

Hepatitis B

What is hepatitis?

Hepatitis means inflammation of the liver. Hepatitis can be caused by medications, herbal remedies, chemicals, toxins, alcohol, autoimmune diseases, and viruses.

What is Hepatitis B?

Hepatitis B is a liver disease caused by a specific type of virus called hepatitis B virus (HBV).

Diagnosis and Monitoring

There are several blood tests that are used to find out if someone has been exposed to HBV. These tests can either indicate if someone has been recently infected referring to a short term (acute infection) or long term (chronic infection). Other type of tests called liver function tests are used to evaluate how the virus (HBV) is affecting the liver.

HBsAg.

This test identifies the hepatitis B surface antigen (HbsAg), a part of the outer coat of the virus. This test determines if someone has been exposed to HBV.

HbeAg.

This test identifies the hepatitis B e antigen (HbeAg), another part of the virus. If this antigen is found, it means the patient is contagious and can pass the virus on to someone else.

Antibody tests.

These tests can identify several different antibodies, including the hepatitis B surface antibody (HBsAb), the hepatitis B core antibody (HBcAb) and the hepatitis B e antibody (HBeAb). If these antibodies are found, it means that the immune system was able to fight off the virus and clear the infection either because the person has been vaccinated against HBV or because the body has recovered from Hepatitis B infection.

Monitoring liver enzyme

Alanine aminotransferase (ALT) and aspartate aminotransferase (AST) are liver enzymes that are normally present in the blood. A higher-than-normal amount of these enzymes in a sample of blood can be a sign of liver damage.

Symptoms

Once someone is exposed to the hepatitis B virus, there are two possible outcomes: first hepatitis B infection has a short-term phase called acute infection. The onset of symptoms ranges from 45 to 180 days (average 60-90 days). Up to 30% of people have no symptoms at all. Other people may have flu-like symptoms such as; chills, fever, fatigue, aching joints and muscles and fatigue, loss of appetite, nausea and vomiting, diarrhea, weight loss. A few people may develop jaundice - a condition in which the skin and the whites of the eyes turn yellow. Most adults, 90 to 99 percent, will recover from the acute infection without too much problems and they will have life long antibody protection (immunity) against future exposure to hepatitis B virus (HBV).

Chronic Hepatitis B

The progression from acute to chronic infection is largely influenced by the age of the person who becomes in contact with the virus. The chronic phase of the disease is determined when someone's immune system is not able to clear the virus six months later after initial exposure to HBV.

Newborns and infants are at higher risk to carry the infection beyond the acute stage of the infection. Up to 90% of infants and up to 50% of young children of 5 years of age infected with hepatitis B are not able to get rid of the virus and will develop a chronic hepatitis B infection. A smaller number of infected adults, 5 to 10 percent, will also progress to the chronic stage of hepatitis B infection.

Often individuals with chronic HBV infection have no symptoms besides bouts of fatigue, loss of appetite and nausea. Chronic hepatitis B is a serious lifelong disease that can lead to scarring tissue of the liver called cirrhosis, and liver cancer, liver failure and death. .

Treatment

The goal of treatment for chronic hepatitis B infection is to shut down the virus replication, slow down liver progression from fibrosis to cirrhosis. The decision to start treatment is based on a careful evaluation of physical health, blood tests, and liver biopsy. Be sure you see a liver specialist called hepatologist or gastroenterologist for the most current information on hepatitis B therapies.

Studies have shown that people with signs of active liver disease tend to respond better to current treatments. Individuals with elevated liver enzymes (ALT), elevated levels of hepatitis B virus (HBV DNA), positive blood tests for hepatitis B virus surface antigen (HBsAg) and hepatitis B e-antigen (HBeAg) tend to have a better antiviral response to treatment and a better outcome.

Currently Interferon alpha (Intron), Lamivudine (Epivir-HBV), and Adefovir dipivoxil (Hepsera) are three drugs licensed for the treatment of chronic hepatitis B.

Interferon (Intron)

Interferon-alpha is a cytokine, a protein messenger produced by the immune system in response to viral infections. Interferon-alpha-2b known as Intron A works by slowing down HBV replication and by improving the immune system response to fight off the hepatitis B virus. Interferon-alpha is taken as subcutaneous (under the skin) injection. The recommended dose for adults is 5 million units (MU) daily or 10 million units (MU) three times a week for four to six months. The most common side effects are flu-like symptoms, including fevers, chills, nausea and vomiting, shaking, hair thinning, fatigue and depression. These side effects may last for four to ten hours after the injection.

Acetaminophen in small amount (1000 mg) and rest may help to alleviate flu like symptoms. Interferon therapy is not for everyone. The presence of other medical conditions may affect the use of interferon alpha. Make sure you tell your doctor if you have any other medical problems, especially you have the one of the following conditions: bleeding problems, Convulsions (seizures), history of mental problems (depression), diabetes, heart disease, kidney disease, lack of blood supply to any part of the body, lung disease, thyroid disease, autoimmune disease (problems with overactive immune system). Your doctor will perform blood work at least once a month to monitor any abnormalities

within the white blood cells, the platelets, and the red blood cells. Also, Interferon should not be used by pregnant women.

Unfortunately, less than 35% of people with chronic hepatitis B are eligible to receive interferon therapy.

Epivir-HBV (Lamivudine. 3TC)

In December 1998, the FDA approved Epivir-HBV for the treatment of chronic hepatitis B. Epivir-HBV is an antiviral medication that belongs to a class of drugs called nucleoside analog reverse transcriptase inhibitors (NRTI). Epivir works by blocking the production of the reverse transcriptase enzyme that HBV need to reproduce.

Epivir-HBV have shown to lower the amount of HBV in blood and reduce inflammation of the liver. Epivir is a tablet taken by mouth with or without food. It's also available as an oral liquid for children. The dosage is 100 mg taken once day. In general, Epivir is well tolerated. The most common side effects are headache, fatigue, upset stomach, nausea, vomiting, sleeping problems (insomnia), stuffy nose. In addition, studies have implicated all nucleoside analogues including Epivir, have shown to induce liver enlargement and increase lactic acid in the blood, a condition called lactic acidosis. If you experience any of the following symptoms, upset stomach, loss of appetite, excessive tiredness, weakness, dark yellow or brown urine, unusual bleeding or bruising, flu-like symptoms, yellowing of the skin or eyes, and pain in the upper right part of your stomach call your doctor.

It's not clear how long the treatment for HBV with Epivir should last for best results. Studies have shown that the loss of HbeAg (seroconversion rate) increases to 27% after 2 years, 40% after 3 years, and 47% after 4 years of treatment in individuals with low viral load (less than 100 pg/mL). When Epivir is stopped, levels of virus (HBV) in the blood often rise again, signs of liver inflammation (elevated levels of liver enzymes) reappear and symptoms can occur again. In addition, when 3TC is used by itself as monotherapy, viral resistance can develop, and causes the drug to stop working. Studies have shown that resistance occurs approximately in 15-30% of individuals after 12 months of treatment, and approximately 50% after 3 years of treatment. Even though of the emergence of 3TC resistance, continued treatment has been associated with lower levels of the virus (HBV DNA), less liver enzymes (ALT) activity, and an improvement in liver scarring tissue. Discontinuation of Epivir is often associated by a reversion to a wild type of Hepatitis B virus and a flare of the hepatitis B symptoms.

Hepsera

September 2002, the FDA has approved a new treatment for chronic hepatitis B called Hepsera. Hepsera is oral drug that is approved for the treatment of chronic hepatitis B in adults with active HBV replication and either with persistent elevated liver enzymes (ALT or AST) or active liver inflammation. Hepsera (adeforvir dipivoxil) is a new class of antiviral drugs called nucleotide reverse transcriptase inhibitor that works by blocking the hepatitis B virus (HBV) enzyme polymerase involved in the replication of HBV. The dosage is 10mg once a day. The most common side effects are weakness, headaches, abdominal pain, nausea, flatulence, diarrhea, elevated liver enzymes, and disturbed digestion. Studies have shown that Hepsera is effective in individuals who had Epivir – resistant virus.

Transmission

HBV and HIV share similar routes of transmission. HBV transmission occurs when blood or body fluids from an infected person enters the body of another person. HBV can be spread through unprotected sex with an infected person, sharing needles or "works" when "shooting" drugs, through needle sticks, and from an infected mother to her baby during birth.

Vaccine

The good news is that hepatitis B is preventable. Hepatitis B vaccines are available for all age groups to prevent the spread of the hepatitis B virus. The vaccine enables the body to produce antibodies against Hepatitis B infection. The FDA has approved two vaccines, one called Engerix-B and the other one Recombivax HB.

The vaccines are given as a series of three (3) injections to achieve maximal protection. Make sure that you receive the 3 shots: a first dose, the second dose after one month, and the third dose six months after first dose. The vaccine is generally well tolerated.

Health care professionals that get infected through needle stick injury have access to a preventative vaccine that involves hepatitis B immune globulin (HBIG), hepatitis B vaccine, or a combination of both.

Who should be vaccinated?

People with HIV, hepatitis C or other chronic liver disease, individuals who have multiple sexual partners, newborns & children up to age 19, health care professionals exposed to blood work, injection drug users and people living in the same household with a chronically infected individual.

Prevention

Individuals should practice safe sex, use condom, not share personal care items that might have blood on them (razors, toothbrushes), consider the risks if you are thinking about getting a tattoo or body piercing, don't share needles, syringes, water, or "works" with other people.

Liver health

If it is not already done, get vaccinated against hepatitis A and hepatitis B

Drink lots of water (at least 6 to 8 glasses a day)

If you have chronic liver disease, drinking alcohol can worsen your liver condition.

Alcohol can greatly increase the risk of alcoholic and hepatitis C cirrhosis

Be aware of drugs, herbal remedies, over-the-counter medications, recreational or street drugs that can be harsh for your liver.

If you have advanced liver disease, make sure you see your doctor regularly and you may have to consider to make a few changes into your dietary intake; protein, fats, salt, iron, etc. You may want to meet with a dietitian to review your nutrition needs.

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