Committee on Oversight and Government Reform, Chairman Henry A. Waxman

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Post-Exposure Prophylaxis

Administered shortly after exposure to HIV, post-exposure prophylaxis (PEP) antiretroviral drugs can help reduce the risk of HIV infection. This week's HIV/AIDS Today summarizes the clinical recommendations and research on HIV post-exposure prophylaxis.

HIV RISK EXPOSURES

There are certain categories of HIV exposure for which PEP may be appropriate. Individuals are deemed to be at significant risk of HIV infection if they are exposed to the virus through sexual contact with an HIV-positive partner, sharing injection drug use equipment with an infected person, or through an occupational hazard, such as a medical worker accidentally being stuck by a needle used on an infected person.[i]

The estimated per-act transmission risk from unprotected exposure to HIV is relatively low, but there is significant variation. The risk of transmission through an accidental needlestick with a needle used on an HIV-positive patient is estimated to be 0.33 percent. The estimated per-act risk of transmission through needle sharing with an HIV-positive injection drug user is 0.67 percent.[ii]

PROTOCOL

Post-exposure prophylaxis, or PEP, is a 28-day course of three different antiretroviral drugs that can reduce the risk of HIV infection if taken immediately following a possible exposure. Because the drugs are more effective the sooner they are administered, PEP is recommended within 72 hours of exposure. PEP is not typically recommended beyond this time window, as the risks associated with the antiretroviral drugs likely outweigh the benefits they may provide by that point.[iii]

EFFECTIVENESS OF PEP

No randomized controlled trials of PEP have been conducted, for both ethical and logistical reasons. Several animal studies have been conducted and have indicated potential positive results, but the extent to which data from animal studies can be extrapolated to humans is unknown.[iv]

However, other types of studies indicate that PEP can be effective in reducing HIV infection risk after exposure. The most direct evidence supporting PEP effectiveness was a case-control study of needlestick injuries to health-care workers, which found an 81% reduction in HIV infection compared to health-care workers who had not been administered PEP.[v] Similar findings have been reported from other observational studies and registries that studied risk after sexual HIV exposure, such as in a high-risk HIV incidence cohort in Brazil, rape survivors in South Africa, and sexual and injection drug use exposed individuals in San Francisco.[vi]

SIDE EFFECTS AND FOLLOW-UP CARE

The potential side effects of PEP antiretroviral drugs include nausea, diarrhea, muscle disease, and blood disorders including anemia and low white blood cell counts.[vii]

U.S. Public Health Service guidelines recommend that individuals who seek care after exposure to HIV receive follow-up counseling, post-exposure testing, and medical evaluation, regardless of whether they receive PEP. The guidelines recommend HIV testing for at least six months post-exposure.[viii]

ENDNOTES

[i] Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (MMWR). *Antiretroviral Post exposure Prophylaxis After Sexual, Injection-Drug Use, or Other Nonoccupational Exposure to HIV in the United States* (Jan. 2005) (online at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5402a1.htm).

[ii] *Id*.

[iii] Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (MMWR). *Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Post exposure Prophylaxis* (June 2001) (online at http://www.cdc.gov/MMWR/preview/MMWRhtml/rr5011a1.htm).

[iv] *Supra* note i

[v] Cardo DM, Culver DH, Ciesielski CA, et al. *A Case-Control Study of HIV Seroconversion in Health Care Workers After Percutaneous Exposure*. New England Journal of Medicine 337: 1485-1490 (1997).

[vi] *Supra* note i; Harrison LH, Do Lago RF, Moreira RI, Mendelsohn AB, Schechter Ml. *Post-Sexual-Exposure Chemoprophylaxis (PEP) for HIV: A Prospective Cohort Study of Behavioral Impact [Abstract 225]*, presented at the 8th Conference on Retroviruses and Opportunistic Infections, Chicago, IL (Feb. 4-8, 2001); and Kahn JO, Martin JN, Roland ME, et al. *Feasibility of Postexposure Prophylaxis (PEP) Against Human Immunodeficiency Virus Infection After Sexual or Injection Drug Use Exposure: the San Francisco PEP Study*, Journal of Infectious Diseases 183: 707-714 (2001).

[vii] *Supra* note i

[viii] *Supra* note iii