Pregnancy and HIV Infection

Laurie B. Hauer, RN

Seldom do political, economic, and social realities so dramatically influence the medical and mental health aspects of HIV infection as they do among mothers and infants. These influences are so strong because perinatal HIV infection primarily affects women of color who are inner-city intravenous (I.V.) drug users or sexual partners of I.V. drug users. Of the 8,983 cases of women with AIDS in the United States, reported as of August 1989, more than 50 percent occur among I.V. drug users, almost 80 percent are among women of childbearing age, and 70 percent are among Black or Latina women. In addition, more than 70 percent of mothers of children with AIDS are I.V. drug users or the sexual partners of I.V. drug users.

HIV-infected Black and Latina women are members of communities disproportionately affected not only by AIDS, but also by other serious health and economic problems, including major attacks on reproductive rights. It is the responsibility of medical and mental health professionals to provide information about HIV infection that will assist all women in making difficult decisions regarding pregnancy and childbearing. This article presents recommendations for HIV education and counseling.

HIV Infection and Pregnancy

A conclusive body of information about HIV infection and pregnancy is still evolving, and recent studies have presented contradictory findings. Questions currently under investigation include: the effects of HIV infection on the health of the fetus, the effects of pregnancy on HIV disease progression, the rates and mechanisms of maternal-fetal and maternal-infant transmission, the determination of HIV infection in an infant, and interventions to treat HIV infection in pregnant women and their infants.

Studies have both documented and failed to document adverse effects of HIV infection on pregnancy, including premature labor and birth, fetal death, and low birth weight infants. Similarly, researchers suggest that immunologic changes normally occurring during pregnancy may accelerate HIV disease progression and increase a woman's susceptibility to some opportunistic infections. Maternal co-factors such as drug use, poor baseline health, past or concurrent infections, lack of prenatal care, poor nutrition, and continued exposure to HIV through an infected sexual partner contribute to these adverse effects, and often confound research efforts.

Rates of maternal-fetal or maternal-infant HIV transmission have ranged from 20 percent to 65 percent. Generally, the transmission rate is estimated to be 30 percent to 50 percent. Regardless of the exact rate, there is no method of predicting which pregnant women will infect their fetuses or infants, and no way of determining exactly when HIV transmission occurs; it can occur antepartum (during pregnancy), intrapartum (at delivery), and postpartum (after delivery) through breast feeding.

The course of clinical care for HIV-infected pregnant women is determined on an individual basis. In general, however, routine antepartum care should be supplemented with an HIV-directed history and physical examination, and an expanded laboratory assessment to screen for viral and bacterial infections. Intrapartum care does not differ significantly from care for seronegative women, except that the use of fetal scalp blood sampling to test blood pH or scalp electrodes to track fetal heart rate should be avoided to decrease chances of HIV inoculation of the fetus. Mode of delivery (vaginal versus cesarean) does not appear to affect HIV transmission rates. Postpartum recommendations include avoiding breastfeeding, and developing a plan for care of the mother.

Treatment options for HIV-infected pregnant women are limited at this time, since until recently, women not using reliable methods of contraception and pregnant women have been excluded from treatment protocols testing drugs for HIV and its disease manifestations. Anecdotal reports of women taking AZT during pregnancy have suggested no harmful effects on fetal development; trials to determine both safety and efficacy of AZT in pregnant women are expected in the near future. Treatment for opportunistic infections in pregnant women should be determined on a case-by-case basis; some drugs are safe during pregnancy, some are not. Because researchers studying treatments for opportunistic conditions have followed so few pregnant women, health providers should contact other practitioners, with experience using the drug in question, to obtain the latest information regarding that drug.

It is critical that health workers remain non-directive and non-judgmental when discussing pregnancy options with HIV-infected women.

Counseling, Risk Assessment and Antibody Testing

The lack of definitive data on the subject makes discussing HIV infection and pregnancy difficult. Health care providers, however, must be prepared to offer HIV education, risk assessment and risk reduction strategies, and information about HIV antibody testing, as well as options for dealing with pregnancy. Appropriate education and counseling provides accurate, current information in a linguistically and culturally appropriate way, without judgments or directives for future action. It should also include referrals for further information, counseling, medical or social services, and antibody testing.

A careful analysis of the target population, local HIV prevalence, and the type of service practitioners provide will assist in determining the most effective education and risk assessment interventions for pregnant women and women considering pregnancy. This process is complicated because many women do not consider themselves to be at risk for HIV infection. Mass media AIDS prevention messages have not targeted women at greatest risk of HIV infection—women of color who are I.V. drug users or the sexual partners of I.V. drug users—and many of these women still believe that AIDS is a problem for gay white men alone. Even when these women are educated about AIDS, they often do not know if their sexual partners are having sex outside the relationship or engaging in I.V. drug use.

HIV risk assessment is a process by which an individual determines whether any past or present activity could have exposed her to HIV. Risk factors for HIV infection for women in the

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United States include: I.V. drug use; unprotected sex; receipt of blood products during the period from 1978 and 1985; and receipt of donor semen from an infected, at risk, or anonymous donor. If the possibility of risk exists, a woman must determine whether to take the HIV antibody test, as well as what actions she will take to avoid future HIV exposure or transmission.

Although HIV antibody testing will not identify all infected pregnant women or predict whether HIV will be transmitted perinatally, the screening process and its accompanying counseling offer an opportunity to teach women about safer sex and drug use practices. A positive antibody test result, or the knowledge that a negative result may be inaccurate due to continued exposure, may assist women in deciding whether to become pregnant, or whether to terminate or continue an existing pregnancy. If the pregnancy is to continue, a woman can plan for specialized obstetric and pediatric care and be aware of the presentation of symptoms of HIV infection in herself and in her infant. Finally, knowledge of positive antibody status may encourage a woman to seek treatment for HIV infection. While antibody testing remains controversial, such testing may become a routine part of prenatal care. In all cases, testing must be accompanied by education and counseling, and must include specific information about the social and legal consequences of the disclosure of test results.

Risk Reduction

During counseling about HIV infection and pregnancy, providers have an opportunity to deliver risk reduction information about drug use, sexual practices, and contraception. Counselors should offer I.V. drug users information about HIV transmission through the sharing of needles and other drug equipment, should facilitate enrollment into methadone detoxification or maintenance programs for heroin users, and should provide all I.V. drug users with information about cleaning needles and other drug equipment with bleach. Unfortunately, drug treatment programs dealing with the particular needs of women are rare, and few of the existing programs are residential. There are only three methadone treatment programs in the United States that are specifically designed for pregnant women. There are few non-methadone-based programs for heroin users and treatment programs of any type for intravenous cocaine use.

There is recent evidence that non-intravenous crack cocaine use is associated with an increased seroprevalence among users, due to presumed higher levels of unsafe sex. It is imperative that non-intravenous drug use be perceived as a risk behavior for HIV transmission, and that programs be implemented to treat its use.

The value of condoms and spermicides containing nonoxynol-9 in preventing both pregnancy and the sexual transmission of HIV is fairly well publicized; it is necessary, however, to reinforce the need for correct condom use even during pregnancy. Spermicides are generally not recommended for use during pregnancy due to possible harm to a developing fetus. HIV-infected women and their partners should also be instructed in the use of latex barriers ("dental dams") for oral sex.

Regardless of condom and spermicide use, HIV-infected women need specific contraceptive counseling to prevent unplanned pregnancy, and to maximize compliance with their chosen method of contraception. In choosing a contraceptive method, a woman must first decide whether future pregnancies are desired. While some providers may feel that sterilization is the best choice for HIV-infected women, this may not always be the case. A young, asymptomatic HIV-infected woman who has just given birth to her first child may not be a good candidate for sterilization: the infant may be infected and may die, while drug therapy may indefinitely prolong the mother's life and may also be capable of blocking viral transmission in future pregnancies.

There have been few published recommendations about the use by HIV-infected women of intrauterine devices (IUDs) or oral contraceptives. Providers should present information on all methods of contraception so that each woman can choose what is best for her. Providers also should discuss the possible risks of future pregnancy and of each contraceptive method, and should plan and reinforce the need for regular follow-up counseling and evaluation of the chosen method of contraception.

Options for Continuing or Terminating Pregnancy

The focus of discussion about options for HIV-infected pregnant women will depend on whether a woman discovered she was HIV-infected after she became pregnant, or whether she was already aware of her HIV infection when pregnancy occurred. In addition, it is essential to know the stage of a woman's pregnancy, since a discussion of pregnancy termination is of little use to a woman whose pregnancy is so far advanced that abortion is not an option. Once it is clear that, in terms of number of weeks of pregnancy, therapeutic abortion is an option, the provider can offer information and an opportunity to discuss whether to continue or terminate the pregnancy. If abortion is not an option, or is not chosen, then discussion should focus on understanding HIV infection and accepting the pregnancy.

Clinicians in New York and San Francisco have found that the majority of HIV-infected pregnant women do not choose to abort, even when this is an available option. For many women, childbearing is seen as life-affirming in the face of poverty, drug use, racism, and perhaps the loss of other children to foster care or AIDS. In addition, even a 50 percent perinatal transmission rate is perceived by some women as an acceptable risk. It is critical that health workers remain non-directive and non-judgmental when discussing pregnancy options.

In addition to providing information that will assist HIV-infected and at-risk women to decide whether to initiate, continue, or terminate a pregnancy, the provider should be prepared to make specific referrals for abortion services if these are desired. It is preferable that clinicians who perform these abortions be knowledgeable about AIDS and informed about their patients' HIV infection status, as these women may have HIV-related medical conditions requiring particular attention.

Conclusion

HIV-infected pregnant and potentially pregnant women are a unique population with specific needs for HIV education, risk assessment, counseling, and antibody testing. A wide range of medical and mental health providers must be able to provide information and services appropriate to these needs. Women I.V. drug users and sexual partners of I.V. drug users need HIV information and related prevention efforts before they are pregnant and before they are HIV infected. Only then can we reduce the spread of HIV from mothers to infants.

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Request for Submissions and Comments

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Caring for Children with HIV Infection

Ellen R. Cooper, MD

As of August 1989, 1,736 cases of pediatric AIDS were reported to the U.S. Centers for Disease Control (CDC). Of the current cases, 11 percent were exposed to HIV through blood transfusions, 6 percent were exposed through blood products for treatment of coagulation disorders, and, in a few isolated cases, children were exposed through sexual abuse and breast feeding. Most children with HIV infection, however, were born to mothers who themselves are infected with HIV; perinatal exposure accounts for approximately 80 percent of the cases of pediatric AIDS. By 1991, this number is expected to increase to over 13,000 cases among children under 13 years old.

As society braces for the explosion in pediatric cases, health care workers must prepare to handle the distinct clinical characteristics of infant and childhood HIV infection, which differs in transmission, manifestation and treatment from adult AIDS.

Diagnosis and Treatment

Virtually all children born to seropositive women receive passively transferred antibody from their mothers, and will test antibody positive for as long as 10 months whether or not they are HIV-infected. Techniques, other than antibody testing, may be employed to detect the actual presence of HIV—including tests for the virus itself, antigen, and viral DNA—however, these are still of unproven reliability. In practice, many cases of pediatric HIV disease are diagnosed early, since 50 percent of infants become ill within their first year. Approximately, 60 percent of children who have had AIDS have already died, the majority dying before the age of three.

Care of infants with HIV infection requires prompt recognition and treatment of infections, including frequent examinations by trained medical personnel to pick up early signs of disease, monitoring of immune function, and the use of sophisticated developmental assessments to detect subtle warning signs. Children may have symptoms of HIV infection during the first six months of life, and often have nonspecific warning signs of infection as early as the second month. Among these symptoms are: wasting or failure to grow, with or without chronic diarrhea; pulmonary disease; developmental delay; swollen glands; and recurrent bacterial infections and other common childhood illnesses. Of the opportunistic infections seen in the adult population, Pneumocystis carinii pneumonia (PCP) is the most common among children. HIV infection may arrest the development of children, or even cause the loss of developmental milestones, particularly in terms of motor skills.

There are currently no antiviral drugs approved for treating children, although there is some data, and continuing study, to suggest that AZT is useful in reversing disease progression when it is administered to symptomatic patients by continuous infusion. There remains controversy regarding the use of children as subjects in research protocols. However, in the absence of proven treatments, research studies have become the standard for delivery of AIDS care. This argues strongly for studying new drugs such as dideoxycytidine (ddC) and dideoxyinosine (ddI) in children as well as adults.

Aside from prompt and appropriate treatment of secondary infections, some physicians are advocating prophylactic therapies to prevent these conditions. Several centers have advocated the use of monthly infusions of intravenous immunoglobulin (antibodies to common organisms) for children with symptomatic HIV disease, and report both clinical and immunologic improvement in these patients. The treated children had fewer episodes of fever and infection, as well as stabilization of interstitial pneumonitis, an inflammation of the lungs. Although the efficacy of intravenous immunoglobulin is theoretically logical, to date, researchers have completed no well-controlled studies documenting this.

Prophylactic trimethoprim-sulfamethoxazole (Septra; Bactrim) is a beneficial treatment for PCP in those patients able to tolerate the drug. Children appear to tolerate this treatment better than their adult counterparts. Aerosolized pentamidine is only now beginning to be tested among children. Certainly all patients with PCP should receive prophylaxis to prevent recurrence, but many centers will treat any HIV-infected child whose T-cell count is beginning to fall or has already declined to 500.

Finally, the potential hazards from the use of routine childhood vaccines in HIV-infected children must be weighed against the actual risk of disease due to one of these "normal" childhood conditions. As with all children suffering from immunocompromising conditions, the use of most live-virus vaccines is inadvisable. Although there have been no reports of adverse reactions to live oral polio vaccine (OPV), the Immunizations Practices Advisory Committee of the CDC recommends using the inactivated form of vaccine in both symptomatic and asymptomatic seropositive infants. In light of reports of six cases of measles among HIV-infected children and scattered outbreaks of measles in the United States, the committee recommends that all children be given the measles-mumps-rubella (MMR) vaccine.

Infant and childhood HIV infection differs from adult AIDS in terms of transmission, manifestation and treatment.

Societal Response to Pediatric AIDS

Outside of the medical arena, children with AIDS are challenged by the insensitivity and misunderstanding of the people on whom they must rely for their well-being. For the past several years, children have been denied access to schools for fear they will infect their classmates. In addition, as the proportion of children born to mothers with HIV infection has grown, fear of contagion has reduced the number of foster parents willing to provide homes to these children.

Although HIV has been isolated from saliva, tears, stool and urine, no case of HIV infection has been identified in people with contact limited to only these bodily fluids, and multiple household contact studies have found no transmission among household members via these routes. Current CDC guidelines recommend that children with HIV infection attend school except, for example, when the child has oozing lesions, recurrent bleeding, or exhibits abnormal behavior, such as biting.

The growing pediatric AIDS epidemic will not be stemmed only through improvements in medical care or quality of life; prevention of transmission is necessary. Unlike most adults, who now can protect themselves against HIV infection, children, particularly those infected in utero, are unable to prevent their own infection. It is the responsibility of the fathers and mothers, and ultimately society, to protect their unborn children, as well as themselves, from HIV infection.

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References


Recent Reports


Seropositive intravenous (I.V.) drug users were only slightly more likely than their seronegative counterparts to choose to terminate their pregnancies, according to a small study of participants in a New York City methadone treatment program.

The longitudinal study followed 64 women, all of whom knew their antibody test results before the 24th week of pregnancy, the legal time limit for elective abortions in New York state. Women in the study were tested for HIV antibody and received counseling on the risk of perinatal HIV transmission, but counselors did not direct subjects toward a course of action. In addition, 36 women (14 seropositive and 22 seronegative) agreed to follow-up interviews, which occurred at least two months after their pregnancy outcomes.

Fourteen of 28 seropositive women (50 percent) and 16 of 36 seronegative women (44 percent) decided to terminate. The decision to abort was associated most, not with fear of perinatal HIV transmission, but a history of prior elective abortion. Among the women interviewed after outcomes, an unplanned pregnancy and negative emotional reactions to pregnancy predicted decisions to terminate. Seropositive women who chose to continue pregnancies cited religious beliefs and the desire to have a child as the most important reasons for their choices.

Study results may have been limited by the sample size, the fact that none of the seropositive subjects were symptomatic at the time of their decisions, and the fact that abortions in New York at the time of the study were covered by Medicaid. In addition, the researchers state that I.V. drug users may have unique reasons for choosing to have children in the face of HIV infection, for instance, as expressions of self-esteem, hope, or denial of illness.

Finally, although there were no statistically significant differences, termination was more common among both seronegative and seropositive women who underwent HIV testing prior to or early in pregnancy. The researchers conclude this suggests that timing of testing and counseling may affect pregnancy decisions.


A study following infants in Zaire for 12 months after birth found much higher rates of mortality, low birth weight, and premature birth among the children of seropositive, versus seronegative, mothers.

Researchers studied 475 infants born to seropositive women and 616 infants born to seronegative women at two hospitals in Kinshasa, one that served patients of lower socioeconomic status, and one that served patients of higher socioeconomic status. They found no significant differences in perinatal transmission between women at the two hospitals. Mothers were tested for HIV antibody and T4 cell levels. The umbilical cord blood of 92 infants was found not to contain HIV. In the subset of 37 women, six of 18 infants born to women with counts of 400 died within the first year of life; only two of these eight infants died with evidence of HIV infection by the time they were 18 months old. The study also found that while maternal risk factors were not predictors of seropositivity, five of six infants (83 percent) who were breast-fed became seropositive, compared to 25 of 99 (25 percent) who were bottle-fed.

Eight of 19 infants with positive cord-blood cultures died within the first year of life; only two of these eight infants died with conclusive evidence of AIDS. Cord-blood cultures did not correlate with antibody test results for infants who survived the first year of life. Researchers studied T4 cell levels in a subset of 37 women, and found that six of 18 infants born to women with counts of 400 or less prior to birth tested culture positive for HIV, compared to none of the infants of 19 women with counts above 400.

[Editor’s note: A multicenter study of 117 French infants, also published in the June 22, 1989 issue of The New England Journal of Medicine, predicted a 20 percent mortality rate among seropositive infants evaluated after 18 months, and concluded that one-third of infants born to seropositive mothers will have evidence of HIV infection by the time they are 18 months old. The study also found that while maternal risk factors were not predictors of seropositivity, five of six infants (83 percent) who were breast-fed became seropositive, compared to 25 of 99 (25 percent) who were bottle-fed.]

Guide to Educating Children with HIV Infection. The National Association of State Boards of Education says in a recently published guide that children with HIV infection should be free to attend school and that their serostatus should remain confidential. The 40-page guide, "Someone at School Has AIDS," addresses public policy and medical issues, and is available by sending $5.00 to: Publications Department, National Association of State Board of Education, 1012 Cameron Street, Alexandria, VA 22314.

Next Month

Presentations at the Fifth International AIDS Conference characterized partner notification as an appropriate and inevitable strategy for dealing with the epidemic. But partner notification—the process by which sexual and needle-sharing partners of HIV-infected people are informed about their potential exposures to HIV—raises questions regarding law, ethics and infection control, and has aroused debate particularly among those who are concerned about confidentiality. In the November issue of FOCUS, Robyn A. Meinhardt, JD, a Los Angeles attorney and the Chair of the AIDS Subcommittee of the L.A. County Bar Association, explores these issues, and offers insights about procedures for conducting partner notification.

The conflict between the right of privacy and the right to know about an exposure to HIV may be most unambiguous in cases of sexual abuse. In the November issue, Lynda M. Frattaroli, MA, MSW, Acting Director of the San Francisco Rape Treatment Center, discusses the legal and psychological implications of HIV infection when it becomes the concern of a person who has been raped.

FOCUS A GUIDE TO AIDS RESEARCH AND COUNSELING

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