

HIV Infection and AIDS: An Overview

AIDS (acquired immunodeficiency syndrome) was first reported in the United States in 1981 and has since become a major worldwide epidemic. AIDS is caused by HIV (human immunodeficiency virus). By killing or damaging cells of the body's immune system, HIV progressively destroys the body's ability to fight infections and certain cancers.

Transmission

HIV is spread most commonly by having unprotected sex with an infected partner. The virus can enter the body through the lining of the vagina, vulva, penis, rectum or mouth during sex.

Risky behavior

HIV can infect anyone who practices risky behaviors such as

- Sharing drug needles or syringes
- Having sexual contact, including oral, with an infected person without using a condom
- Having sexual contact with someone whose HIV status is unknown

Infected blood

HIV also is spread through contact with infected blood. Before donated blood was screened for evidence of HIV infection and before heat-treating techniques to destroy HIV in blood products were introduced, HIV was transmitted through transfusions of contaminated blood or blood components. Today, because of blood screening and heat treatment, the risk of getting HIV from such transfusions is extremely small.

Contaminated needles

HIV is frequently spread among injection drug users by the sharing of needles or syringes contaminated with very small quantities of blood from someone infected with the virus.

It is rare, however, for a patient to give HIV to a health care worker or vice-versa by accidental sticks with contaminated needles or other medical instruments.

Mother to child

Women can transmit HIV to their babies during pregnancy or birth. HIV also can be spread to babies through the breast milk of mothers infected with the virus. If the mother takes certain drugs during pregnancy, she can significantly reduce the chances that her baby will get infected with HIV. If health care providers treat HIV-infected pregnant women and deliver their babies by cesarean section, the chances of the baby being infected can be reduced to a rate of 1 percent. HIV infection of newborns has been almost eradicated in the United States due to appropriate treatment.

Saliva

Although researchers have found HIV in the saliva of infected people, there is no evidence that the virus is spread by contact with saliva. Scientists have found no evidence that HIV is spread through sweat, tears, urine or feces.

Casual contact

Studies of families of HIV-infected people have shown clearly that HIV is not spread through casual contact such as the sharing of food utensils, towels and bedding, swimming pools, telephones or toilet seats.

HIV is not spread by insects that bite, such as mosquitoes or bedbugs.

Sexually transmitted infections

If you have a sexually transmitted infection (STI) such as syphilis, genital herpes, chlamydial infection, gonorrhea or bacterial vaginosis, you may be more susceptible to getting HIV infection during sex with infected partners.

Early Symptoms of HIV Infection

If you are like many people, you will not have any symptoms when you first become infected with HIV. You may, however, have a flu-like illness within a month or two after exposure to the virus. This illness may include

- Fever
- Headache
- Tiredness
- Enlarged lymph nodes (glands of the immune system easily felt in the neck and groin)

These symptoms usually disappear within a week to a month and are often mistaken for those of another viral infection. During this period, people are very infectious, and HIV is present in large quantities in genital fluids.

More persistent or severe symptoms may not appear for 10 years or more after HIV first enters the body in adults, or within two years in children born with HIV infection. This period of "asymptomatic" infection varies greatly in each individual. Some people may begin to have symptoms within a few months, while others may be symptom-free for more than 10 years.

Even during the asymptomatic period, the virus is actively multiplying, infecting and killing cells of the immune system. The virus can also hide within infected cells and lay dormant. The most obvious effect of HIV infection is a decline in the number of CD4 positive T (CD4+) cells found in the blood—the immune system's key infection fighters. The virus slowly disables or destroys these cells without causing symptoms.

As the immune system worsens, a variety of complications start to take over. For many people, the first signs of infection are large lymph nodes or "swollen glands" that may be enlarged for more than three months. Other symptoms often experienced months to years before the onset of AIDS include

- Lack of energy
- Weight loss
- Frequent fevers and sweats
- Persistent or frequent yeast infections (oral or vaginal)
- Persistent skin rashes or flaky skin
- Pelvic inflammatory disease in women that does not respond to treatment
- Short-term memory loss

Some people develop frequent and severe herpes infections that cause mouth, genital, or anal sores, or a painful nerve disease called shingles. Children may grow slowly or be sick a lot.

What is AIDS?

The term AIDS applies to the most advanced stages of HIV infection.

Symptoms of opportunistic infections common in people with AIDS include

- Coughing and shortness of breath
- Seizures and lack of coordination
- Difficult or painful swallowing
- Mental symptoms such as confusion and forgetfulness
- Severe and persistent diarrhea

- Fever
- Vision loss
- Nausea, abdominal cramps, and vomiting
- Weight loss and extreme fatigue
- Severe headaches
- Coma

Children with AIDS may get the same opportunistic infections as do adults with the disease. In addition, they also have severe forms of the typically common childhood bacterial infections, such as conjunctivitis (pink eye), ear infections, and tonsillitis.

People with AIDS are also particularly prone to developing various cancers, especially those caused by viruses such as Kaposi's sarcoma and cervical cancer, or cancers of the immune system known as lymphomas. These cancers are usually more aggressive and difficult to treat in people with AIDS. Signs of Kaposi's sarcoma in light-skinned people are round brown, reddish or purple spots that develop in the skin or in the mouth. In dark-skinned people, the spots are more pigmented.

Many people are so debilitated by the symptoms of AIDS that they cannot hold a steady job or do household chores. Other people with AIDS may experience phases of intense life-threatening illness followed by phases in which they function normally.

Diagnosis

Because early HIV infection often causes no symptoms, your health care provider usually can diagnose it by testing your blood for the presence of antibodies (disease-fighting proteins) to HIV. HIV antibodies generally do not reach noticeable levels in the blood for 1 to 3 months following infection. It may take the antibodies as long as 6 months to be produced in quantities large enough to show up in standard blood tests. Hence, to determine whether you have been recently infected (acute infection), your health care provider can screen you for the presence of HIV genetic material. Direct screening of HIV is extremely critical in order to prevent transmission of HIV from recently infected individuals.

If you have been exposed to the virus, you should get an HIV test as soon as you are likely to develop antibodies to the virus—within six weeks to 12 months after possible exposure to the virus. By getting tested early, if infected, you can discuss with your health care provider when you should start treatment to help your immune system combat HIV and help prevent the emergence of certain opportunistic infections (see section on treatment below). Early testing also alerts you to avoid high-risk behaviors that could spread the virus to others.

Most health care providers can do HIV testing and will usually offer you counseling at the same time. Of course, you can be tested anonymously at many sites if you are concerned about confidentiality.

Babies born to mothers infected with HIV may or may not be infected with the virus, but all carry their mothers' antibodies to HIV for several months. If these babies lack symptoms, a doctor cannot make a definitive diagnosis of HIV infection using standard antibody. Health care providers are using new technologies to detect HIV to more accurately determine HIV infection in infants between ages 3 months and 15 months. They are evaluating a number of blood tests to determine which ones are best for diagnosing HIV infection in babies younger than 3 months.

Treatment

When AIDS first surfaced in the United States, there were no medicines to combat the underlying immune deficiency and few treatments existed for the opportunistic diseases that resulted. Researchers, however, have developed drugs to fight both HIV infection and its associated infections and cancers.

The Food and Drug Administration (FDA) has approved a number of drugs for treating HIV infection. The first group of drugs used to treat HIV infection, called nucleoside reverse transcriptase (RT) inhibitors, interrupts an early stage of the virus making copies of itself. These drugs may slow the spread of HIV in the body and delay the start of opportunistic infections.

The FDA also has approved a second class of drugs for treating HIV infection. These drugs, called protease inhibitors, interrupt the virus from making copies of itself at a later step in its life cycle.

The FDA also has introduced a third new class of drugs, known as fusion inhibitors, to treat HIV infection. Fuzeon (enfuvirtide or T-20), the first approved fusion inhibitor, is designed for use in combination with other anti-HIV treatment. It reduces the level of HIV infection in the blood and may be active against HIV that has become resistant to current antiviral treatment schedules.

Because HIV can become resistant to any of these drugs, health care providers must use a combination treatment to effectively suppress the virus. When multiple drugs (three or more) are used in combination, it is referred to as highly active antiretroviral therapy, or HAART, and can be used by people who are newly infected with HIV as well as people with AIDS.

Researchers have credited HAART as being a major factor in significantly reducing the number of deaths from AIDS in this country. While HAART is not a cure for AIDS, it has greatly improved the health of many people with AIDS and it reduces the amount of virus circulating in the blood to nearly undetectable levels. Researchers, however, have shown that HIV remains present in hiding places, such as the lymph nodes, brain, testes and retina of the eye, even in people who have been treated.

Side effects

Despite the beneficial effects of HAART, there are side effects associated with the use of antiviral drugs that can be severe. Some of the nucleoside RT inhibitors may cause a decrease of red or white blood cells, especially when taken in the later stages of the disease. Some may also cause inflammation of the pancreas and painful nerve damage. There have been reports of complications and other severe reactions, including death, to some of the antiretroviral nucleoside analogs when used alone or in combination. Therefore, health care experts recommend that you be routinely seen and followed by your health care provider if you are on antiretroviral therapy.

The most common side effects associated with protease inhibitors include nausea, diarrhea and other gastrointestinal symptoms. In addition, protease inhibitors can interact with other drugs resulting in serious side effects. Fuzeon may also cause severe allergic reactions such as pneumonia, trouble breathing, chills and fever, skin rash, blood in urine, vomiting, and low blood pressure. Local skin reactions are also possible since it is given as an injection underneath the skin.

If you are taking HIV drugs, you should contact your health care provider immediately if you have any of these symptoms.

Prevention

Because no vaccine for HIV is available, the only way to prevent infection by the virus is to avoid behaviors that put you at risk of infection, such as sharing needles and having unprotected sex.

Many people infected with HIV have no symptoms. Therefore, there is no way of knowing with certainty whether your sexual partner is infected unless he or she has repeatedly tested negative for the virus and has not engaged in any risky behavior. You should either abstain from having sex or use male latex condoms or female polyurethane condoms, which may offer partial protection, during oral, anal or vaginal sex. Only water-based lubricants should be used with male latex condoms.

Although some laboratory evidence shows that spermicides can kill HIV, researchers have not found that these products can prevent you from getting HIV.

Resources Are Available

Additional information, self-help tools and other resources are available online at www.MagellanHealth.com. Or call us for more information, help and support. Counselors are available 24 hours a day, seven days a week to provide confidential assistance at no cost to you.