Weigh Pros and Cons of Pediatric Wart Therapies

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STANFORD, CALIF. — Two approved therapies for pediatric warts and several off-label options each carry advantages and disadvantages that can help inform treatment selection.

Watchful waiting may be the best option because most pediatric warts are self-limiting, but when you or the parents decide it is time for treatment, consider the child's age, personality, and the number and location of the lesions, Dr. Lillian F. Soohoo said at a pediatric update sponsored by Stanford (Calif.) University.

Up to two-thirds of pediatric warts resolve within 2 years without treatment. "I usually wait until a child is 9 years old before I begin talking about painful therapy" to remove warts, said Dr. Soohoo of the university. She never restrains children for such therapy.

She described the pros and cons of the two approved treatments—salicylic acid or cryotherapy—and discussed several off-label therapies being used:

▶ **Salicylic acid.** Many over-the-counter preparations are available in the form of topical solutions, gels, pads, patches, or plasters containing 17%-40% salicylic acid, depending on the product. Dr. Soohoo generally doesn't use the 40% preparations in younger children but may use them in teenagers, who have thicker skin.

The advantages of salicylic acid start with cure rates of 70%-80%. These preparations are readily available, inexpensive, and may be combined with other therapies.

Salicylic acid requires daily applications for weeks or months to be effective, however, so diligence on the part of the patient or parents is a must, she said. Many parents resist this over-the-counter therapy and demand a prescription-strength treatment. Salicylic acid also can cause irritation of the skin, eye, and mucous membranes.

▶ **Cryotherapy.** The most effective version of cryotherapy for pediatric warts is liquid nitrogen, which provides cure rates of 50%-80%. Less effective versions include Verruca-Freeze (chlorodifluoromethane and propane), Histofreezer (dimethyl ether and propane), or Wartner (dimethyl ether and propane), which produce less than half the chill of liquid nitrogen, she said.

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Leading the disadvantages of cryotherapy is the pain it causes, which usually is too traumatic for patients under 9 years of age. Cryotherapy usually requires repeat treatments, and can cause scarring or doughnut-wart (also called ring wart) recurrences.

Dr. Soohoo's cryotherapy technique starts by asking the child to hold an ice pack to the wart to pretreat the area, then applying liquid nitrogen to the wart and a 2-mm surrounding area for 3-6 seconds until the tissue is white. Allow the area to thaw completely and repeat. Schedule the patient for a follow-up visit in 2-4 weeks and discuss blister care with the parents.

▶ **Cantharidin.** A topical preparation made of purified secretions from the blister beetle (*Cantharis vesicatoria*), cantharidin can be applied in the office and will cause blistering and desquamation of the wart at home. Cantharidin is highly toxic if ingested and so is not approved for wart treatment, but the Food and Drug Administration in 1998 said it will not take regulatory action if its use is limited to topical use in the professional office setting, Dr. Soohoo said.

Cantharidin is easy to administer in the office, has a low risk for scarring, and both the application and the blistering is painless if applied appropriately. The blistering occurs within 24-48 hours and takes 4-7 days to heal. There have been some reports of lymphangitis or lymphedema associated with cantharidin use.

The wooden end of a cotton-tipped applicator can be used to apply a small drop to each lesion. Allow it to dry completely, then cover with tape, and advise parents to wash off the treated area 4-6 hours later, or sooner if burning or pain develops, Dr. Soohoo advised. Discuss blister care with parents. If needed, repeat treatment in 2 weeks.

▶ **Immunotherapy.** Although not approved for common pediatric warts, topical 5% imiquimod cream (Aldara) often is used and is approved for treatment of genital warts in patients aged 12 years and older.

Aldara cream is painless, well tolerated by all ages, and may induce immunity to warts. On the downside, it requires 4 months or more of nightly applications and is expensive, although many insurers now cover it for the treatment of warts, she said. To avoid irritation, do not use it to treat warts on the face, neck, occluded areas like the diaper area or genitals, she advised. It causes erythema in 30% of cases and, in rare cases, has been associated with flulike symptoms, fever, or photosensitivity.

Dr. Soohoo reserves another off-label topical immunotherapy, squaric acid dibutyl ester, for recalcitrant warts. The treatment seems to be painless and induces immunity to human papillomavirus. It can cause an allergic contact dermatitis, however, and should not be used for facial warts because of irritation.

Start use of squaric acid dibutyl ester by applying a 2% solution to a small, quarter-size area of normal skin on the forearm and wait 2 weeks to check for sensitization, she recommended. If none occurs, parents could apply a 0.2% solution to warts 3-7 times per week.

An intralesional immunotherapy, *Candida* antigen injection, is more painful. The injections are thought to be less painful than cryotherapy but still too painful for young children, Dr. Soohoo said. Some teenagers may tolerate it. It seems to be effective and induces immunity but is expensive and can cause itching as well as pain at the treatment site.

▶ **Other off-label therapies.** Among other off-label therapies, topical 5-fluorouracil can be applied to warts daily for 6 weeks. "I use it a fair amount in older kids and teens, especially if they're too busy to come back for visits," Dr. Soohoo said. It is an FDA Pregnancy Category X and is available in compounded formulations by mail order from pharmacies.

Topical retinoic acid has been applied to flat warts on the face for up to 8 weeks of daily treatment but can cause local skin irritation, she said.

A study of pulsed dye laser therapy in 56 children found no support for its use as first-line therapy for pediatric warts (J. Am. Acad. Dermatol. 2007;56:205-10).

Duct tape does not work as monotherapy but may boost the efficacy of other topical therapies when used in combination, she concluded.

Dr. Soohoo reported no conflicts of interest. ■