

MEDICAL INFORMATION ABOUT HEPATITIS B AND VACCINES

The Disease and the Risks

Hepatitis B is a viral infection caused by Hepatitis B virus (HBV) which causes death in 1-2% of patients. Most people with Hepatitis B recover completely, but approximately 5-10% become chronic carriers of the virus. Most of these people have no symptoms, but can continue to transmit the disease to others. Some may develop chronic active hepatitis and cirrhosis. HBV also appears to be a causative factor in the development of liver cancer. Thus, immunization against Hepatitis B can prevent acute hepatitis and also reduce sickness and death from chronic active hepatitis, cirrhosis and liver cancer.

Risk of Exposure

Medical and paramedical personnel are at increased risk of contracting hepatitis depending upon their degree of exposure to the blood or body fluids (e.g., urine, saliva, other body secretions) of patients infected with Hepatitis B (known or unknown). Hepatitis B is spread by direct contact of broken skin or mucus membranes with the blood or body fluids of a person who has Hepatitis B or is a carrier of the disease. Routine or frequent handling of blood or contaminated tissue products, therefore, constitutes significant risk because of the ease of transmission of the disease and the fact that many people with Hepatitis B have no symptoms and do not know they have the disease.

The Vaccines

1. **Heptavax-B**
Heptavax-B vaccine is produced from the plasma of chronic HBV carriers. The vaccine consists of highly purified, formalin-inactivated Hepatitis B antigen (viral coating material). It has been extensively tested for safety and efficacy in large scale clinical trials with human subjects. A high percentage of healthy people who receive two doses of vaccine and a booster achieve high levels of surface antibody (anti-HBs) and protection against Hepatitis B. Persons with immune-system abnormalities, such as dialysis patients, have less response to the vaccine, but over half of those receiving it do develop anti-bodies. Full immunization with three doses of vaccine over a six-month period provides immunity 96% of the individuals tested. There is no evidence that the vaccine has caused Hepatitis B. However, persons who have been infected with HBV prior to receiving the vaccine may go on to develop clinical hepatitis in spite of immunization. The duration of immunity is unknown at time.
2. **Recombivax HB**
Recombivax HB (Hepatitis B Vaccine [Recombinant], MSD) is a non-infectious subunit viral vaccine derived from Hepatitis B surface antigen (HBsAg) produced in yeast cells. A portion of the Hepatitis B virus gene, coding for HBsAg, is cloned into yeast, and the vaccine for Hepatitis B is produced from cultures of this recombinant yeast strain.

The vaccine against Hepatitis B, prepared from recombinant yeast cultures, is free of association with human blood or blood products.

A high percentage (approximately 96%) of healthy individuals vaccinated with the recommended three (3) doses achieve high levels of Hepatitis B surface antibody and protection against Hepatitis B. Immunocompromised and immunosuppressed persons respond less well than do healthy individuals.

Full immunization requires three (3) doses of vaccine over a six-month period. An initial dose, a second dose one month later, and a third dose six months after the first. There is no evidence that the vaccine has ever caused Hepatitis B. However, persons who have been infected with Hepatitis B prior to receiving the vaccine may go on to develop clinical hepatitis despite the immunization. The duration of the protective effect of the vaccine is unknown at present.

OSHA states that it is clear that HB vaccines prevent serious disease and possibly death. The vaccine is strongly recommended for all students prior to entry in the clinical practice setting.

Possible Vaccine Side Effects

The incidence of side effects is very low. No serious side effects have been reported with the vaccine. A few persons experience tenderness and redness at the site of the injection. Low grade fever may occur. Rash, nausea, joint pain, and mild fatigue have also been reported.

References

To read or receive a copy of more detailed Hepatitis B information, please view the following website for the Centers of Disease Control in Atlanta:

<http://www.cdc.gov/ncidod/diseases/hepatitis/index.htm>