

APRIL 2007

Viral Hepatitis and HIV Co-Infection

Many individuals infected with HIV are also co-infected with either hepatitis B virus (HBV) or hepatitis C virus (HCV). Studies have indicated that the prevalence of HBV infection among HIV-positive individuals is ten times greater than among the general population¹ and approximately one-third of persons living with HIV in the U.S. are co-infected with HCV.² Recent enhanced hepatitis outreach and awareness efforts have resulted in many persons living with HIV/AIDS learning of their co-infection with HBV or HCV.

- 4.1 million Americans have ever been infected with HCV; 3.2 million Americans are chronically infected.
- One-third of the 900,000 HIV-positive people in the U.S. are co-infected with HCV.²
- 51,000 new HBV infections occurred in the U.S. in 2005.³
- 1.25 million Americans are living with chronic HBV infection.
- HIV infected individuals have a ten times greater chance of being infected with HBV.¹
- HBV infection among men who have sex with men (MSM) approaches ten percent.¹

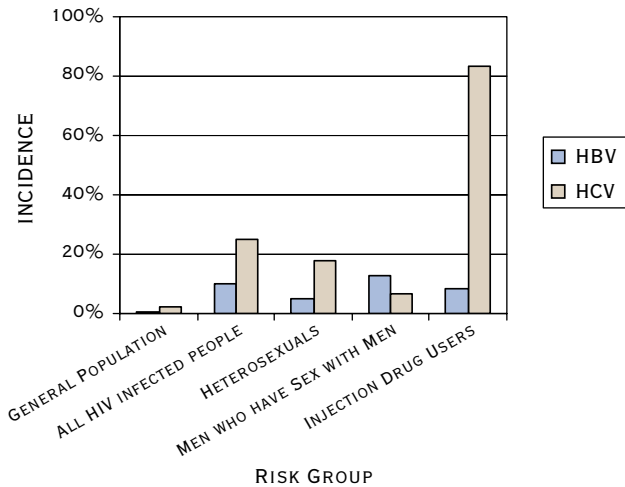
POPULATIONS AT RISK

Persons at risk of HIV infection significantly overlap with those at risk for HBV or HCV due to the ways in which these viruses are transmitted. In developed nations,

QUICK FACTS ABOUT HIV, HEPATITIS B AND HEPATITIS C

	HIV	HBV	HCV
What is it?	The human immunodeficiency virus (HIV) is the virus that causes AIDS	The hepatitis B virus is a viral infection that attacks the cells of the liver	The hepatitis C virus attacks the liver, similar to HBV, but is more likely than HBV to cause chronic infection
How is it transmitted?	When infected blood, semen or vaginal secretions enter the body of an uninfected person	When infected blood, semen or vaginal secretions enter the body of an uninfected person	HCV is transmitted by direct contact with infected blood
How is it spread? Unprotected sex, sharing needles, perinatally	Unprotected sex, sharing needles, perinatally	Unprotected sex, sharing needles, needlesticks/sharps exposure, perinatally	Sharing needles, needlesticks/sharps exposure, perinatally (the blood supply has been screened since 1992)
What happens?	HIV attacks the immune system, affecting its ability to fight off infections and cancer	Most HBV infections are cleared, if not, chronic HBV may develop and lead to liver failure, liver cancer or cirrhosis	Most persons infected develop chronic HCV, which can lead to liver disease. HCV is the number one reason for liver transplants
What treatment is available?	Drug treatments are available to slow the progression to AIDS and to treat associated infections	Antiviral drugs are available to slow the reproduction of HBV	Antiviral drugs are available to treat chronic HCV infection. Some patients clear the virus
Is there a vaccine? No	Yes	No	No
Yes/No. Not all	that are treated	clear the virus	Is there a cure? No

INCIDENCE OF CHRONIC HBV AND HCV CO-INFECTION AMONG HIV-POSITIVE INDIVIDUALS IN THE U.S., BY RISK CATEGORY



Source: Alter, MJ. (2006). Epidemiology of viral hepatitis and HIV co-infection. *Journal of Hepatology* 44: S6-S9.

HBV and HIV infections are most frequently acquired through sexual exposure or injection drug use; while HCV/HIV co-infection is primarily acquired through injection drug use.

The incidence of HBV and HCV are relatively low in the general population. However, rates of infection increase among people with HIV/AIDS, and these rates increase even further among subpopulations of people with HIV/AIDS. Chronic HBV is present in 6-14 percent of people with HIV/AIDS, 4-6 percent of heterosexuals, 9-17 percent of MSM, and 7-10 percent of injection drug users. HCV infection is present in 25 percent of people with HIV/AIDS, 72-95 percent of injection drug users, 1-2 percent of MSM and 9-27 percent of heterosexuals.⁴

THE INTERACTION OF HIV WITH HEPATITIS B AND C

HBV/HIV and HCV/HIV co-infection pose challenges in the prevention, treatment and management of these

diseases. HIV infection increases the risk of developing chronic HBV and HBV may accelerate the progression of HIV. Co-infection increases the severity of these diseases based on the ways they interact.

- HIV has been shown to contribute to the progression of cirrhosis, liver failure and liver cancer.
- HCV-related liver disease progresses more rapidly in persons co-infected with HIV.
- Due to the potential complications between the two viruses, HCV is considered an opportunistic infection in persons living with HIV.
- Additional liver damage due to the toxicity of some HIV medications is a particular threat to co-infected individuals.

VACCINATION

Because of the complications due to co-infection, adults at risk for HIV should be vaccinated for the hepatitis A and B viruses. High-risk adults account for more than 75 percent of all new cases of HBV infection each year.⁵ Despite the CDC's recommendations to vaccinate high risk adults and the cost effectiveness of vaccination, actual vaccination rates remain modest, and persons living with HIV remain unvaccinated and susceptible to disease. One study observed HIV-positive patients in care for a three year period, and found a prevalence of chronic HBV infection of 7.6 percent compared to 0.4 percent in the general population.⁶ The CDC's Immunization Services Division works to provide services to persons at risk for infection, including HAV and HBV vaccination.

THE RYAN WHITE PROGRAM AND CO-INFECTION

The Ryan White Program provides care, treatment and support services to people living with HIV/AIDS. The Ryan White Program can provide services to those that are co-infected, although there are challenges in terms of sufficient provider knowledge and patient education. The Ryan White Program's AIDS Drug Assistance Program (ADAP), which is administered by the states, provides access to HIV-related medications, including⁷:



- HCV treatments: covered by **25** states.
- HBV treatments: covered by **46** states; of those 10 report covering three or more HBV drugs.
- Hepatitis A and hepatitis B vaccines: covered by **21** states.
- HCV diagnostics (screening, qualitative and HCV RNA, CV genotypic tests): covered by **3** states.

To strengthen the ability to prevent and treat co-infection, resources are needed for the programs that address HIV, HBV, and HCV. In particular, additional funds are needed to support the care of individuals co-infected with HIV and HBV or HCV and for ADAPs to include hepatitis B and C drugs on formularies and to cover hepatitis A and B vaccines. In addition, specific guidance from the Health Resources Service Administration (HRSA) is needed for Ryan White Program grantees and providers. Federal leadership and guidance is needed for states and localities to prevent, manage and control hepatitis B and C.

- ¹ Soriano, V. (2005). Care of patients with chronic hepatitis B and HIV co-infection: recommendations from an HIV-HBV international panel. *AIDS*, 19(3): 221-240.
- ² The Centers for Disease Control and Prevention. (1998). Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-related Chronic Disease. *MMWR*. 47(No.Rr-19):1-39.
- ³ Centers for Disease Control and Prevention. Disease Burden from Hepatitis A, B and C in the United States. Retrieved February 14, 2006 from http://www.cdc.gov/ncidod/diseases/hepatitis/resource/dz_burden02.htm.
- ⁴ Alter, MJ. (2006). Epidemiology of viral hepatitis and HIV co-infection. *Journal of Hepatology* 44: S6-S9.
- ⁵ Goldstein, ST, Alter, MJ, Williams, IT, Moyer, LA, Judson, FN, Margolis, HS. (2002) Incidence and risk factors for acute hepatitis B in the U.S., 1982-1998: implications for vaccination programs. *J Infect Dis.*185:713-9.
- ⁶ Kellerman, SE., Hanson, D., McNaghten, AD, Fleming, P. (2003). Prevalence of Chronic Hepatitis B and Incidence of Acute Hepatitis B Infection in Human Immunodeficiency Virus-Infected Subjects. *Journal of Infectious Disease* 188: 571-577.
- ⁷ Kates, J., Penner, M., Crutsinger-Perry, B., Davis, C., Ginsburg, B, Seegers, A. (2007), N. (2005). National ADAP Monitoring Product Annual Report.





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