What is the most effective treatment for external genital warts?

EVIDENCE-BASED ANSWER

Podofilox (Condylox), imiquimod (Aldara), cryotherapy, and surgical options all seem reasonable alternatives that are superior to podophyllin. (Grade of recommendation: B, based on systematic review.) No studies of surgical options versus home use preparations have been reported. Trichloroacetic acid and 5-fluorouracil (5-FU) have not been sufficiently studied.

EVIDENCE SUMMARY

Nonsurgical treatments that are beneficial in eradicating genital warts are podofilox (Condylox) (8 randomized controlled trials [RCTs] with 1035 participants), imiquimod (Aldara) (2 RCTs with 968 participants), and intralesional interferon (8 RCTs). Cryotherapy is equivalent to trichloroacetic acid[1,2] and electrosurgery.[3] Although surgical treatments have not been compared with placebo or no treatment, both electrosurgery and surgical excision are superior to podophyllin in clinical trials.[4,5] Laser surgery is as effective as surgical excision.[6] Studies of topical interferon show conflicting results.[7] Systemic interferon is not beneficial.[7] Topical 5-FU has not been studied with RCTs. Wart clearance rates are summarized in the Table. Treatment duration for nonsurgical options is 4 to 8 weeks. Treatment of genital warts has not been shown to reduce transmission to sex partners.[7]

Two RCTs[4,5] showed more frequent recurrence with podophyllin (60% to 65%) than with surgical excision (19% to 20%). Another trial[1] showed recurrence in 22% of participants receiving electrosurgery, in 21% of those receiving cryotherapy, and in 44% of those receiving podophyllin treatment. Data are lacking on recurrence rates with imiquimod, podofilox, and intralesional interferon.

Pain occurs in less than 20% of people with imiquimod, cryotherapy, podophyllin, and electrosurgery; 39% with topical interferon; 44% with electrosurgery; 75% with podofilox; and 100% with surgical excision or laser surgery.[7] However, pain has been measured using methods that are unlikely to be comparable across studies. Flulike symptoms, leukopenia, thrombocytopenia, and elevated aspartate transaminase levels are associated with intralesional interferon.[7] Topical medications have not been studied in pregnant patients. Cryotherapy is safe in pregnancy based on case series, if only 3 or 4 treatments are given.[7]

Direct comparisons between home therapies (imiquimod, podofilox) and other treatments are needed. Products for home use are relatively expensive: a 1-month supply of imiquimod costs approximately $150; a 1-month supply of podofilox, $110 to $130. These are average wholesale prices, rounded to the nearest $10, as of Feb. 15, 2002.

TABLE

CLEARANCE RATES REPORTED IN CLINICAL TRIALS

Therapy	Clearance Rate (%)
Cryotherapy	63–88
Electrosurgery	61–94
Imiquimod	37–56
Interferon (topical)	6–90
Interferon (intralesional)	17–63
Laser surgery	23–52
Podofilox	45–77
Podophyllin	32–79
Surgical excision	35–72
Trichloroacetic acid	50–81
Placebo or no treatment	0–56

RECOMMENDATIONS FROM OTHERS

The CDC endorses podophyllin, bi- and trichloroacetic acid, podofilox, imiquimod, cryotherapy, intralesional interferon, electrosurgery, laser surgery, and surgical excision.[8] A United Kingdom guideline on anogenital warts recommends physical ablative methods such as cryotherapy and surgical options for keratinized lesions and topical medications for soft lesions. The guideline also recommends ablative therapy for persons with a small number of warts regardless of type. Interferon and 5-FU are not recommended.[9]

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Clinical Commentary by David White, MD, at http://www.fpin.org.

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