

HBV: Pre and Post Exposure Prophylaxis

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HBV (Hepatitis B Virus)

- ❑ Enveloped DNA virus
- ❑ Causes blood borne infection
- ❑ Liver is the primary site of replication
- ❑ Varies in serotypes and genotypes
- ❑ Infection or immunization with one genotype generally confers immunity to all genotypes

- ❑ Highly infectious
- ❑ All HBsAg-positive persons are infectious
- ❑ Persons with occult HBV infection also might transmit infection

- ❑ Transmitted through percutaneous, mucosal, or nonintact skin exposure to infectious blood or body fluids
- ❑ Concentrated most highly in blood
- ❑ Percutaneous exposure is an efficient mode of transmission

- ❑ Approximately 95% of primary infections in immunocompetent adults are self-limited
- ❑ Chronic infection develops more frequently in immunosuppressed persons
- ❑ Chronic HBV infection can result in cirrhosis of the liver, HCC, liver failure and death

Prevention of Transmission

- Healthy life style & behavior
- Immunization (Active & Passive)

Routine practices to stop spread

- Wash hands thoroughly with soap and water after any potential exposure to blood
- Use condoms with sexual partners
- Avoid direct contact with blood and body fluids
- Clean up blood spills with a fresh diluted bleach solution
- Cover all cuts carefully

- Avoid sharing sharp items such as razors, nail clippers, toothbrushes, and earrings or body rings
- Discard sanitary napkins and tampons into plastic bags
- Avoid illegal street drugs
- Make sure new, sterile needles are used for ear or body piercing, tattoos, and acupuncture

Children and Adults Who Are HBsAg Positive:

- Can participate in all activities, including contact sports
- Should not be excluded from daycare or school participation and should not be isolated from other children
- Can share food and utensils and kiss others

Pre-Exposure Management

HepB Vaccines

- Very safe HepB vaccine is available
- Primary HepB vaccination of adults usually consists of 3 doses of 10 or 20 μg of recombinant HBsAg protein
- Administered intramuscularly into the deltoid muscle on a 0, 1, and 6 month schedule

Postvaccination Serologic Testing

- Immunocompetent person who have vaccine-induced anti-HBs levels of ≥ 10 mIU/mL 1–2 months after having received a complete, ≥ 3 -dose HepB vaccine series are considered seroprotected

- Completely vaccinated person with anti-HBs <10 mIU/mL should be revaccinated with additional 3 doses (6 doses total), followed by repeat anti-HBs testing 1–2 months after the last dose

Vaccine Nonresponders

- Vaccinated individual whose anti-HBs remains <10 mIU/mL after revaccination should be tested for HBsAg and anti-HBc to determine infection status
- Those determined not to be HBV infected (vaccine nonresponders) should be considered susceptible to HBV infection

HepB Vaccine: Long-Term Efficacy

- Anti-HBs titers decline to <10 mIU/mL in 30-50% of adults within 8-10 years after vaccination
- Exposure to HBV results in anamnestic anti-HBs response that prevents clinically significant HBV infection

- Immune memory remains intact for at least 20 years after immunization
- Chronic HBV infection rarely documented among vaccine responders
- Booster doses currently not recommended

Postexposure Management

Initial Management

- Wounds and skin sites should be washed with soap and water
- Mucous membranes should be flushed with water
- Use of antiseptics is not contraindicated

Factors to be considered

- Vaccination and antibody response status of exposed
- HBV status of source person

Vaccination and antibody response status of exposed	Treatment when source is:		
	Source HBsAg - positive	Source HBsAg- negative	Source unknown or not available for testing
Unvaccinated/ incompletely vaccinated or vaccine refusers	<p>HBIG x 1dose; initiate and complete hepatitis B vaccination series if not previously started.</p> <p>Complete remaining doses in series if previously started but not finished.</p>	<p>Initiate HB vaccine series</p>	<p>HBIG X1dose; Initiate and complete hepatitis B vaccination series</p>

Vaccination and antibody response status of exposed	Treatment when source is:		
	Source HBsAg - positive	Source HBsAg- negative	Source unknown or not available for testing
<p>Previously vaccinated:</p> <p>1. Known responder after 3 doses</p> <p>2. Response unknown after completing 3 doses</p>	<p>No treatment/No action needed</p> <p>Check anti-HBs Titer : If <10mIU/mL : HBIG x1dose and initiate and complete a 2nd HB vaccination series</p> <p>If Titer \geq10mIU/mL; No treatment/No action needed</p>	<p>No treatment/No action needed</p> <p>Check anti-HBs Titer : If <10mIU/mL ; HB vaccination x1 dose, then repeat anti-HBs testing 1-2 months later</p> <p>If Titer \geq10mIU/mL; No treatment/No action needed</p>	<p>No treatment/ No action needed</p> <p>Check anti-HBs Titer : If <10mIU/mL; HBIG x1 dose and initiate and complete HB vaccination series</p> <p>If Titer \geq10mIU/mL; No treatment/No action needed</p>

Vaccination and antibody response status of exposed	Treatment when source is:		
	Source HBsAg - positive	Source HBsAg- negative	Source unknown or not available for testing
Known non- responder (after completing 6 doses of HB vaccine)	HBIG x 2 doses , preferably (separated by 1 month)	No treatment/ No action	If known high-risk source, treat as if source were HBsAg positive

Hepatitis B immune globulin; dose is 0.06 ml/kg intramuscularly.

Perinatal Transmission

- Without postexposure prophylaxis, approximately 40% of infants born to HBV-infected mothers will develop chronic HBV infection

Prevention of Perinatal Transmission

- Identifying HBV-infected pregnant women by universal screening program
- Maternal antiviral therapy during pregnancy if indicated
- HBIG & HB vaccine for newborn within 12 hours of birth

THANK YOU