

# Hepatitis B

## Key facts

- Hepatitis B is a viral infection caused by hepatitis B virus (HBV).
- HBV affects the liver and can cause both acute and chronic disease.
- Chronic liver infection with HBV puts people at high risk of death from cirrhosis of the liver and liver cancer.
- More than 686 000 people die every year due to consequences of hepatitis B.
- Children less than 6 years of age infected with the hepatitis B virus are most likely to develop chronic infections.
- HBV is spread by contact with blood or body fluids of an infected person.
- HBV is 50 to 100 times more infectious than HIV.
- Hepatitis B vaccine and hepatitis B birth dose is the mainstay of hepatitis B prevention.

## Disease epidemiology

- Globally, an estimated 240 million people are chronically infected with HBV.
- More than 686 000 people die every year due to complications of hepatitis B, including cirrhosis and liver cancer.
- Hepatitis B prevalence is highest in sub-Saharan Africa and East Asia.
- In India, the prevalence of hepatitis B surface antigen (HBsAg) is 3–4.2% with over 40 million HBV carriers.
- Every year over 115 000 Indians die of hepatitis B related complications.
- There are 10 known HBV genotypes, classified from A to J. The most common genotype in India is D, followed by A and C. The identification of genotypes is important in prognosis and treatment of patients.

## Transmission

- HBV is spread by contact with blood or body fluids of an infected person.
- HBV is 50 to 100 times more infectious than HIV.
- The main ways of getting infected with HBV are from mother to baby at birth (perinatal), child-to-child (especially in household settings), unsafe injections and transfusions and unprotected sexual contact.
- Sharing items such as razors or toothbrushes with an infected person, direct contact with the blood or open sores of an infected person, unsafe tattoos/piercings and exposure to blood from needle sticks or other sharps can also lead to HBV transmission.

## Symptoms

- Many persons are asymptomatic but some persons have acute illness with symptoms that last several weeks, including yellow colour of skin and eyes (jaundice), dark-colour urine, extreme fatigue, nausea, vomiting and abdominal pain.
- In some persons, the hepatitis B virus can lead to a chronic liver infection that can later develop into cirrhosis of the liver or liver cancer.
- More than 90% of healthy adults who are infected with the hepatitis B virus will recover and be completely rid of the virus within 6 months.

## Risks for chronic HBV

- Children less than 6 years of age who become infected with the hepatitis B virus are most likely to develop chronic infections.
- About 80–90% of infants and 30–50% of children infected before the age of 6 years develop chronic infections.
- Less than 5% of otherwise healthy adults who are infected will develop chronic infection.
- About 15–25% of adults who become chronically infected during childhood die from hepatitis B related liver cancer or cirrhosis.

## Diagnosis

- Laboratory diagnosis of hepatitis B infection focuses on the detection of HBsAg.
- Acute HBV infection is characterized by the presence of HBsAg and immunoglobulin M (IgM) antibody to the core antigen HBcAg.

- The presence of HBeAg during the initial phase of infection indicates that the blood and body fluids of the infected individual are highly contagious.
- Chronic infection is characterized by the persistence (>6 months) of HBsAg (with or without concurrent HBeAg).
- Persistence of HBsAg is the principal marker of risk for developing chronic liver disease and hepatocellular carcinoma (HCC) later in life.

## Treatment

- There is no specific treatment for acute hepatitis B. Care for acute hepatitis B is aimed at maintaining comfort and adequate nutritional balance, including replacement of fluids that are lost from vomiting and diarrhoea.
- Persons with chronic hepatitis B can be treated with drugs, including oral antiviral agents.
- Treatment can slow the progression of cirrhosis, reduce the incidence of hepatocellular carcinoma and improve long-term survival.
- WHO recommends the use of oral treatments tenofovir and entecavir, because these are the most potent drugs to suppress hepatitis B virus. These are simple to take (1 pill a day) and have limited side effects.
- In most people, however, the treatment does not cure hepatitis B infection. Therefore, most people who start hepatitis B treatment must continue it for life.

## Prevention

- Hepatitis B vaccine is the mainstay of hepatitis B prevention.
- Safe and effective vaccines are widely available for the prevention of HBV.
- HBV vaccination is included in the universal immunization programme for children.
- In countries where there is low or intermediate endemicity, more people in high-risk groups may acquire the infection and they should also be vaccinated. They include:
  - people who frequently require blood or blood products, dialysis patients, recipients of solid organ transplants;
  - people interned in prisons;
  - persons who inject drugs;
  - household and sexual contacts of people with chronic HBV infection;
  - people with multiple sexual partners.
- Implementation of blood safety strategies, including blood supplies based on voluntary non-remunerated blood donations, effective public education on blood donation, donor selection and quality-assured screening of all donated blood and blood components used for transfusion can prevent transmission of HBV.
- Infection control precautions in health care and community settings can prevent transmission of viral hepatitis B as well as many other diseases.
- Safe injection practices, eliminating unnecessary and unsafe injections and use of injection devices with reuse prevention feature are effective strategies to protect against HBV transmission.
- Safer sex practices, including minimizing the number of partners and using barrier protective measures (condoms) protect against HBV transmission.

## HBV vaccination in India

- Hepatitis B vaccine is the mainstay of hepatitis B prevention. WHO recommends that all infants receive hepatitis B vaccine as soon as possible after birth, preferably within 24 hours.
- The birth dose should be followed by three primary series at 6, 10 and 14 weeks to complete the schedule.
- The complete vaccine series induces protective antibody levels in more than 95% of infants, children and young adults.
- The protection lasts at least 20 years and can be lifelong.
- All children and adolescents younger than 18 years of age and not previously vaccinated should receive the vaccine if they live in countries where there is low or intermediate endemicity.
- India introduced HBV vaccine in its Universal Immunization Programme in 2002 and scaled up nationwide in 2011. In 2015, the hepatitis B vaccination coverage of children was 45% for the birthdose (within 24 h after birth) and 86% for hepatitis B third dose.

WHO organizes World Hepatitis Day on 28 July every year to increase awareness and understanding of viral hepatitis.