

HEPATITIS B

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Hepatitis B is one of the major diseases of mankind and is a serious global public health problem. It is preventable with safe and effective vaccines that have been available since 1982. Of the 2 billion people who have been infected with the hepatitis B virus (HBV), more than 350 million have chronic (lifelong) infections. These chronically infected persons are at high risk of death from cirrhosis of the liver and liver cancer, diseases that kill about one million persons each year. Although the vaccine will not cure chronic hepatitis, it is 95% effective in preventing chronic infections from developing, and is the first vaccine against a major human cancer. In 1991, the World Health Organization (WHO) called for all children to receive the hepatitis B vaccine, and 116 countries have added this vaccine to their routine immunization programmes. However, the children in the poorest countries, who need the vaccine the most, have not been receiving it because their governments cannot afford it. Fortunately, hepatitis B vaccine will soon be available in these countries with the assistance of the Global Alliance for Vaccines and Immunization (GAVI) and the Global Fund for Children's Vaccines.

What is Hepatitis?

Hepatitis means inflammation of the liver, and the most common cause is infection with one of 5 viruses, called hepatitis A,B,C,D, and E. All of these viruses can cause an acute disease with symptoms lasting several weeks including yellowing of the skin and eyes (jaundice); dark urine; extreme fatigue; nausea; vomiting and abdominal pain. It can take several months to a

year to feel fit again. Hepatitis B virus can cause chronic infection in which the patient never gets rid of the virus and many years later develops cirrhosis of the liver or liver cancer. HBV is the most serious type of viral hepatitis and the only type causing chronic hepatitis for which a vaccine is available.

Who gets Hepatitis B ?

In much of the developing world, (sub-Saharan Africa, most of Asia, and the Pacific), most people become infected with HBV during childhood, and 8% to 10% of people in the general population become chronically infected. In these regions liver cancer caused by HBV figures among the first three causes death by cancer in men.

High rates of chronic HBV infection are also found in the Amazon and the southern parts of Eastern and Central Europe. In the Middle East and Indian sub-continent, about 5% are chronically infected. Infection is less common in Western Europe and North America, where less than 1% are chronically infected.

Young children who become infected with HBV are the most likely to develop chronic infection. About 90% of infants infected during the first year of life and 30% to 50% of children infected between 1 to 4 years of age develop chronic infection. The risk of death from HBV-related liver cancer or cirrhosis is approximately 25% for persons who become chronically infected during childhood.

How do people get infected ?

Hepatitis B virus is transmitted by contact with blood or body fluids of an infected person in the same way as human immunodeficiency virus (HIV), the virus that causes AIDS. However, HBV is 50 to 100 times more infectious than HIV.

The main ways of getting infected with HBV are:

- Perinatal (from mother to baby at the birth);
- Child- to-child transmission;
- Unsafe injections and transfusions;
- Sexual contact.

Worldwide, most infections occur from infected mother to child, from child to child contact in household settings, and from reuse of unsterilized needles and syringes. In many developing countries, almost all children become infected with the virus.

In many industrialized countries (e.g. Western Europe and North America), the pattern of transmission is different. In these countries, mother-to-infant and child-to-child transmission accounted for up to one third of chronic infections before childhood hepatitis B vaccination programmes were implemented. However, the majority of infections in these countries are acquired during young adulthood by sexual activity, and injecting drug use. In addition, hepatitis B virus is the major infectious occupational hazard of health workers, and most health care workers have received hepatitis B vaccine.

Hepatitis B virus is not spread by contaminated food or water, and cannot be spread casually in the workplace.

Can chronic hepatitis B and liver cancer be treated?

Liver cancer is almost always fatal, and usually develops between 35 and 65 years of age, when people are maximally productive and with family responsibilities. The loss of a mother or a father in a developing country can devastate the entire family. In developing countries, most people with liver cancer die within months of diagnosis. In industrialized countries, surgery and chemotherapy

can prolong life up to a few years. Chronic hepatitis B in some patients is treated with drugs called *interferon* or *lamivudine*, which can help some patients. However, *interferon* or *lamivudine* therapy costs thousands of dollars and will never be available to most patients in developing countries. Patients with cirrhosis are sometimes given liver transplants, with varying success. It is preferable to prevent this disease with vaccine than to try and cure it.

How safe and effective is the vaccine?

Hepatitis B vaccine has an outstanding record of safety and effectiveness. Since 1982, over one billion doses of hepatitis B vaccine have been used worldwide. The vaccine is given as a series of three intramuscular doses. Studies have shown that the vaccine is 95% effective in preventing children and adults from developing chronic infection if they have not yet been infected. In many countries where 8% to 15% of children used to become chronically infected with HBV, the rate of chronic infection has been reduced to less than 1% in immunized groups of children.

How is WHO trying to control Hepatitis B?

Since 1991, WHO has called for all countries to add hepatitis B vaccine into their national immunization programmes. As of March 2000, 116 countries had included hepatitis B vaccine in their national programmes including most countries in Eastern and South- East Asia, the Pacific Islands, Australia, North and South America, Western Europe and the Middle East. However, many low income countries in sub-Saharan Africa, the Indian subcontinent and in the Newly Independent States do not use the vaccine. The price of the hepatitis B vaccine has been one of the main obstacles to its introduction in many of these countries.

The Global Alliance for Vaccines and Immunization (GAVI) was created in 1999. It is a unique coalition

of public and private institutions where WHO has taken a leading role. The main mission of GAVI is to vaccinate as many children as possible against vaccine-preventable diseases. GAVI has introduced a new approach to international health funding: the Global Fund for Children's vaccines (GFCV). This fund will help 74 low-income countries to reinforce their national vaccine programmes and introduce hepatitis B, yellow fever and haemophilus influenzae type b(Hib) vaccines into their national immunization programmes.

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