

FOCUS A GUIDE TO AIDS RESEARCH

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Heterosexuals and AIDS: What is the Risk?

Nancy Padian, PhD

The heterosexual transmission of the human immunodeficiency virus (HIV) can be understood on two levels. The first concerns risk throughout populations while the second applies to risks for individuals. Predictions and advice about the likelihood of HIV transmission — and thus the future course of the AIDS epidemic — are not necessarily the same for both levels. For example, although the risks of the spread of AIDS among white, middle-class, heterosexual individuals may be low, it does not necessarily follow that individuals in this population are "risk-free". Conversely, high rates of infection reported from small studies of the heterosexual partners of HIV-infected persons do not necessarily foretell a widespread heterosexual epidemic. This report will review the established risk factors for heterosexual transmission and their implications for individuals and populations.

The most effective way to uncover biological, behavioral, and social factors associated with the heterosexual transmission of HIV continues to be through "partner studies". These research efforts involve individuals who are infected with HIV or diagnosed with AIDS or ARC along with their sexual partners. The partners are tested for HIV antibody, and both members of the couple are interviewed to clarify factors associated with transmission. Researchers can control for other potential sources of exposure with data collection methods or subsequent statistical analyses. In this way the study can focus exclusively on sexual transmission between defined individuals.

Male-to-Female Transmission

Data from male-to-female partner studies have been fairly consistent. Among the female partners of infected bisexual or hemophiliac men or men infected from contaminated blood transfusions, infection rates vary from 15% to 20% depending on the study size and sample. Among female partners of intravenous drug using (IVDU) men or men of Haitian or Central African origin, infection rates are consistently higher, more on the order of 40 to 80%. Several hypotheses may explain the discrepancy in rates between these two types of studies.

Female partners of IVDUs, Haitians, or Central Africans may be more sexually active and thus may be at increased risk of infection. Alternatively, the presence of co-factors such as concurrent infections (particularly sexually transmitted diseases), nutritional status, or general health may be different among the risk groups of men and their partners. These co-factors could affect both infectivity and susceptibility. Other explanations include the possibility that men from one risk group may transmit the virus more efficiently or that partners of IVDUs may have used drugs intravenously and denied it during

interviews. Whatever the explanation, these differences in infection rates highlight the important role of heterosexual transmission in areas with populations of IVDUs, Central Africans, and Haitians. Until these differences are better understood, however, it is not appropriate to generalize these findings.

Although transmission has been documented through penile-vaginal intercourse in all partner studies, factors that further increase risk of male-to-female transmission include anal intercourse, repeated unprotected sexual contact with the infected partner, and concurrent infection with a sexually transmitted disease such as syphilis, gonorrhea, and genital ulcers. Condom use has been shown in various studies to reduce transmission risk, but such protection occurs only when high quality condoms are used properly.

Since there is no way of knowing which exposure might result in transmission, abstinence or safer sex techniques should be practiced at all times with a partner who is infected or whose risk status is unknown.

The Role of Multiple Partners

These factors highlight the mechanisms of transmission, but they provide little information about random risks in larger populations. By definition, these studies only look at partners of infected people. To predict the spread of the epidemic into larger populations, one must consider the likelihood that a random partner is infected with HIV. For example, in several studies the number of sexual partners was not associated with HIV infection although long-term relations with an infected partner was. Thus, one can infer that the likelihood of having an infected heterosexual partner in the populations from which these samples were drawn was small, whereas repeated contact with a known infected partner is obviously risky. However, one may not know the serostatus of a sexual partner. As a result, all individuals who have any doubt about their partner's AIDS risk should practice safer sex.

To date, about 2% of all reported cases of AIDS in the United States have been attributed to heterosexual transmission. As long as the prevalence of the virus remains low in the heterosexual community in this country, the chance that a random partner could be infected is small. Although an individual's risk may be minimal, it remains imperative to err on the side of caution. As long as infection rates remain low, there is a greater chance of successfully slowing or preventing further spread of HIV through education and prevention campaigns.

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Heterosexuals . . .

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There has been increasing interest in the transmission risk of one exposure from a known infected partner. Researchers can estimate this risk using statistical modeling techniques. These estimates are based on the observation that risk increases with the number of exposures. A model based on one heterosexual partners' study indicated that the infectivity rate per contact for penile-vaginal intercourse was about .001. This does not mean that it takes 1000 exposures for transmission to occur. The probability is the same with each exposure. Multiple exposures simply mean that the likelihood of one exposure resulting in transmission is increased. Thus, one would expect some instances of transmission based on one contact to occur, although these would be relatively rare events.

Conversely, one would expect that multiple exposures could occur with no transmission of the virus. Since there is no way of knowing which exposure might result in transmission, abstinence or safer sex techniques should be practiced at all times with a partner who is infected or whose risk status is unknown.

Estimates of infectivity will vary as we learn more about individual differences in transmission. We already know that certain behaviors, such as anal intercourse, can increase the probability of transmission. Even so, it is doubtful that all individuals are equally efficient in transmitting HIV. It is most likely that individuals differ in susceptibility as well. Once we can identify such differences, we can better predict when and if transmission will occur.

Some researchers believe that infectiousness is most efficient soon after infection and again when the disease progresses to clinical AIDS. It is possible that some people may not be able to transmit the virus at all, while others are exceptionally efficacious. These factors highlight the complexity of the study of infectivity.

Female-to-Male Transmission

Results from female-to-male partner studies are far less consistent than those from male-to-female studies. Infection rates vary from observations of no infection among the male partners of infected women to transmission that appears to be equally efficient in either direction (male-to-female or female-to-male). Since there are relatively few HIV-infected women in the United States (about 7% of the total number of reported AIDS cases), male partners of infected women are difficult to find. As a result, studies of female-to-male transmission are based on very small numbers of participants. The data allow for few generalizations directed at larger populations. Infection rates appear to be higher among the male partners of female IVDUs or infected women from Haiti and Central Africa. Explanations of this phenomenon are similar to those suggested for the discrepancy in male-to-female transmission. Some researchers believe that infectiousness in these women increases with a progression to disease. However, neither specific risk factors for transmission nor infectivity rates per contact are available for female-to-male transmission.

It is important to realize that the biological possibility of female-to-male transmission is not in dispute; case histories of such events have been documented. What remains unclear are the degrees of efficiency and the related risks for infection. Such information is crucial for predicting the course of the AIDS epidemic among heterosexuals.

Population-Based Data

Although partner studies help explain the mechanisms of transmission between individuals, they do not provide information about the prevalence of infection in the larger population. They are not useful in helping to predict the likelihood that a random partner might be infected. Large-scale sero-

prevalence surveys are necessary to understand risks at a population level.

At this point much of what we know about the prevalence of HIV infection throughout the United States is based only on limited empirical data. Studies from samples in sexually transmitted disease clinics and among sexually active volunteers have shown varying rates of infection from less than 1% to more than 5%. However, one must be cautious in targeting the populations from which these samples were derived. These rates do not apply to all populations. Since these samples were tested anonymously, risk factors cannot be determined.

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Summary

Seroprevalence rates from these studies combined with information about risks of transmission from partner studies can form a sound basis to develop successful prevention and education programs in the United States. Worldwide prevention efforts will benefit from these data combined with those from other populations, especially those in developing countries.

Nancy Padian, PhD, a Research Epidemiologist at the University of California Berkeley, is a Project Director of the California Partners' Study, a study of the heterosexual partners of individuals infected with HIV.

Diagnosis/Treatment/Prevention

Seropositive Women: Clinical Issues and Approaches

Marsha Blachman, LCSW

As the AIDS epidemic continues, the rate of infection among heterosexuals, especially women, has grown significantly. In fact, recent studies indicate that heterosexual women are at greater risk of acquiring AIDS through sexual intercourse than heterosexual men.¹ The threat posed to women, particularly women of color, emphasizes the need to examine women's psychosocial concerns in regard to AIDS.

Women who are HIV seropositive or who are at risk for infection do not belong to a single community, culture, class, or location. Their lives are organized through many family constellations, ethnic groups, and lifestyles. Clinicians who attempt to address women's psychosocial needs must recognize this diversity and respond with creative interventions.

In January 1987 the UCSF AIDS Health Project began a program to provide mental health services to women concerned with the AIDS epidemic. Several service approaches were established. Staff, primarily women, offered individual psychosocial assessments, crisis intervention, brief counseling, drop-in educational seminars, and time-limited support groups. The support groups combine a cognitive and behavioral format with a problem-solving therapy orientation; they have been proven

to be quite powerful in enhancing women's sense of well-being and in reducing stress.

Many of the ways in which AIDS affects men are the same for women. A progression of psychological reactions is common, with emotional states becoming more intense and fluctuating unpredictably. There is shock: from the shattering of denial after receiving seropositive test results, realizing the consequences of one's behavior, and confronting a life-threatening illness. There is anxiety: from fear of losing control, preoccupation with physical symptoms, and concern about disclosure to others. There is depression: from plunging self-esteem, disrupted sleep and eating routines, and repressed anger toward individuals and institutions.

In other important ways, women experience AIDS differently from men. Most seropositive women experience social isolation. For some, this isolation comes from a lack of a specifically defined community with which to identify. For others, the mistaken belief that AIDS organizations provide services only to gay men prevents them from seeking help. Many find it difficult to obtain adequate medical care and social services. This is especially true for those who live outside urban populations that are often more aware of AIDS. Furthermore, women confront violations of confidentiality and discrimination in employment, housing, and insurance. Clinicians and agencies must develop programs that address these vital social needs.

Meeting other seropositive women for emotional support is of tremendous value in promoting adaptive coping strategies. These women may also benefit from the nurturance and trust fostered in a dynamic, therapeutic relationship.

Fear of abandonment has a realistic basis; many seropositive women suffer from disruptions in relationships with families, partners, and friends. For example, this year several women have sought counseling and referrals after their long-term romantic relationships ended. Their life partners had been unable to accept their seropositive status; many partners refused to adopt the behavior changes necessary to reduce the risk of HIV transmission. In psychological terms, women frequently translate rejection into personal and social alienation. These women develop negative thoughts and feelings about their bodies, and they face increasing dependency.

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For seropositive women, issues of family planning can be fraught with difficulty. First, there is worry about children — the fear of infecting them, leaving them motherless, having them removed from the home, and exposing them to public ridicule and discrimination. Second, there is a deep sadness from having to forgo, postpone, or perhaps terminate a pregnancy. Some physicians and researchers believe that pregnancy may increase the risk of developing AIDS in seropositive women. In addition, transmission risk to the fetus is high.

Finally, seropositive women often confront an identity crisis, stemming from the attitude of many societies that place greater value on the responsibilities of mothering than other potential female roles. Counseling can help women face this personal loss and begin making choices for their futures.

Seropositive women may benefit from the warmth and reassurance of support groups. It can be comforting to meet

others who grapple with the same hope and despair and to learn that one is not alone with this emotional turmoil. Women in these groups demonstrate tremendous compassion and openness as they face existential issues of life and death with perseverance, courage, and faith. These women are expanding the meaning of their ancient caretaker role by making their own needs a priority and by adopting a fuller understanding of self-acceptance.

Marsha Blachman, LCSW, is a clinical social worker with the Women's Services Program of the AIDS Health Project in San Francisco.

REFERENCES

1. Guinan, ME, Hardy, A: **Epidemiology of AIDS in women in the United States from 1981-1986.** *J Amer Med*, April 17, 1987; Vol 257: 15: 2039-42.

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Recent Reports

WHO Global Strategy Endorses Counseling. The World Health Organization's (WHO) Special Program on AIDS published guidelines in January for "Counseling in HIV Infection and Disease." The international agency detailed the essential role of counseling in AIDS control programs, specifically to complement all testing for HIV infection, to help HIV-positive individuals manage stress and maintain behavior changes, to assist those who are not infected with HIV to remain that way, and to defuse societal tendencies toward discrimination of people with HIV infection or AIDS.

WHO also endorsed the training of large numbers of people in the skills of counseling. It called for new training programs and the expansion of existing programs to include training on HIV infection and AIDS.

During the recent World Summit of Ministers of Health on Programmes for AIDS Prevention, participants issued a declaration in support of programs of education and counseling services for populations at greater risk of HIV infection.

Copies of the WHO guidelines can be obtained by contacting the Special Programme on AIDS, WHO, 1211 Geneva 27, Switzerland.

U.S. Sees Rise in Chancroid. Generally considered a minor sexually transmitted disease (STD) in the United States, chancroid has prompted new concerns because of a spiraling number of cases and because of its possible link to HIV transmission.

Chancroid is characterized by genital ulcers and often by inguinal lymphadenopathy (swelling of the lymph nodes of the groin). A recent article (*JAMA*, December 11, 1987) noted increasing numbers of cases of chancroid in the U.S. during the last five years, soaring from a mean of 878 cases annually during the 1970s to more than 3400 cases in 1986. That total was 65% more than in 1985.

Elsewhere in the world, incidence of chancroid is believed to exceed that of syphilis, and in Central Africa the open lesions of chancroid appear to facilitate HIV transmission during unprotected sexual intercourse.

A study of chancroid in the U.S. conducted by the Centers for Disease Control (CDC) found that (1) the disease is becoming a significant STD in the country; (2) it tends to appear in particular regions, and (3) its demographic and epidemiological similarities offer clues for its control.

The CDC study found that reports of the disease clustered in specific geographic regions. In 1986 five states (New York, Texas, California, Florida, and Georgia) reported most (94.896) of the cases of chancroid. These states reported a similarly high percentage of the total U.S. cases in the five years previous as

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well. Outbreaks of chancroid occurred in specific cities and preponderantly among blacks and Hispanics. Virtually all patients have been heterosexuals.

The male-to-female ratio varied from 3:1 to 25:1. The ratio was found to be highest in outbreaks that involved prostitution; in other locations disease occurred among highly sexually active individuals.

Accurate reporting of chancroid is difficult because laboratory confirmation seldom occurs: culture confirmation requires special media and culture conditions and microbiologists familiar with the causative agent. Due to these problems with making diagnoses, chancroid is most often diagnosed on a clinical basis. While this often leads to misdiagnosed cases, the CDC researchers recommended that chancroid should be suspected when ulcers are present with a history of painful blisters and significant inguinal lymphadenopathy. Individuals with these symptoms who report previous contact with prostitutes or travel to known endemic areas should be considered at high risk for chancroid.

Effective therapies for chancroid exist (either erythromycin base 500 mg orally four times a day for seven days or ceftriaxone, 250 mg intramuscularly once). Individuals with chancroid should be treated quickly, and their sexual contacts should be traced and treated as well to prevent the establishment of ongoing foci of disease.

HIV Transmission from Adults with Transfusion-Associated Infections. A study of families of heterosexual patients with transfusion-associated HIV infections showed a relatively low rate of transmission from the infected partners to their spouses. A study published in the *Journal of the American Medical Association* (January 1, 1988), showed that of 55 wives who had sexual contact with seropositive husbands, ten (18%) were seropositive for HIV. In the same study of 25 husbands who had sexual contact with seropositive wives, two (8%) were seropositive. This study excluded family members who had other possible exposures such as sexual contact with another person at risk for HIV infection or intravenous drug use.

Most infected spouses had had only vaginal intercourse, unprotected by condoms or spermicides.

No evidence of transmission to other family members was observed, despite the fact that family members had opportunities for exposure to small amounts of the infected person's saliva, feces, and urine.

Update on AIDS in Africa. AIDS, and more generally HIV infection, continues to be endemic in most urban areas in Central Africa. Recent surveys have found that rural populations also show a high prevalence of HIV antibodies. According to a recent article in *AIDS: An International Bimonthly Journal* (November 1987) infection in rural Rwanda results from heterosexual contact of rural dwellers with partners who travel frequently or are in contact with persons who live in urban areas. Rwandese health officials have begun a national campaign to prevent the spread of HIV infection in rural areas.

In Uganda, results of a recent survey have shown that adults with a greater number of sexual partners have higher rates of HIV infection than those with an assumed average number of sexual partners. In a survey of women who reported

having more than 20 partners in a month, 67.7% of them tested positive for HIV. Of women in primarily monogamous relationships, however, only 10.6% tested seropositive. There was no evidence of intravenous drug abuse or significant homosexuality in the tested group.

School children who have not yet become sexually active and older people no longer sexually active were also included in the study; they were found to be free from infection.

Intensive Care for Patients with AIDS: Ethical Dilemmas. Health care professionals and hospital administrators face difficult decisions regarding the provision of intensive care services to patients with AIDS. As the numbers of cases continue to rise, the demands on hospitals will only increase, exacerbating existing dilemmas.

Bernard Lo, MD and his colleagues from the University of California San Francisco identified four principles to help guide decision-making about intensive care. Published in the *Review of Infectious Diseases* (Nov.-Dec. 1987), the researchers emphasized that:

- (1) the outcome for patients with AIDS is poor, even with intensive care;
- (2) physicians and the patients themselves should make decisions jointly about treatments and care; patients may choose to forego treatments and physicians need not feel compelled to pursue a course of care that holds little promise;
- (3) when the patients are not competent, physicians should make decisions with a patient surrogate for the patient; whenever possible, the patient's wishes should be determined early before loss of competence and these wishes should be followed;
- (4) with limited health care resources, society may need to determine the appropriateness of limiting intensive care for patients with little chance for recovery.

While researchers encourage an evaluation of intensive care services, they advise that "sound ethical decisions require accurate medical information about prognosis, risks, and benefits of treatment." At no time, the researchers advised, should decisions on hospital services be based on discrimination against patients with AIDS.

Next Month

Physicians have an increasing need to stay informed of developments in AIDS research and prevention. Those who try to keep current often feel overwhelmed with the amount of new information. Others, as shown in several studies, have yet to make a commitment to being educated about AIDS.

In the March issue of **FOCUS**, Charles Lewis, MD, Professor of Medicine and Chief of the Division of General Internal Medicine and Health Services at the University of California Los Angeles, will discuss the AIDS education needs of physicians and the challenges to their getting involved with AIDS prevention and patient counseling.

Coping with a diagnosis of AIDS, ARC, or HIV infection can be difficult for the practitioner as well as the patient. Also in the March issue, Judy Macks, MSW, LCSW, Coordinator of Professional Education at the AIDS Health Project in San Francisco, will discuss the impact of AIDS on the doctor-patient relationship.

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