Genital Warts

Treatment Guidelines

By:

TreatGenitalWarts.org
HPV types 6 or 11 are commonly found before, or at the time of, detection of genital warts; however, the use of HPV testing for genital wart diagnosis is not recommended.

Genital warts are usually flat, papular, or pedunculated growths on the genital mucosa. Diagnosis of genital warts is made by visual inspection and may be confirmed by biopsy, although biopsy is needed only under certain circumstances (e.g., if the diagnosis is uncertain; the lesions do not respond to standard therapy; the disease worsens during therapy; the patient is immunocompromised; or warts are pigmented, indurated, fixed, bleeding, or ulcerated). No data support the use of HPV nucleic acid tests in the routine diagnosis or management of visible genital warts.

The application of 3%-5% acetic acid usually turns HPV-infected genital mucosal tissue to a whitish color. However, acetic acid application is not a specific test for HPV infection, and the specificity and sensitivity of this procedure for screening have not been defined. Therefore, the routine use of this procedure for screening to detect HPV infection is not recommended. However, some clinicians, who are experienced in the management of genital warts, have determined that this test is useful for identifying flat genital warts.

In addition to the external genitalia (i.e., penis, vulva, scrotum, perineum, and perianal skin), genital warts can occur on the uterine cervix and in the vagina, urethra, anus, and mouth. Intra-anal warts are observed predominantly in patients who have had receptive anal intercourse; these warts are distinct from perianal warts, which can occur in men and women who do not have a history of anal sex. In addition to the genital area, HPV types 6 and 11 have been associated with conjunctival, nasal, oral, and laryngeal warts. Genital warts are usually asymptomatic, but depending on the size and anatomic location, genital warts can be painful, friable, or pruritic.

HPV types 16, 18, 31, 33, and 35 are found occasionally in visible genital warts and have been associated with external genital (i.e., vulvar, penile, and anal) squamous intraepithelial neoplasia (i.e., squamous cell carcinoma in situ, bowenoid papulosis, Erythroplasia of Queyrat, or Bowen’s disease of the genitalia). These HPV types also
have been associated with vaginal, anal, and CIN and anogenital and some head and neck squamous cell carcinomas. Patients who have visible genital warts are frequently infected simultaneously with multiple HPV types.

**Treatment**

The primary goal of treating visible genital warts is the removal of the warts. In the majority of patients, treatment can induce wart-free periods. If left untreated, visible genital warts might resolve on their own, remain unchanged, or increase in size or number. Treatment possibly reduces, but does not eliminate, HPV infection. Existing data indicate that currently available therapies for genital warts might reduce, but probably do not eradicate, HPV infectivity. Whether the reduction in HPV viral DNA, resulting from treatment, impacts future transmission remains unclear. No evidence indicates that the presence of genital warts or their treatment is associated with the development of cervical cancer.

**Regimens**

Treatment of genital warts should be guided by the preference of the patient, the available resources, and the experience of the health-care provider. No definitive evidence suggests that any of the available treatments are superior to any other and no single treatment is ideal for all patients or all warts. The use of locally developed and monitored treatment algorithms has been associated with improved clinical outcomes and should be encouraged. Because of uncertainty regarding the effect of treatment on future transmission of HPV and the possibility of spontaneous resolution, an acceptable alternative for some persons is to forego treatment and wait for spontaneous resolution.

The majority of patients have <10 genital warts, with a total wart area of 0.5–1.0 cm². These warts respond to various treatment modalities. Factors that might influence selection of treatment include wart size, wart number, anatomic site of wart, wart morphology, patient preference, cost of treatment, convenience, adverse effects, and provider experience. Factors that might affect response to therapy include the presence of immunosuppression and compliance with therapy. The majority of patients require a
course of therapy rather than a single treatment. In general, warts located on moist surfaces or in intertriginous areas respond better to topical treatment than do warts on drier surfaces.

The treatment modality should be changed if a patient has not improved substantially. The majority of genital warts respond within 3 months of therapy. The response to treatment and its side effects should be evaluated throughout the course of therapy.

Complications occur rarely if treatments for warts are employed properly. Patients should be warned that persistent hypopigmentation or hyperpigmentation occurs commonly with ablative modalities. Depressed or hypertrophic scars are uncommon but can occur, especially if the patient has had insufficient time to heal between treatments. Rarely, treatment can result in disabling chronic pain syndromes (e.g., vulvodynia or analdynia, and hyperesthesia of the treatment site) or, in the case of rectal warts, painful defecation or fistulas. A limited number of case reports of severe systemic effects from podophyllin resin and interferon have been documented.

Treatment regimens are classified into patient-applied and provider-applied modalities. Patient-applied modalities are preferred by some patients because they can be administered in the privacy of the patient’s home. To use patient-applied modalities effectively, compliance with the treatment regimen is important along with the ability to identify and reach all genital warts.

**Recommended Regimens for External Genital Warts**

**Patient-Applied:**

**Natural Homeopathic Solution** with natural ingredients. [Wartrol Homeopathic Genital Wart Relief](#)

OR

**Podofilox** 0.5% solution or gel. Patients should apply podofilox solution with a cotton swab, or podofilox gel with a finger, to visible genital warts twice a day for 3 days, followed by 4 days of no therapy. This cycle may be repeated, as necessary, for up to four
cycles. The total wart area treated should not exceed 10 cm², and the total volume of podoflox should be limited to 0.5 mL per day. If possible, the health-care provider should apply the initial treatment to demonstrate the proper application technique and identify which warts should be treated. The safety of podoflox during pregnancy has not been established.

OR

**Imiquimod 5% cream.** Patients should apply imiquimod cream once daily at bedtime, three times a week for up to 16 weeks. The treatment area should be washed with soap and water 6–10 hours after the application. The safety of imiquimod during pregnancy has not been established.

Provider-Administered:

**Cryotherapy** with liquid nitrogen or cryoprobe. Repeat applications every 1–2 weeks.

OR

**Podophyllin resin 10%–25%** in a compound tincture of benzoin. A small amount should be applied to each wart and allowed to air dry. The treatment can be repeated weekly, if necessary. To avoid the possibility of complications associated with systemic absorption and toxicity, two important guidelines should be followed: 1) application should be limited to <0.5 mL of podo-phyllin or an area of <10 cm² of warts per session, and 2) no open lesions or wounds should exist in the area to which treatment is administered. Some specialists suggest that the preparation should be thoroughly washed off 1–4 hours after application to reduce local irritation. The safety of podophyllin during pregnancy has not been established.

OR

**Trichloroacetic acid (TCA) or Bichloroacetic acid (BCA) 80%–90%.** A small amount should be applied only to the warts and allowed to dry, at which time a white “frosting” develops. If an excess amount of acid is applied, the treated area should be powdered with talc, sodium bicarbonate (i.e., baking soda), or liquid soap preparations to remove unreacted acid. This treatment can be repeated weekly, if necessary.

OR
Surgical removal either by tangential scissor excision, tangential shave excision, curettage, or electrosurgery

**Alternative Regimens**

**Homeopathic Relief**

Homeopathy is based upon the "law of similars". The idea is an ingredient that causes a certain symptom can help trigger the body to "fight" that symptom. Homeopathic principals teach that even a minute amount of the element will trigger a response from the immune system. The body then begins to heal itself.

This is the same principal for vaccinations. To protect you against small pox or diphtheria, you are vaccinated with a small amount of the toxin, and then your body develops immunity against that toxin.

With homeopathic medicine, even a very tiny amount will set your immune system in action.

Congress recognized Homeopathic Drugs as a class of regulated products 1938, with the passage of the Federal Food, Drug and Cosmetic Act. Today, homeopathic medicine is regulated by the FDA, but does not require approval by the Agency.

**Wartrol Homeopathic Genital Wart Relief** can help relieve some of the symptoms. It's easy to take, and safe. And the big plus is that it's natural. It's made from herbs and minerals found in nature.

To learn more about homeopathy relief using Wartrol [click here](#)

**Intralesional interferon**

OR

**Laser surgery**

Podofilox 0.5% solution or gel, an antimitotic drug that destroys warts, is relatively inexpensive, easy to use, safe, and self-applied by patients. The majority of patients...
experience mild-to-moderate pain or local irritation after treatment. Imiquimod is a topically active immune enhancer that stimulates production of interferon and other cytokines. Local inflammatory reactions are common with the use of imiquimod; these reactions include redness and irritation and are usually mild to moderate. Traditionally, follow-up visits are not required for patients using self-administered therapy. However, follow-up might be useful several weeks into therapy to determine the appropriateness of medication use and the response to treatment.

Cryotherapy destroys warts by thermal-induced cytolysis. Health-care providers must be trained on the proper use of this therapy because over- and undertreatment might result in complications or low efficacy. Pain after application of the liquid nitrogen, followed by necrosis and sometimes blistering, is common. Local anesthesia (topical or injected) might facilitate therapy if warts are present in many areas or if the area of warts is large.

Podophyllin resin, which contains several compounds, including antimitotic podophyllin lignans, is another treatment option. The resin is most frequently compounded at 10%–25% in a tincture of benzoin. However, podophyllin resin preparations differ in the concentration of active components and contaminants. The shelf life and stability of podophyllin preparations are unknown. A thin layer of podophyllin resin must be applied to the warts and allowed to air dry before the treated area comes into contact with clothing; overapplication or failure to air dry can result in local irritation caused by spread of the compound to adjacent areas.

Both TCA and BCA are caustic agents that destroy warts by chemical coagulation of proteins. Although these preparations are widely used, they have not been investigated thoroughly. TCA solutions have a low viscosity comparable with that of water and can spread rapidly if applied excessively; therefore, they can damage adjacent tissues. Both TCA and BCA should be applied sparingly and allowed to dry before the patient sits or stands. If pain is intense, the acid can be neutralized with soap or sodium bicarbonate.

Surgical therapy has the advantage of usually eliminating warts at a single visit. However, such therapy requires substantial clinical training, additional equipment, and a
longer office visit. After local anesthesia is applied, the visible genital warts can be physically destroyed by electrocautery, in which case no additional hemostasis is required. Care must be taken to control the depth of electrocautery to prevent scarring. Alternatively, the warts can be removed either by tangential excision with a pair of fine scissors or a scalpel or by curettage. Because the majority of warts are exophytic, this procedure can be accomplished with a resulting wound that only extends into the upper dermis. Hemostasis can be achieved with an electrocautery unit or a chemical styptic (e.g., an aluminum chloride solution). Suturing is neither required nor indicated in the majority of cases if surgical removal is performed properly. Surgical therapy is most beneficial for patients who have a large number or area of genital warts. Carbon dioxide laser and surgery might be useful in the management of extensive warts or intraurethral warts, particularly for those patients who have not responded to other treatments.

Interferons, both natural or recombinant, have been used for the treatment of genital warts. They have been administered systemically (i.e., subcutaneously at a distant site or IM) and intraleisionally (i.e., injected into the warts). Systemic interferon is not effective. The efficacy and recurrence rates of intraleional interferon are comparable to other treatment modalities. Administration of intraleional interferon is associated with stinging, burning, and pain at the injection site. Interferon is probably effective because of its antiviral and/or immunostimulating effects. Interferon therapy is not recommended as a primary modality because of inconvenient routes of administration, frequent office visits, and the association between its use and a high frequency of systemic adverse effects.

Because of the shortcomings associated with all available treatments, some clinics employ combination therapy (i.e., the simultaneous use of two or more modalities on the same wart at the same time). No data support the use of more than one therapy at a time to improve efficacy of treatment, and some specialists believe that combining modalities might increase complications.

**Recommended Regimens for Cervical Warts**
For women who have exophytic cervical warts, high-grade SIL must be excluded before treatment is initiated. Management of exophytic cervical warts should include consultation with a specialist.

**Recommended Regimens for Vaginal Warts**

**Natural Homeopathic Solution** with natural ingredients. [Wartrol Homeopathic Genital Wart Relief](#)

**OR**

**Cryotherapy** with liquid nitrogen. The use of a cryo-probe in the vagina is not recommended because of the risk for vaginal perforation and fistula formation.

**OR**

**TCA or BCA 80%–90%** applied to warts. A small amount should be applied only to warts and allowed to dry, at which time a white “frosting” develops. If an excess amount of acid is applied, the treated area should be powdered with talc, sodium bicarbonate, or liquid soap preparations to remove unreacted acid. This treatment can be repeated weekly, if necessary.

**Recommended Regimens for Urethral Meatus Warts**

**Natural Homeopathic Solution** with natural ingredients. [Wartrol Homeopathic Genital Wart Relief](#)

**OR**

**Cryotherapy** with liquid nitrogen

**OR**

**Podophyllin 10%–25%** in compound tincture of benzoin. The treatment area must be dry before contact with normal mucosa. This treatment can be repeated weekly, if necessary. The safety of podophyllin during pregnancy has not been established.

Although data evaluating the use of podoflox and imiquimod for the treatment of distal meatal warts are limited, some specialists recommend their use in some patients.

**Recommended Regimens for Anal Warts**
Natural Homeopathic Solution with natural ingredients. Wartrol Homeopathic Genital Wart Relief

Cryotherapy with liquid nitrogen

OR

TCA or BCA 80%–90% applied to warts. A small amount should be applied only to warts and allowed to dry, at which time a white “frosting” develops. If an excess amount of acid is applied, the treated area should be powdered with talc, sodium bicarbonate, or liquid soap preparations to remove unreacted acid. This treatment can be repeated weekly, if necessary.

OR

Surgical removal

Warts on the rectal mucosa should be managed in consultation with a specialist. Many persons with warts on the anal mucosa also have warts on the rectal mucosa, so persons with anal warts can benefit from an inspection of the rectal mucosa by digital examination or anoscopy.

Counseling

Genital HPV Infection

Education and counseling are vital aspects of managing patients with genital warts. Patients can be educated through patient education materials, including pamphlets, hotlines, and websites (http://www.ashastd.org or http://www.cdc.gov/std/hpv).

Attempts should be made to convey the following key messages:

- Genital HPV infection is common among sexually active adults. The majority of sexually active adults will have it at some point in their lives, although the majority of them will never know because the infection usually has no symptoms and clears on its own.
• Genital HPV infection is usually sexually transmitted. The incubation period (i.e., the interval between initial exposure and established infection or disease) is variable, and determining the timing and source of infection is frequently difficult. Within ongoing sexual relationships, sex partners usually are infected by the time of the patient’s diagnosis, although they might have no symptoms or signs of infection.

• No recommended uses of the HPV test to diagnose HPV infection in sex partners have been established. HPV infection is commonly transmitted to partners but usually goes away on its own.

Genital Warts

• Genital warts are caused by specific types of HPV infection. The types that cause genital warts are different from the types that cause cervical and other anogenital cancers.

• Persons can possibly have infection with the types of HPV that cause genital warts but never develop symptoms. Why some persons with genital HPV infection develop warts and others do not is unclear. Immunity probably plays a key role.

• The natural history of genital warts is usually benign, but recurrence of genital warts within the first several months after treatment is common. Treatment for genital warts can reduce HPV infection, but whether the treatment results in a reduction in risk for transmission of HPV to sex partners is unclear. The duration of infectivity after wart treatment is unknown.

• Condoms might reduce the risk for HPV-associated diseases (e.g., genital warts and cervical cancer). Consistent condom use also may reduce the risk for genital HPV. HPV infection can occur in areas that are not covered or protected by a condom (e.g., scrotum, vulva, or perianus).

• The presence of genital warts is not an indication for HPV testing, a change in the frequency of Pap tests, or cervical colposcopy.

• HPV testing is not indicated for partners of persons with genital warts.
Follow-Up

After visible genital warts have cleared, a follow-up evaluation might be helpful. Patients should be cautioned to watch for recurrences, which occur most frequently during the first 3 months. External genital warts can be difficult to identify, so it might be useful for patients to have a follow-up evaluation 3 months after treatment. Earlier follow-up visits also might be useful for some patients to document the absence of warts, to monitor for or treat complications of therapy, and to provide an additional opportunity for patient education and counseling. Women should be counseled to undergo regular Pap screening as recommended for women without genital warts.

Management of Sex Partners

Examination of sex partners is not necessary for the management of genital warts because no data indicate that reinfection plays a role in recurrences. In addition, providing treatment for genital warts solely for the purpose of preventing future transmission cannot be recommended because the value of treatment in reducing infectivity is unknown. However, sex partners of patients who have genital warts might benefit from counseling and examination to assess the presence of genital warts and other STDs. The counseling of sex partners provides an opportunity for these partners to 1) learn that HPV infection is common and probably shared between partners and 2) receive STD evaluation and screening and Pap screening if they are female. Female sex partners of patients who have genital warts should be reminded that cytologic screening for cervical cancer is recommended for all sexually active women.

Special Considerations

Pregnancy

Imiquimod, podophyllin, and podofilox should not be used during pregnancy. However, because genital warts can proliferate and become friable during pregnancy, many specialists advocate their removal during pregnancy. HPV types 6 and 11 can cause respiratory papillomatosis in infants and children. The route of transmission (i.e.,
transplacental, perinatal, or postnatal) is not completely understood. Whether cesarean section prevents respiratory papillomatosis in infants and children is unclear; therefore, cesarean delivery should not be performed solely to prevent transmission of HPV infection to the newborn. Cesarean delivery might be indicated for women with genital warts if the pelvic outlet is obstructed or if vaginal delivery would result in excessive bleeding. Pregnant women with genital warts should be counseled concerning the low risk for warts on the larynx (recurrent respiratory papillomatosis) in their infants or children. No controlled studies have suggested that cesarean section prevents this condition.

**HIV Infection**

No data suggest that treatment modalities for external genital warts should be different in the setting of HIV-infection. However, persons who are immunosuppressed because of HIV or other reasons might have larger or more numerous warts, might not respond as well as immunocompetent persons to therapy for genital warts, and might have more frequent recurrences after treatment. Squamous cell carcinomas arising in or resembling genital warts might occur more frequently among immunosuppressed persons, therefore, requiring biopsy for confirmation of diagnosis. Because of the increased incidence of anal cancer in HIV-infected homosexual men, screening for anal SIL by cytology in this population is recommended by some specialists. However, evidence is limited concerning the natural history of anal intraepithelial neoplasias, the reliability of screening methods, the safety and response to treatments, and the programmatic considerations that would support this screening approach. Until additional data are generated on screening for anal SIL, this screening approach cannot be recommended.

**Squamous Cell Carcinoma in Situ**

Patients in whom squamous cell carcinoma in situ of the genitalia is diagnosed should be referred to a specialist for treatment. Ablative modalities usually are effective, but careful follow-up is essential. The risk for these lesions leading to invasive squamous cell carcinoma of the external genitalia in immunocompetent patients is unknown but is
probably low. Female partners of male patients who have squamous cell carcinoma in situ are at high risk for cervical abnormalities.

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