



## CLINICAL FOCUS

### Infectious Diseases

#### SEXUALLY TRANSMITTED DISEASES

**Sexually transmitted diseases (STDs)** are a class of infectious diseases spread by intimate sexual contact between individuals. These diseases include the major venereal diseases nongonococcal urethritis, trichomoniasis, gonorrhea, genital herpes, genital warts, syphilis, and acquired immunodeficiency syndrome.

**Nongonococcal urethritis** is any inflammation of the urethra that is not caused by gonorrhea. Factors such as trauma or the passage of a nonsterile catheter through the urethra can cause this condition, but many cases are acquired through sexual contact. In most cases, the bacterium *Chlamydia trachomatis* is responsible, but other bacteria may be involved. This infection often is unrecognized in people who have it and is responsible for many cases of pelvic inflammatory disease. Left untreated, it can also result in sterility, but antibiotics are usually effective in curing the condition.

*Trichomonas vaginalis* is a protozoan commonly found in the vagina of females and the urethra of males. If the normal acidity of the

vagina is disturbed, *Trichomonas* can grow rapidly. *Trichomonas* infection is more common in females than in males because the vagina provides a suitable environment in which these organisms can survive. The rapid growth of these organisms results in inflammation and a greenish yellow discharge characterized by a foul odor.

**Gonorrhea** (gon-o-re'a) is caused by the bacterium *Neisseria gonorrhoeae*. The organisms attach to the epithelial cells of the vagina or to the male urethra. The invasion of bacteria establishes an inflammatory response in which pus is formed. Males become aware of a gonorrheal infection by painful urination and the discharge of pus-containing material from the urethra. Symptoms appear within a few days to a week. Recovery may eventually occur without complication but, when complications do occur, they can be serious. The urethra can become partially blocked, or sterility can result from the blockage of the reproductive ducts with scar tissue. In some cases, other organ systems, such as the heart, meninges

of the brain, or joints, may become infected. In females, the early stages of infection may pass unnoticed, but the infection can lead to pelvic inflammatory disease. Gonorrheal eye infections may occur in the newborn children of females with gonorrheal infections. Antibiotics are usually effective in treating gonorrheal infections, and the immune system often successfully combats gonorrheal infections in untreated individuals.

**Genital herpes** (her'pez) is a viral infection usually caused by herpes simplex type 2. Lesions appear after an incubation period of about 1 week and cause a burning sensation. After this, blisterlike areas of inflammation appear. In males and females, urination can be painful, and walking or sitting can be unpleasant, depending on the location of the lesions. The blisterlike areas heal in about 2 weeks. The lesions may recur. The viruses exist in a latent condition in nerve cells and may produce inflamed lesions on the genitals in response to factors such as menstruation, emotional stress, or illness. If active lesions

are present in the mother's vagina or external genitalia, a cesarean delivery is performed to prevent newborns from becoming infected with the herpes virus. Because genital herpes is caused by a virus, no effective antibiotic cure for it is available.

**Genital warts** also result from a viral infection (human papillomavirus) and are quite contagious. This disease is common, and its frequency is increasing. Genital warts can also be transmitted from infected mothers to their infants. Genital warts vary from separate, small, warty growths to large, cauliflower-like clusters. The lesions are usually not painful, but they can cause painful intercourse, and they bleed easily. Women who have genital warts have an increased risk for cervical cancer. Treatments for genital warts include topical agents, cryosurgery, and other surgical methods.

**Syphilis** (sif'i-lis) is caused by the bacterium *Treponema pallidum*, which can be spread by sexual contact of all kinds. Syphilis exhibits an incubation period from 2 weeks to several months. The disease progresses through several recognized stages. In the primary stage, the initial symptom is a small, hard-based **chancre** (shan'ker), or sore, that usually appears at the site of infection. Several weeks after the primary stage, the disease enters the secondary stage,

characterized mainly by skin rashes and mild fever. The symptoms of secondary syphilis usually subside after a few weeks, and the disease enters a latent period, in which no symptoms are present. In less than half the cases, a tertiary stage develops after many years. In the tertiary stage, many lesions develop that can cause extensive tissue damage and can lead to paralysis, insanity, and even death. Syphilis can be passed on to newborns by an infected mother. Damage to mental development and other neurologic symptoms are among the more serious consequences. Females who have syphilis in the latent phase are most likely to have babies who are infected. Antibiotics are used to treat syphilis, although some strains are very resistant to certain antibiotics.

**Acquired immunodeficiency syndrome (AIDS)** is caused by infection with the human immunodeficiency virus (HIV), which appears to result in the destruction of the immune system (see chapter 22). The most common mechanisms of viral transmission are through sexual contact with a person infected with HIV and through the sharing of needles with an infected person during the administration of illicit drugs. Although transmission did occur during the early 1980s through tainted blood products, screening techniques

now make the transmission of HIV through blood transfusions very rare. Some rare cases of transmission of HIV through accidental needle sticks in hospitals and other health-care facilities have been documented. No evidence exists that casual contact with a person who has AIDS or who is infected with HIV results in transmission of the disease. Transmission appears to require exposure to the body fluids of an infected person in a way that allows HIV to enter the interior of another person. Normal casual contact, including touching an HIV-infected person, does not increase the risk for infection.

#### PELVIC INFLAMMATORY DISEASE

**Pelvic inflammatory disease (PID)** is a bacterial infection of the female pelvic organs. It usually involves the uterus, uterine tubes, or ovaries. A vaginal or uterine infection may spread throughout the pelvis. Gonorrhea and chlamydia are the most common causes of PID; however, other bacteria can be involved. Early symptoms of PID include increased vaginal discharge and pelvic pain. Early treatment with antibiotics can stop the spread of PID, but lack of treatment results in a life-threatening infection. PID can also lead to sterility.