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Management of Occupational Exposure to the Human Immunodeficiency Virus

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Much concern exists among health care workers about the possibility of occupational acquisition of human immunodeficiency virus (HIV) infection. Throughout the United States, several hundred health care workers who have experienced documented exposures to blood or other body fluids of persons infected with HIV have been followed prospectively. Results from these studies have demonstrated that the risk of HIV transmission associated with a single percutaneous exposure is on the average 0.33% (approximately 1 infection for every 350 exposures).1-4 Most efforts to prevent occupational HIV infection have focused on universal infection control precautions to reduce the incidence of occupational exposures.5 Strict adherence to these recommendations will reduce, but may not completely eliminate, the risk of such exposures. Additional recommendations have been made for management of health care workers following occupational exposure to blood from HIV-infected patients.6,7 This chapter focuses on elements of postexposure management and discusses issues regarding the use of prophylactic zidovudine.

General Principles

Employers should make available to health care workers a system for prompt evaluation following an occupational exposure to HIV. Worker education is an integral component of such a system (Table 14.1), and it should be included in the workers’ orientation and ongoing inservice educational activities. One of the goals of such programs is to familiarize workers with their personal risk of occupational exposure to HIV. To provide clear guidance and avoid undue concern, each institution should adopt a definition of what constitutes an occupational exposure that may place a worker at risk of HIV infection. The U.S. Public Health Service has defined such an exposure as

"a percutaneous injury (e.g., a needlestick or cut with a sharp object), contact of mucous membranes, or contact of skin (especially when the exposed skin is
TABLE 14.1. List of objectives in educational program for health-care workers.

I. Prevention Component
   A. Describe blood and body fluids requiring universal precautions.
   B. Describe and be familiar with universal precautions.
   C. Know where to access materials necessary for universal precautions (e.g., gloves, gowns, puncture-proof containers).
   D. Follow universal precautions routinely.

II. Management Component
   A. Define occupational exposure.
   B. Become familiar with personal risk of occupational exposure and preventive actions.
   C. Become familiar with postexposure management program and steps to be followed on occurrence of incident (include ready access to emergency telephone numbers).
   D. Discuss postexposure management options, including theoretic basis of postexposure zidovudine prophylaxis, its availability, side effects, and need for follow-up.

chapped, abraded, or afflicted with dermatitis or the contact is prolonged or involving an extensive area) with blood, tissues, or other body fluids to which universal precautions apply, including: a) semen, vaginal secretions, or other body fluids contaminated with visible blood, because these substances have been implicated in the transmission of HIV infection; b) cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid, because the risk of HIV transmission from these fluids has not yet been determined; and c) laboratory specimens that contain HIV (e.g., suspensions of concentrated virus)."\(^6\)

The worksite orientation and educational activities should include opportunities to openly discuss the risks and actions to be undertaken in the event of an occupational exposure. Employees must be trained to report exposures immediately after they occur, because certain interventions that may be appropriate must be initiated promptly to be effective. Most consultants agree that the postexposure period is not the optimal time to first consider the use of zidovudine.

After an occupational exposure, exposed employees and source individuals should be evaluated to determine the possible need for prophylaxis against hepatitis B virus (HBV) infection and the need for follow-up serologic testing for HIV antibody (e.g., baseline, 6, 12, and 24 weeks after exposure). If consent cannot be obtained from the source individual, policies should be developed for testing source individuals in compliance with applicable state and local laws. Confidentiality of the exposed worker and the source individual must be safeguarded at all times. Existing guidelines recommend that if an exposure occurs, the circumstances should be recorded in a confidential medical record. Relevant information includes: date and time of exposure; job duty being performed at time of exposure; details of exposure (amount and type of