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Immunodeficiency among Female Sexual Partners of Males with Acquired Immune Deficiency Syndrome (AIDS) — New York

CDC has received reports of two females with cellular immunodeficiency who have been steady sexual partners of males with the acquired immune deficiency syndrome (AIDS).

Case 1: A 37-year-old black female began losing weight and developed malaise in June 1982. In July, she had oral candidiasis and generalized lymphadenopathy and then developed fever, non-productive cough, and diffuse interstitial pulmonary infiltrates. A transbronchial biopsy revealed *Pneumocystis carinii* pneumonia (PCP). Immunologic studies showed elevated immunoglobulin levels, lymphopenia, and an undetectable number of T-helper cells. She responded to antimicrobial therapy, but 3 months after hospital discharge had lymphadenopathy, oral candidiasis, and persistent depletion of T-helper cells.

The patient had no previous illnesses or therapy associated with immunosuppression. She admitted to moderate alcohol consumption, but denied intravenous (IV) drug abuse. Since 1976, she had lived with and had been the steady sexual partner of a male with a history of IV drug abuse. He developed oral candidiasis in March 1982 and in June had PCP. He had laboratory evidence of immune dysfunction typical of AIDS and died in November 1982.

Case 2: A 23-year-old Hispanic female was well until February 1982 when she developed generalized lymphadenopathy. Immunologic studies showed elevated immunoglobulin levels, lymphopenia, decreased T-helper cell numbers, and a depressed T-helper/T-suppressor cell ratio (0.82). Common infectious causes of lymphadenopathy were excluded by serologic testing. A lymph node biopsy showed lymphoid hyperplasia. The lymphadenopathy has persisted for almost a year; no etiology for it has been found.

The patient had no previous illnesses or therapy associated with immunosuppression and denied IV drug abuse. Since the summer of 1981, her only sexual partner has been a bisexual male who denied IV drug abuse. He developed malaise, weight loss and lymphadenopathy in June 1981 and oral candidiasis and PCP in June 1982. Skin lesions, present for 6 months, were biopsied in June 1982 and diagnosed as Kaposi's sarcoma. He has laboratory evidence of immune dysfunction typical of AIDS and remains alive.

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Editorial Note: Each reported female patient developed immunodeficiency during a close relationship, including repeated sexual contact, with a male who had AIDS. Patient 1 fits the CDC case definition of AIDS used for epidemiologic surveillance (1). Patient 2 does not meet this definition, but her persistent, generalized lymphadenopathy and cellular immunodeficiency suggest a syndrome described among homosexual men (2). The epidemiologic and immunologic features of this "lymphadenopathy syndrome" and the progression of some patients with this syndrome to Kaposi's sarcoma and opportunistic infections suggest it is part of the AIDS spectrum (3,4). Other than their relationships with their male sexual partners, neither patient had any apparent risk factor for AIDS. Both females specifically denied IV drug abuse.

Epidemiologic observations increasingly suggest that AIDS is caused by an infectious agent. The description of a cluster of sexually related AIDS patients among homosexual males in southern California suggested that such an agent could be transmitted sexually through other intimate contact (5). AIDS has also been reported in both members of a homosexual couple in Denmark (6). The present report supports the infectious-agent hypothesis and the possibility that transmission of the putative "AIDS agent" may occur at both heterosexual and male homosexual couples.

Since June 1981, CDC has received reports of 43 previously healthy females who have developed PCP or other opportunistic infections typical of AIDS. Of these 43 patients, 13 were reported as neither Haitians nor IV drug abusers. One of these 13 females is described in case 1, another four, including two wives, are reported to be steady sexual partners of male IV drug abusers. Although none of the four male partners has had an overt illness suggesting AIDS, immunologic studies of blood specimens from one of these males have shown abnormalities of lymphoproliferative response (7). Conceivably, these male drug abusers are carriers of an infectious agent that has not made them ill but caused AIDS in their infected female sexual partners.

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Acquired Immune Deficiency Syndrome (AIDS) in Prison inmates — New York, New Jersey

CDC has received reports from New York and New Jersey of 16 prison inmates with the acquired immune deficiency syndrome (AIDS).

New York: Between November 1981 and October 1982, ten AIDS cases (nine with *Pneumocystis carinii* pneumonia (PCP) and one with Kaposi's sarcoma (KS)) were reported among inmates of New York State correctional facilities. The patients had been imprisoned from 3 to 36 months (mean 18.5 months) before developing symptoms of these two diseases.

All ten patients were males ranging in age from 23 to 38 years (mean 29.7 years). Four were black, and of the six who were white, two were Hispanic. Four of the nine patients with PCP died; the patient with KS is alive. All nine patients with PCP also developed oral candidiasis. None of the patients was known to have an underlying illness associated with immunosuppression, and no such illness was found at postmortem examination of the four patients who died. PCP was diagnosed in all nine cases by means of transbronchial or open-lung biopsy, while KS was diagnosed by biopsy of a lesion on the leg.

Evidence of cellular immune dysfunction was present in the nine patients with PCP: eight were lymphopenic, and all nine were anergic to multiple cutaneous recall antigens. An abnormally low ratio of T-helper to T-suppressor cells was present in six of seven patients tested, and in vitro lymphocyte proliferative responses to a variety of mitogens and antigens were significantly depressed or negative in the six patients tested. The one patient with KS had cutaneous anergy and a decreased proportion of T-cells in his peripheral blood. The ratio of T-helper to T-suppressor cells was normal; studies of lymphoproliferative response were not done.

All ten patients reported that they were heterosexual before imprisonment; one is known to have had homosexual contacts since confinement. However, the nine patients with PCP were regular users of intravenous (IV) drugs (principally heroin and cocaine) in New York City before imprisonment. The seven patients who were extensively interviewed denied regular IV drug use since confinement, although two reported occasional use of IV drugs while in prison. The ten patients were housed in seven different prisons when they first developed PCP or KS. Three patients who developed symptoms of PCP within 1 month of each other were confined in the same facility. However, they were housed in separate buildings, and each denied any social interaction (including homosexual contact and drug use) with the other patients.

All inmates of the New York State correctional system receive a medical evaluation when transferred from local or county jails; this usually includes a leukocyte count. Of the nine AIDS patients who initially had leukocyte counts, seven did not then have symptoms of AIDS. Four of these seven asymptomatic males had leukocyte counts below 4000/mm³. For these four,

the time between leukocyte counts and development of clinical PCP symptoms ranged from 4 to 19 months (mean 11.5 months).

New Jersey: Of the 48 AIDS cases reported from New Jersey since June 1981, six have involved inmates of New Jersey State correctional facilities. All six had PCP. They were imprisoned from 1 to 36 months (mean 17.5 months) before onset of symptoms.

All six patients were males ranging in age from 26 to 41 years (mean 32 years). Three were black; three, white. Four of the six died within 1-8 months of onset of their illnesses. None of the six was known to have underlying illness associated with immune deficiency. Immunologic studies of the two survivors have shown cutaneous anergy, leukopenia, lymphopenia, and increased circulating immune complexes. T-cell studies were not done.

All six patients have histories of chronic IV drug abuse. Of the five for whom sexual orientation was reported, four were heterosexual, and one was homosexual. The two living patients have denied both IV drug use and homosexual activity since imprisonment. No two of the six patients had been confined in the same facility at the same time.

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Editorial Note: Since male homosexuals and IV drug abusers are known to be at increased risk for AIDS (7), the occurrence of AIDS among imprisoned members of these groups might have been anticipated. Increasingly, epidemiologic observations suggest that AIDS is caused by an infectious agent transmitted sexually or through exposure to blood or blood products. Because of the difficulties inherent in interviewing prisoners, data elicited in such interviews must be viewed cautiously. Given this caution, the histories obtained from the inmates indicate that all or most of their drug use, and, by inference, their exposure to a blood-borne agent, occurred before confinement.

The presence of leukopenia in some of the prisoners tested on admission to the prison system may imply that laboratory evidence of immune dysfunction may precede clinical illness by months.

Health care personnel for correctional facilities should be aware of the occurrence of AIDS in prisoners, particularly prisoners with histories of IV drug abuse. AIDS cases identified in prisoners should be reported to local and state correctional and health departments and to CDC.

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Prevention of Acquired Immune Deficiency Syndrome (AIDS): Report of Inter-Agency Recommendations

Since June 1981, over 1,200 cases of acquired immune deficiency syndrome (AIDS) have been reported to CDC from 34 states, the District of Columbia, and 15 countries. Reported cases of AIDS include persons with Kaposi's sarcoma who are under age 60 years and/or persons with life-threatening opportunistic infections with no known underlying cause for immune deficiency. Over 450 persons have died from AIDS, and the case-fatality rate exceeds 60% for cases first diagnosed over 1 year previously (1,2). Reports have gradually increased in number. An average of one case per day was reported during 1981, compared with three to four daily in late 1982 and early 1983. Current epidemiologic evidence identifies several groups in the United States at increased risk for developing AIDS (3-7). Most cases have been reported among homosexual men with multiple sexual partners, abusers of intravenous (IV) drugs, and Haitians, especially those who have entered the country within the past few years. However, each group contains many persons who probably have little risk of acquiring AIDS. Recently, 11 cases of unexplained, life-threatening opportunistic infections and cellular immune deficiency have been diagnosed in patients with hemophilia. Available data suggest that the severe disorder of immune regulation underlying AIDS is caused by a transmissible agent.