

Infectious Diseases

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The acquired immunodeficiency syndrome (AIDS) virus has been termed "human T-cell lymphotropic virus type III" (HTLV-III), "lymphadenopathy-associated virus" (LAV), and "AIDS-associated retrovirus." The designation "human immunodeficiency virus" (HIV) has recently been proposed by an international group.

As new information on the varied clinical manifestations of infection with this virus develops, it becomes apparent that the original surveillance definition of AIDS was too narrow. Therefore, a more comprehensive classification system for HIV infections was established in 1986 by a panel of experts from the Centers for Disease Control.¹ It is still hard to estimate the size of the epidemic, but it appears that perhaps 500 000 to 2 million persons have been infected with HIV in the United States, where more than 20 000 cases of AIDS were reported by mid-1986.² It is estimated that an average of 2% to 4% of seropositive individuals will develop AIDS each year for the first five to ten years.³ The introduction of serological testing in blood banks and modifications in the preparation of clotting factors have essentially eliminated the risk of new HIV infections in blood transfusion recipients and hemophiliacs.⁴

Homosexual and bisexual men and intravenous drug abusers still account for about 90% of AIDS cases acquired in the United States. Heterosexual transmission accounts for only 1% of new cases. The ultimate potential for spread among heterosexuals in the United States remains unknown, given the fact that heterosexual transmission appears to be the predominant mode of spread in Africa. Human immunodeficiency virus infection first appeared in detectable numbers in Central Africa in the mid-1970s and it now appears to be spreading with alarming rapidity into other African countries.⁵

Newly identified retroviruses isolated in West Africa have been termed HTLV-IV by a group led by Essex at Harvard and LAV-2 by a group led by Montagnier at the Pasteur Institute.^{6,7} The prevalence of HTLV-I and HTLV-II antibodies has now been described in a US AIDS endemic area.⁸ A closely related retrovirus, termed simian T-cell lymphotropic virus type III, has been isolated from African green monkeys.

Approximately 1.4% of the cases of AIDS in the United States now occur in children younger than 13 years.² The majority of those children are under 2 years of age and were infected through congenital or perinatal transmission from mothers with AIDS.

The role and risk of prenatal vs natal transmission urgently require further study, as does the possible effectiveness of cesarean section in

preventing natal transmission. Breast-feeding has also been associated with transmission of the virus, and there is concern about a possible increase in the likelihood of progression to AIDS with pregnancy. Seropositive or high-risk women should be encouraged to defer pregnancy.⁹

Other means of spreading of the virus seem quite limited. For example, of 1700 health care workers with known puncture wounds or mucous membrane contamination with blood from AIDS patients, only three were found to be seropositive and not in a known high-risk group. Of those three, none was a clear seroconverter, nor has any of them developed AIDS.^{10,11} These figures are in striking contrast to the 6% to 30% transmission rate of hepatitis B virus with parenteral inoculation but should still encourage close adherence to the guidelines established by the Centers for Disease Control for health care workers dealing with AIDS patients.¹² Another important study involved more than 100 household contacts of AIDS patients. It showed no transmission other than through sexual or perinatal means.¹³ Compared with hepatitis B, the virus also seems quite sensitive to common cleaning agents such as bleach, 70% alcohol, and quaternary ammonium solutions.¹⁴

The unusual infections associated with AIDS have become better understood, eg, cryptosporidium now may be easily detected in the stool and has been identified as a cause of diarrhea in healthy as well as immunosuppressed people.¹⁵ The increase in opportunistic infections has led to Food and Drug Administration licensing of pentamidine for *Pneumocystis carinii* pneumonia, and studies of new agents for other difficult infections are under way.

The response of major nongovernmental foundations to AIDS has not yet been impressive. The Robert Wood Johnson Foundation is the first major private foundation to enter the AIDS arena and will fund demonstration projects to provide care for AIDS patients by coordinating hospitals and governmental and community agencies. San Francisco has done a remarkable job of caring for patients with AIDS, providing volunteers, and lessening in-hospital care and costs. It is hoped that other communities will develop models appropriate to the situation and that other private foundations will follow the Robert Wood Johnson Foundation lead.

A more upbeat area of development in infectious diseases is the addition of interesting new antibiotics. The penicillin family has been expanded by amdinocillin (Coactin, previously mecillinam), which offers synergy with other β -lactam antibiotics, but its use seems limited to treating very resistant gram-negative bacteria.¹⁶ New cephalosporins include cefotetan (Cefotan), which has a spectrum similar to that of cefoxi-



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