Medical News

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HIV Postexposure Prophylaxis Recommendations

The CDC recently published updated recommendations for chemoprophylaxis after occupational exposure to human immunodeficiency virus (HIV). The recommendations were prepared by an interagency group representing the CDC, the FDA, the NIH, and the Health Resource Service Administration. Information suggesting that zidovudine (ZDV) postexposure prophylaxis (PEP) may reduce the risk of HIV transmission, after occupational exposure to HIV-infected blood, prompted the interagency group to develop this update to a previous statement on management of occupational exposure to HIV made by the Public Health Service in 1990. Proceedings of a workshop on this topic, which was held for 2 days prior to the deliberations of the interagency group, will be published in the *American Journal of Medicine.*

The report states that, although failures of ZDV PEP have occurred, ZDV PEP was associated with a decrease of approximately 79% in the risk of HIV seroconversion after percutaneous exposure to HIV-infected blood in a case-control study among healthcare workers (HCWs). In addition, a direct effect of ZDV prophylaxis on the fetus or infant may have contributed to the observed 67% reduction in perinatal HIV transmission when ZDV was administered to HIV-infected pregnant women and their infants. Postexposure prophylaxis also prevented or ameliorated retroviral infection in some studies in animals.

The report also summarizes the risk for HIV infection following occupational exposures. The average risk of HIV infection due to all types of reported percutaneous exposures to HIV-infected blood is 0.3%. In the case-control study cited above, risk was increased for exposures involving a deep injury to the HCW, visible blood on the device causing the injury, a device previously placed in the source-patient's vein or artery (eg, a needle used for phlebotomy), or the source-patient dying of AIDS within 60 days postexposure (and therefore presumed to have a high titer of HIV). This suggests that the risk exceeds 0.3% for percutaneous exposures involving a larger blood volume or higher HIV titer in blood. The risks after mucous membrane and skin exposures to HIV-infected blood (estimated to be, on average, 0.1% and <0.1%, respectively) probably also depend on volume of blood and titer of HIV. The risk is likely to be higher for skin contact that is prolonged, involves an area that is extensive or in which skin integrity is visibly compromised, or involves a higher HIV titer. This information on risk was used to develop the recommended protocol for whether to recommend, offer, or not offer antiretroviral prophylaxis. Recommendations are based on the type of exposure and the source material (eg, blood, fluid containing visible blood or other potentially infectious fluid, or any other body fluid, such as urine).

The recommendations for the type of antiretroviral regimen to use were based on available information on the potency and toxicity of antiretroviral drugs from studies of HIV-infected patients, although it is uncertain to what extent these results apply to PEP. The report notes that in HIV-infected patients, combination therapy with the nucleosides ZDV and lamivudine (LMV) has greater antiretroviral activity than ZDV alone and is active against many ZDV-resistant HIV strains, without significantly increased toxicity. Adding a protease inhibitor provides still greater activity; among protease inhibitors, indinavir (IND) is more potent than saquinavir, at currently recommended doses, and appears to have fewer drug interactions and short-term adverse effects than ritonavir.

The guidelines include recommending chemoprophylaxis to exposed workers after occupational HIV exposures having the highest risk of HIV transmission (for example, recommend ZDV plus ZMV plus IND following percutaneous exposures to blood). For exposures believed to have a lower, but non-negligible risk (eg, percutaneous exposure to potentially infectious body fluids such as peritoneal fluid), ZDV plus LMV PEP should be offered, balancing a lower risk against the use of drugs having uncertain efficacy and toxicity. For exposures having a negligible risk (eg, mucous membrane exposure to other body fluids, such as urine), PEP is not justified. It also is recommended that PEP should be offered for certain skin exposures to blood and other potentially infectious body fluids when the exposure is prolonged, involves an extensive area, or in which skin integrity is visibly compromised. Exposed workers should be informed that knowledge regarding efficacy and toxicity of PEP is limited; for agents other than ZDV, there are few data on toxicity in persons without HIV infection or who are pregnant. Of course, workers have the option to decline any or all drugs for PEP.

The guidelines recommend use of ZDV for all PEP regimens, because ZDV is the only agent for which data support the efficacy of PEP in the clinical setting. Lamivudine usually should be added to ZDV for increased antiretroviral activity and for activity against many ZDV-resistant strains. A protease inhibitor, preferably IND, should be added for exposures with the highest risk of HIV transmission. Adding a protease inhibitor also may be considered for lower-risk exposures, if ZDV-resistant strains are likely, although it is uncertain whether the potential additional toxicity of a third drug is justified. For HIV strains resistant to both ZDV and LMV, or a protease inhibitor, or if these drugs are contraindicated or poorly tolerated, the optimal PEP regimen is uncertain; expert consultation is advised.

The report emphasized prompt initiation of PEP, preferably within 1 to 2 hours postexposure. The optimal duration of PEP is unknown; because 4 weeks of ZDV appeared to be protective, PEP probably should be given for 4 weeks, if tolerated. Follow-up counseling and medical evaluation should be done, including HIV antibody tests at

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baseline and periodically for at least 6 months postexposure (eg, 6 weeks, 12 weeks, 6 months). If PEP is used, drug toxicity should be monitored.

These recommendations by the interagency group are provisional, because they are based on limited data regarding efficacy and toxicity of PEP and risk of HIV infection after exposure. Because the majority of occupational exposures to HIV do not result in infection transmission, potential toxicity must be considered carefully when prescribing PEP. The recommendations should be implemented in consultation with persons having expertise in antiretroviral therapy and HIV transmission.

The CDC urges enrollment of all workers in the US who receive PEP in an anonymous registry being developed by the CDC and the Glaxo Wellcome Company to assess toxicity. Unusual or severe toxicity from antiretroviral drugs should be reported to the manufacturer and the FDA. Starting in early 1997, updated information on HIV PEP will be available from the CDC internet home page (www.cdc.gov); fax information service (404-332-4565, Hospital Infections Program directory); National AIDS Clearinghouse (800-458-5231); and HIV/AIDS Treatment Information Service (800-448-0440). (See SHEA News, "Postexposure Antiretroviral Prohylaxis.")

FROM: Centers for Disease Control and Prevention. Update: provisional recommendations for chemoprophylaxis after occupational exposure to HIV. *MMWR* June 9, 1996;45:468-472.

New HCV Exposure Guidelines

The CDC has revised its guidelines for follow-up after occupational exposure to hepatitis C virus (HCV), citing risk of both occupational and nosocomial transmission of HCV.

In summarizing the results of follow-up studies of HCWs who sustained percutaneous exposures to blood from anti-HCV–positive patients, the CDC noted that the incidence of anti-HCV seroconversion (based on second-generation testing) averaged 3.5% (range, 0% to 7%); in the one study that used polymerase chain reaction to measure HCV infection by detecting HCV RNA, the incidence was 10%.

The CDC also noted that hospitalized patients may serve as a reservoir for transmission; the prevalence of anti-HCV among patients has been reported to range from 2% to 18%. A number of nosocomial outbreaks also were summarized. In one report from Australia, four patients who had outpatient surgery on the same day became infected with HCV of the same genotype as a chronically infected patient who underwent surgery just prior to the cases. In a report from Spain, five open-heart–surgery patients acquired HCV infection from a cardiovascular surgeon with chronic HCV.

In the absence of postexposure prophylaxis, there are multiple issues that need to be considered in deciding if there should be a defined protocol for the follow-up of HCWs for HCV infection after occupational exposure. These include the limited data on the risk of transmission, the limitations of available serological testing for detecting infection and determining infectivity, the poorly defined risk of transmission by sexual, household, and perinatal exposures, the limited benefit of therapy for chronic disease (eg, alpha interferon), the medical and legal implications, and the cost of follow-up. The CDC has estimated the nationwide cost of providing postexposure follow-up testing at $2 to $4 million per year; the cost per person for each person who benefits from therapy is estimated at $200,000.

In the summary of recommendations, the CDC stated that no postexposure prophylaxis is available for hepatitis C and that immune globulin is not recommended because it does not appear to be effective in preventing hepatitis C. The CDC recommended that institutions should provide HCWs with accurate and up-to-date information on the risk and prevention of all bloodborne pathogens, including hepatitis C. In addition, institutions should consider implementing policies and procedures for follow-up of HCWs after percutaneous or mucosal exposure to anti-HCV–positive blood. Such policies might include baseline testing of the source patient for anti-HCV and baseline and 6-month follow-up testing of the persons exposed for anti-HCV and alanine aminotransferase activity. All anti-HCV results should be confirmed by supplemental anti-HCV testing.

The issue of the HCV-infected HCW also is addressed, and the guidelines state that the risk of transmission from an infected worker to a patient appears to be very small and that there currently are no recommendations regarding restriction of HCWs with hepatitis C. As recommended for all HCWs, those who are anti-HCV–positive should follow strict aseptic technique and standard (universal) precautions, including appropriate use of handwashing, protective barriers, and care in the use and disposal of needles and other sharp instruments.

A copy of this document may be obtained from the CDC Hepatitis Surveillance Branch (telephone 404-639-3408).

FROM: Centers for Disease Control and Prevention. Issues and answers: what is the risk of acquiring hepatitis C for health care workers and what are the recommendations for prophylaxis and follow-up after occupational exposure to hepatitis C virus? Centers for Disease Control and Prevention: Hepatitis Surveillance Report: No. 56; April 1996.

Fatal Toxemia of Dialysis Patients

An outbreak of severe toxic reactions among 131 dialysis patients occurred at a dialysis center in Caruaru, near Recife, in northern Brazil. Between February 17 and 20, 1996, patients reported visual disturbances, abdominal pain, and vomiting associated with dialysis. On February 20, one patient died soon after completing a dialysis session. Between February 22 and March 6, 1996, 11 additional patients died; the Ministry of Health was notified, and the center was closed. Surviving patients initially were transferred to the city's other dialysis center, but now are being dialyzed outside of Caruaru. As of May 13, 46 patients were known to have died, and over 40 others have been hospitalized in Recife. Over 90% of the patients at the affected dialysis center reported having visual disturbances, gastrointestinal complaints, and muscle weakness;

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