



National Institute of Allergy and Infectious Diseases
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Human Papillomavirus and Genital Warts

OVERVIEW

Human papillomavirus

Human papillomavirus (HPV) is one of the most common causes of sexually transmitted infection (STI) in the world. Health experts estimate there are more cases of genital HPV infection than any other STI in the United States. According to the Centers for Disease Control and Prevention (CDC), approximately 6.2 million new cases of sexually transmitted HPV infections are reported every year. At least 20 million people in this country are already infected.

Genital warts

Genital warts (sometimes called condylomata acuminata or venereal warts) are the most easily recognized sign of genital HPV infection. Many people, however, have a genital HPV infection without genital warts.

Genital warts are soft, moist, or flesh colored and appear in the genital area within weeks or months after infection. They sometimes appear in clusters that resemble cauliflower-like bumps, and are either raised or flat, small or large. Genital warts can show up in women on the vulva and cervix, and inside and surrounding the vagina and anus. In men, genital warts can appear on the scrotum or penis. There are cases where genital warts have been found on the thigh and groin.

CAUSE

More than 100 different types of HPV exist, most of which are harmless. About 30 types are spread through sexual contact and are classified as either low risk or high risk. Some types of HPV cause genital warts—single or multiple bumps that appear in the genital areas of men and women including the vagina, cervix, vulva (area outside of the vagina), penis, and rectum. These are considered low risk types. High-risk types of HPV may cause abnormal Pap smear results and could lead to cancers of the cervix, vulva, vagina, anus, or penis. Many people infected with HPV have no symptoms.

Some types of HPV cause common skin warts, such as those found on the hands and soles of the feet. These types of HPV do not cause genital warts.

TRANSMISSION

Genital warts are very contagious. You can get them during oral, vaginal, or anal sex with an infected partner. You can also get them by skin-to-skin contact during vaginal, anal, or (rarely) oral sex with someone who is infected. About two-thirds of people who have sexual contact with a partner with genital warts will develop warts, usually within 3 months of contact.

In women, the warts occur on the outside and inside of the vagina, on the opening to the uterus (cervix), or around the anus.

In men, genital warts are less common. If present, they usually are seen on the tip of the penis. They also may be found on the shaft of the penis, on the scrotum, or around the anus.

Rarely, genital warts also can develop in your mouth or throat if you have oral sex with an infected person.

Like many STIs, genital HPV infections often do not have signs and symptoms that can be seen or felt. One study sponsored by the National Institute of Allergy and Infectious Diseases (NIAID) reported that almost half of women infected with HPV had no obvious symptoms. If you are infected but have no symptoms, you can still spread HPV to your sexual partner and/or develop complications from the virus.

DIAGNOSIS

HPV infection is usually diagnosed based on results from an abnormal Pap smear, a primary cancer-screening tool for cervical cancer or pre-cancerous changes of the cervix. Another test to diagnose HPV infection detects the HPV DNA, which may indicate possible infection.

Your health care provider usually diagnoses genital warts by seeing them. If you are a woman with genital warts, you also should be examined for possible HPV infection of the cervix.

Your provider may be able to identify some otherwise invisible warts in your genital tissue by applying vinegar (acetic acid) to areas of your body that might be infected. This solution causes infected areas to whiten, which makes them more visible. In some cases, a health care provider will take a small piece of tissue from the cervix and examine it under the microscope.

TREATMENT

There are treatments for genital warts, though they often disappear even without treatment. There is no way to predict whether the warts will grow or disappear. Therefore, if you suspect you have genital warts, you should be examined and treated, if necessary.

Depending on factors such as the size and location of your genital warts, your health care provider will offer you one of several ways to treat them.

- Imiquimod cream
- 20 percent podophyllin antimitotic solution
- 0.5 percent podofilox solution
- 5 percent 5-fluorouracil cream
- Trichloroacetic acid (TCA)

If you are pregnant, you should not use podophyllin or podofilox because they are absorbed by your skin and may cause birth defects in your baby. In addition, you should not use 5-fluorouracil cream if you are pregnant.

If you have small warts, your health care provider can remove them by one of three methods.

- Freezing (cryosurgery)
- Burning (electrocautery)
- Laser treatment

If you have large warts that have not responded to other treatment, you may have to have surgery to remove them.

Some health care providers inject the antiviral drug alpha interferon directly into warts that have returned after removal by traditional means. The drug is expensive, however, and does not reduce the rate that the genital warts return.

Although treatments can get rid of the warts, none get rid of the virus. Because the virus is still present in your body, warts often come back after treatment.

PREVENTION

The only way you can prevent getting an HPV infection is to avoid direct contact with the virus, which is transmitted by skin-to-skin contact. If you or your sexual partner has warts that are visible in the genital area, you should avoid any skin-to-skin and sexual contact until the warts are treated.

Historically, research studies have not confirmed that male latex condoms prevent transmission of HPV. Recent studies, however, demonstrate that consistent condom use by male partners suggests strong protection against low and high risk types of HPV infection in women. Unfortunately, many people who don't have symptoms don't know that they can spread the virus to an uninfected partner.

COMPLICATIONS

Cancer

Some types of HPV can cause cervical cancer. Other types are associated with vulvar cancer, anal cancer, and cancer of the penis (a rare cancer).

Most HPV infections do not progress to cervical cancer. If you are a woman with abnormal cervical cells, a Pap smear will detect them. If you have abnormal cervical

cells, it is particularly important for you to have regular pelvic exams and Pap smears so you can be treated early, if necessary.

Pregnancy and Childbirth

Genital warts may cause a number of problems during pregnancy. Because genital warts can multiply and become brittle, your health care provider will discuss options for their removal, if necessary. Genital warts also may be removed to ensure a safe and healthy delivery of the newborn. Sometimes they get larger during pregnancy, making it difficult to urinate if the warts are in the urinary tract. If the warts are in the vagina, they can make the vagina less elastic and cause obstruction during delivery.

Rarely, infants born to women with genital warts develop warts in their throats (respiratory papillomatosis). Although uncommon, it is a potentially life-threatening condition for the child, requiring frequent laser surgery to prevent obstruction of the breathing passages. Research on the use of interferon therapy with laser surgery indicates that this drug may show promise in slowing the course of the disease.

RESEARCH

Scientists are doing research on HPV vaccines. These vaccines are made of proteins like the ones found in human papillomavirus.

In June 2006, the Food and Drug Administration approved Gardasil, the first vaccine developed to prevent cervical cancer, precancerous genital lesions, and genital warts due to HPV. Gardasil is a vaccine that prevents infection with four HPV types: 6, 11, 16, and 18. Types 6 and 11 are low risk HPV types, associated with 90 percent of genital warts. Types 16 and 18 are high risk HPV types which together cause 70 percent of the cases of cervical cancer.

The National Cancer Institute and CDC have more information on the HPV vaccine at www.cancer.gov/cancertopics/hpv-vaccines and www.cdc.gov/std/hpv/STDFact-HPV-vaccine.htm , respectively.

MORE INFORMATION

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