

Vaccine
Preventable
STI's

Vaccine Preventable STI's

Today we will discuss

- x HPV, Hepatitis B, Hepatitis A
 - x Epidemiology
 - x Clinical presentation
 - x Vaccines and vaccination schedule
 - x Testing



1.
HPV

Human Papilloma Virus

80%

Of sexually active adults in the U.S. have been exposed to genital HPV types.



Human Papilloma Virus

- x DNA virus transmitted by unprotected penetrative intercourse or skin-to-skin physical contact with infected area
- x Prevalence of infection peaks during adolescence and young adulthood (20-24 year olds)
- x 80% of sexually active adults have been exposed to genital HPV types
- x HPV-6, -11 cause >90% of genital warts
- x HPV-16, -18 cause 70% of cervical cancers, 90% anal cancers
- x HPV causes 70% of oropharyngeal cancer



HPV Vaccine

- x 2 licensed vaccines:
 - x HPV-16, 18 (Cervarix, GlaxoSmithKline)
 - x HPV-6, 11, 16, 18, 31, 33, 45, 52, 58 vaccine (Gardasil 9; Merck and Co., Inc.)



HPV Vaccine Schedule

- x AAP recommendations: Start the series between age 9 to age 12
- x ACIP recommendations: Start the series between 11 to age 12 but can start at age 9. Can give through age 26 years old if unvaccinated.
- x For age 9-14: give 1st dose, then 2nd dose 6 months later. No need for 3rd dose (with exceptions).
- x For age 15+, give 1st dose, then 2nd dose 1-2 months later, then 3rd dose within 6 months after 1st dose.





Ages 9 through 14

Dose 1: Give first shot

Dose 2: Give second shot 6 to 12 months after the first dose



Ages 15 through 26

Dose 1: Give first shot

Dose 2: Give second shot 1-2 months after the first dose

Dose 3: Give third shot 6 months after the first dose

The minimum interval between the first and second doses of vaccine is 4 weeks. The minimum interval between the second and third doses of vaccine is 12 weeks. The minimum interval between the first and third doses is 5 calendar months.⁶

Exceptions:

- x The following individuals will still require dose #3 even if series initiated prior to age 15:
 - x Lymphocyte Ab deficiencies
 - x T lymphocyte defects
 - x HIV
 - x Malignant neoplasm
 - x Transplant history
 - x Autoimmune disease
 - x Immunosuppressive therapy



HPV Testing

- x Cytology (Pap testing)
- x HPV viral nucleic acid (DNA or RNA)
- x Following cervical cancer screening guidelines

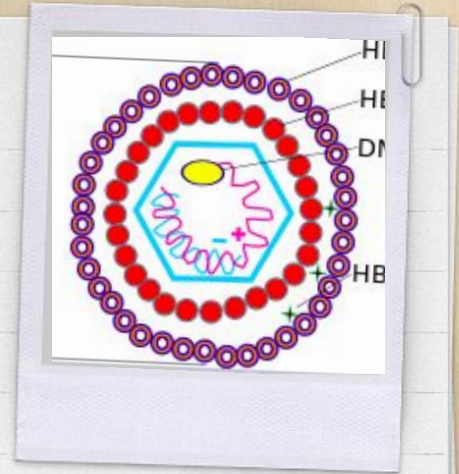


2. HBV

Hepatitis B

Hepatitis B

- x Partially double-stranded DNA virus
- x May be transmitted through sexual or intimate contact specifically through infected bodily fluids and/or blood
- x Other modes of transmission: perinatal exposure, contaminated needles
- x Risk factors for sexual transmission: having unprotected sex with an infected partner or with more than one partner, and history of other STI, anal intercourse



HBV Complications

- x Acute or fulminant hepatitis
- x Chronic hepatitis (more likely if infected perinatally and <1 year old)
- x Hepatocellular carcinoma
- x HBV-related polyarteritis
- x Nephropathy or glomerulonephritis
- x Aplastic anemia



Likelihood of symptomatology

1%

Of infants <1 year old

5–15%

Of children 1–5

30–50%

Children 5+



HBV Vaccine

- x Vaccine schedule for infants*** (and young adults/adolescents):
 - x At birth (0), 1 (or 2), 6 months
- x Vaccine in the U.S. have a 90-95% efficacy for prevention

***Infants must be
>2000g



HBV Immunoprophylaxis

HBIG provides 3-6 months of protection

- x Indicated in infants (regardless of weight) born to women positive for both HBsAg and HBeAg (along with HBV vaccine). Give within 12 hours of birth.



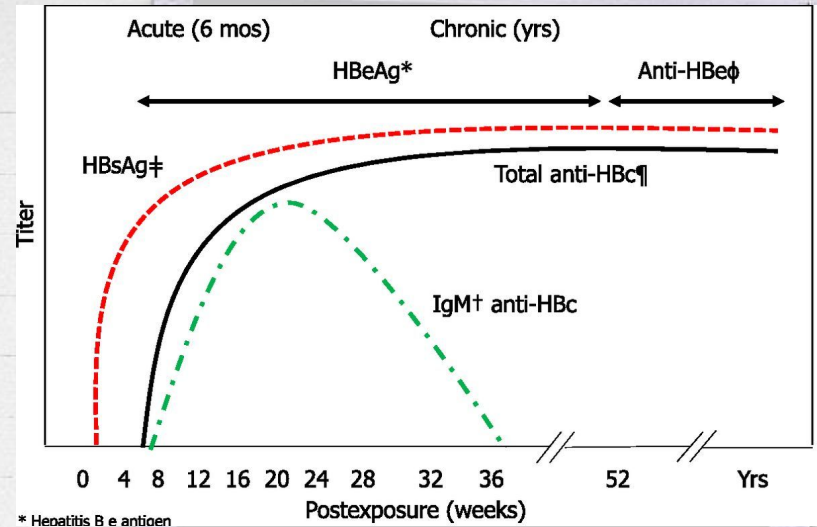
HBV Postexposure Management

- x First step: measure anti-HBs
 - x If <10 mIU/mL \rightarrow give 1 dose of Hep B vaccine and remeasure \rightarrow if <10 \rightarrow give 2 doses Hep B vaccine
 - x If nonresponder after 6 doses \rightarrow give HBIG x2
 - x If needs 3 doses \rightarrow HBIG
- x For unvaccinated/incompletely vaccinated \rightarrow HBIG and vaccine series



Testing for Hepatitis B

- x Acute infection: +HBsAg, +anti-HBc (total), +IgM anti-HBc
- x Immunization: +HBsAg
- x Chronic infection: +HBsAg, +anti-HBc (total)



3.

HAV

Hepatitis AB

Hepatitis A

- x Nonenveloped, positive-sense RNA virus
- x Transmitted via fecal-oral route
- x Asymptomatic commonly in <6 years old
- x Self-limited illness, symptoms last <2 months
- x Symptoms: jaundice (70%), nausea, abdominal pain
- x Fulminant hepatitis is rare, but common in those with underlying liver disease
- x Risk factors: close personal contact with HAV infected person, international travel, recognized foodborne outbreak, MSM, use of illegal drugs



10-15%

Of people may have prolonged or relapsing disease lasting 6 months.



HAV Immunoprophylaxis

- x Preexposure prophylaxis for travelers to countries with high/intermediate Hep A endemicity:
 - x <12 mos old: IGIM
 - x <12 mos - 40yo: Hep A vaccine
 - x 41+: Hep A vaccine +/- IGIM
- x Postexposure (if within 2 weeks): IGIM for <12 mos old, Hep A vaccine for <12 mos-40yo, IGIM for 41+



HAV Vaccine Schedule

- x Recommended vaccine schedule:
 - x For age 12 months and older: 1st dose, then 2nd dose 6-12 mos later
- x Recommend routinely for children 12-23 months, people traveling to high endemicity region, close contacts of newly arriving international adoptees, MSM, IV drug users, occupational exposure (handlers of primates), people with chronic liver disease.



References

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Thanks!