Hepatitis B Vaccination Recommendations of Healthcare Workers and Non-responders




Weekly Scientific Meeting

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Hepatitis B Vaccine

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Vaccine Brands

- Recombivax
- Engerix - B
- Pediarix - DTaP, Hep B, IPV
- Twinrix - Hep A, Hep B

Efficacy

- 95%

Duration of Immunity

- 20 years or more

Booster

- Not routinely recommended

Vaccine Schedule

Infants:

- 3 Doses (birth,1-2 mo., 6-18 mo.)

Adolescents/Adults:

- First injection
- Second injection – At least one month after the first dose
- Third Injection – Six months after the first dose

Occupational Risk

- Many healthcare personnel received the series in infancy or as an adolescent with no post vaccine serologic testing (PVST).
- The CDC recommends the evaluation of healthcare personnel for HBV protection at entry or hire dependent upon occupational risk.
- Those who require vaccination require *evidence of detectible antibodies.*

Showing Detectible Antibodies

- ***What if I wasn't tested after vaccination?***
- **Without post vaccination testing 1 to 2 months after completion of the series:**
  - True vaccine failure (i.e., no initial response)
  - Have anti-HBs that has waned to below a level detectable by the test.
- **60% of people vaccinated lose detectable antibodies (but not protection) 9 to 15 years after vaccination.**

Step 1: The Challenge Dose

- **Previously vaccinated health care personnel for whom pre exposure evaluation fails to detect protective anti-HBs should receive a "Challenge dose" of hepatitis B vaccine to assess protection, which will be indicated by a rise in anti-HBs, or "memory" response to vaccine antigen.**

- **Those who respond to the challenge dose do not require additional management, *even if exposed.***

Step 2: The 1st series

- **Health care personnel who do not respond to the challenge dose should complete revaccination (3 dose series)**

- **They should be tested for anti-HBs 1 to 2 months after completion of the third dose.**

- **Those who respond to the 1st series do not require additional management, even if exposed.**

Step 3: The 2nd series

- **Persons who do not respond to the first series of hepatitis B vaccine should complete a second three-dose vaccine series. The second vaccine series should be given on the usual 0, 1, 6-month schedule.**
- **Healthcare personnel and others for whom post vaccination serologic testing is recommended should be retested 1 to 2 months after completion of the second vaccine series.**
- **Those who respond to PVST after the 2nd series do not require additional management, even if exposed.**

Non-responders

- **Persons who fail to develop detectable anti-HBs after six doses should be tested for HBsAg.**
- **Those who are found to be HBsAg positive should be counseled accordingly.**
- **Persons who fail to respond to two appropriately administered three-dose series, and who are HBsAg negative should be documented as a non-responder.**
- **These persons should be considered susceptible to HBV infection and should be counseled regarding precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to HBsAg-positive blood**

Vaccine Nonresponse

- **Factors associated with nonresponse:**
  - Older age
  - Males
  - Obesity
  - Smoking
  - Chronic illness
- **Fewer than 5% of persons receiving six doses of hepatitis B fail to develop detectable anti-HBs antibody.**
- **Chronic infection with hepatitis B.**

Conclusion

- **The CDC recommends Hep B vaccination and detectible anti-HBs for healthcare workers.**
- **Documentation of *immunity* does not require further action even if the individual is exposed.**
- **PVST should be completed 1 to 2 months after completion of the third dose.**
- **Each facility should maintain a policy regarding non-responders and manage those individuals based on their occupational risk.**
- **Non responders must be treated with PEP (HBIG).**
- **Hep B vaccine and HBIG is available if needed.**

Reference

Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Hamborsky J, Kroger A, Wolfe S, eds. 13th ed. Washington D.C. Public Health Foundation, 2015.