Hepatitis A Virus (HAV)

Hepatitis A is caused by infection with HAV, a nonenveloped RNA virus that is classified as a picornavirus. It was first isolated in 1979. Humans are the only natural host, inactivated by high temperature (85°C), formalin, and chlorine.

HAV is a sensitive indicator of poor community hygiene.

Pathogenesis

HAV replicates in the liver. After 10-12 days, virus is present in blood and is excreted via the biliary system into the feces. Peak titers occur during the 2 weeks before onset of illness. Virus excretion begins to decline at the onset of clinical illness, and has decreased significantly by 7-10 days after onset of symptoms. Most infected persons no longer excrete virus in the feces by the third week of illness.

Clinical Features

The incubation period of hepatitis A is approximately 28 days (range 15-50 days). The clinical course of acute hepatitis A is indistinguishable from that of other types of acute viral hepatitis. fever, malaise, anorexia, nausea, abdominal discomfort, dark urine and jaundice. Clinical illness usually does not last longer than 2 months, although 10%-15% of persons have prolonged or relapsing signs and symptoms for up to 6 months. The likelihood of symptomatic illness from HAV infection is directly related to age. In children younger than 6 years of age, most (70%) infections are asymptomatic. In older children and adults, infection is usually symptomatic, with jaundice occurring in more than 70% of patients.

Epidemiology

Occurrence

Hepatitis A occurs throughout the world. It is highly endemic in some areas, particularly Central and South America, Africa, the Middle East, Asia, and the Western Pacific.

Reservoir

Humans are the only natural reservoir of the virus. There are no insect or animal vectors. A chronic HAV state has not been reported.

Transmission

Fecal-oral route by either person-to-person contact or ingestion of contaminated food or water. Sewage-contaminated or inadequately treated water, water and food and food handlers.

Communicability

Viral shedding persists for 1 to 3 weeks. Infected persons are most likely to transmit HAV 1 to 2 weeks before the onset of illness, when HAV concentration in stool is highest. The risk then decreases and is minimal the week after the onset of jaundice.

Risk Factors

- International traveler
- Male Homosexual
- Persons who use illegal drugs
- Persons who have a clotting factor disorder
- Persons with occupational risk !!!
- Persons with chronic liver disease

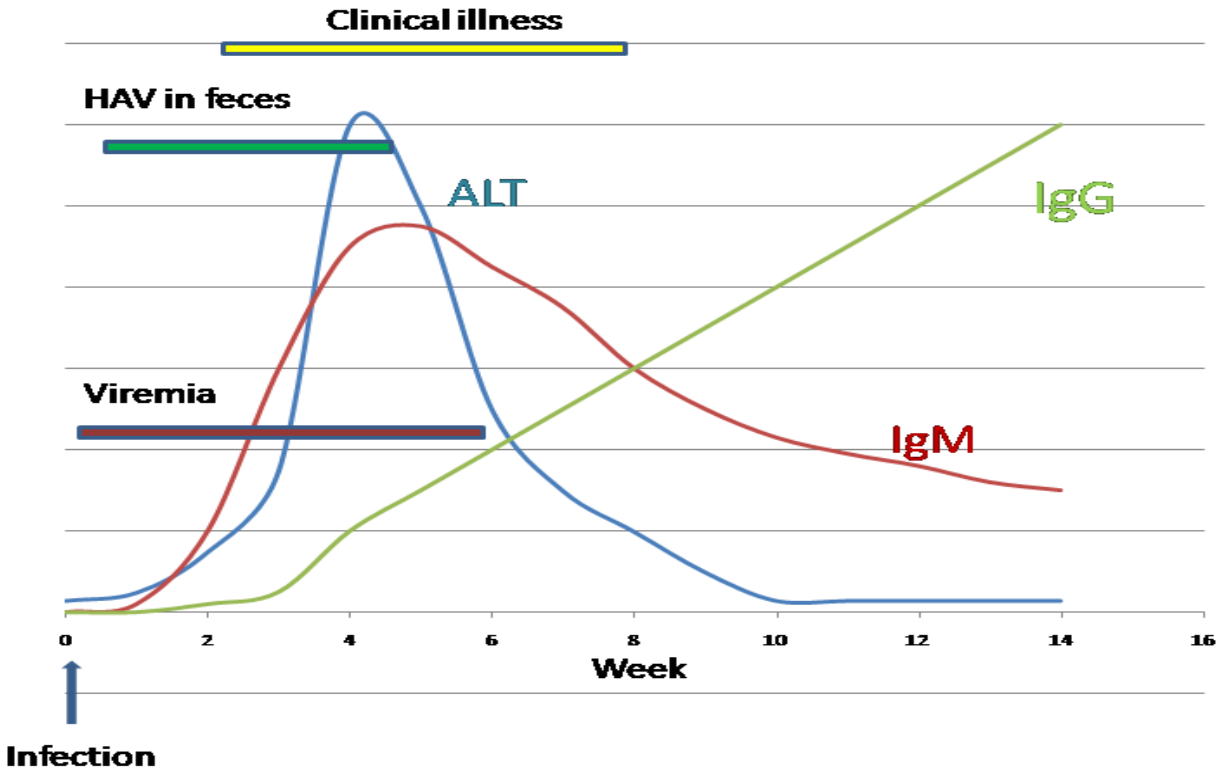
Factors affecting the severity:

Age, sex, pregnancy, Glucose-6-Phosptase deficiency.

Laboratory Diagnosis

Patients with acute hepatitis A have detectable **IgM** anti-HAV. Acute HAV infection is confirmed during the acute or early convalescent phase of infection by the presence of IgM anti-HAV in serum. IgM generally becomes detectable **5-10 days before the onset of symptoms and can persist for up to 6 months.**

IgG anti-HAV appears in the convalescent phase of infection, remains present in serum for the lifetime of the person, and it is protection against disease. The antibody test for total anti-HAV measures both IgG anti-HAV and IgM anti-HAV. Persons who are total anti-HAV positive and IgM anti-HAV negative have serologic markers indicating immunity consistent with either past infection or vaccination.



Alanine transaminase enzyme *or* ***ALT*** *It is also known as* ***SGPT***

Molecular virology methods such as polymerase chain reaction (PCR)-based assays can be used to amplify and sequence viral genomes. These assays are helpful to investigate common-source outbreaks of hepatitis A.

Control

- High standards of personal and environmental hygiene.
- Proper sewage disposal

- Safe drinking water
- In case patient in hospital feacel disposal.
- Food handlers should stop work until 3 weeks after recovery.
- Immunization. Inactivated HAV vaccine (3 doses give 10 years protection). But it is too expensive so human Immune globulin (IG) is typically used for post-exposure prophylaxis of hepatitis A in contacts during epidemics given 0.2 ml/kg intramuscular. Immune globulin is preferred for persons older than 40 years of age, children younger than 12 months of age, immunocompromised persons, and persons with chronic liver disease.

Management

There is no specific treatment for hepatitis A virus infection. Treatment and management of HAV infection are supportive.