas. There is a possibility of zoonotic spread of the virus, since several non-human primates, pigs, cows, sheep, goats and rodents are susceptible to infection. The risk factors for HEV infection are related poor sanitation in large areas of the world, and HEV shedding in faeces. Person-to-person transmission is uncommon. There is no evidence for sexual transmission or for transmission by transfusion.

Where is HEV a problem?
The highest rates of infection occur in regions where low standards of sanitation promote the transmission of the virus. Epidemics of hepatitis E have been reported in Central and South-East Asia, North and West Africa, and in Mexico, especially where faecal contamination of drinking water is common. However, sporadic cases of hepatitis E have also been reported elsewhere and serological surveys suggest a global distribution of strains of hepatitis E of low pathogenicity.

When is a HEV infection life-threatening?
In general, hepatitis E is a self-limiting viral infection followed by recovery. Prolonged viraemia or faecal shedding are unusual and chronic infection does not occur.
Occasionally, a fulminant form of hepatitis develops, with overall patient population mortality rates ranging between 0.5% - 4.0%. Fulminate hepatitis occurs more frequently in pregnancy and regularly induces a mortality rate of 20% among pregnant women in the 3rd trimester.

The disease
The incubation period following exposure to HEV ranges from 3 to 8 weeks, with a mean of 40 days. The period of communicability is unknown. There are no chronic infections reported. Hepatitis E virus causes acute sporadic and epidemic viral hepatitis. Symptomatic HEV infection is most common in young adults aged 15-40 years. Although HEV infection is frequent in children, it is mostly asymptomatic or causes a very mild illness without jaundice (anicteric) that goes undiagnosed. Typical signs and symptoms of hepatitis include jaundice (yellow discoloration of the skin and sclera of the eyes, dark urine and pale stools), anorexia (loss of appetite), an enlarged, tender liver (hepatomegaly), abdominal pain and tenderness, nausea and vomiting, and fever, although the disease may range in severity from subclinical to fulminant.

Diagnosis
Since cases of hepatitis E are not clinically distinguishable from other types of acute viral hepatitis, diagnosis is made by blood tests which detect elevated antibody levels of specific antibodies to hepatitis E in the body or by reverse transcriptase polymerase chain reaction (RT-PCR). Unfortunately, such tests are not widely available. Hepatitis E should be suspected in outbreaks of waterborne hepatitis occurring in developing countries, especially if the disease is more severe in pregnant women, or if hepatitis A has been excluded. If laboratory tests are not available, epidemiological evidence can help in establishing a diagnosis.

Surveillance and control
Surveillance and control procedures should include provision of safe drinking water and proper disposal of sanitary waste monitoring disease incidence determination of source of infection and mode of transmission by epidemiological investigation detection of outbreaks spread containment

Vaccines
At present, no commercially available vaccines exist for the prevention of hepatitis E. However, several studies for the development of an effective vaccine against hepatitis E are in progress.

Prevention
As almost all HEV infections are spread by the faecal-oral route, good personal hygiene, high quality standards for public water supplies and proper disposal of sanitary waste have resulted in a low prevalence of HEV infections in many well developed societies.
For travellers to highly endemic areas, the usual elementary food hygiene precautions are recommended. These include avoiding drinking water and/or ice of unknown purity and not eating uncooked shellfish, uncooked fruit or vegetables that are not peeled or prepared by the traveller.

Treatment
Hepatitis E is a viral disease, and as such, antibiotics are of no value in the treatment of the infection. There is no hyper-immune E globulin available for pre- or post-exposure prophylaxis. HEV infections are usually self-limited, and hospitalisation is generally not required. No available therapy is capable of altering the course of acute infection. As no specific therapy is capable of altering the course of acute hepatitis E infection, prevention is the most effective approach against the disease. Hospitalisation is required for fulminant hepatitis and should be considered for infected pregnant women.

Guidelines for epidemic measures
- Determination of the mode of transmission.
- Identification of the population exposed to increased risk of infection.
- Elimination of a common source of infection.
- Improvement of sanitary and hygienic practices to eliminate faecal contamination of food and water.