Latest Breakthroughs in Molluscum Contagiosum Therapy

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Molluscum contagiosum (ie, molluscum) is a ubiquitous infection caused by the poxvirus molluscum contagiosum virus (MCV). Although skin deep, molluscum shares many factors with the more virulent poxviridae. Moisture and trauma can cause viral material to be released from the pearly papules through a small opening, which also allows entry of bacteria and medications into the lesion. The MCV is transmitted by direct contact with skin or via fomites.[1]

Molluscum can affect children of any age, with MCV type 1 peaking in toddlers and school-aged children and MCV type 2 after the sexual debut. The prevalence of molluscum has increased since the 1980s. It is stressful for children and caregivers and poses challenges in schools as well as sports such as swimming, wrestling, and karate.[1,2]

For the first time, we have US Food and Drug Administration (FDA)–approved products to treat MCV infections. Previously, only off-label agents were used. Therefore, we have to contemplate why treatment is important to our patients.

What type of care is required for molluscum?

Counseling is the first and only mandatory treatment, which consists of 3 parts: natural history, risk factors for spread, and options for therapy. The natural history of molluscum in children is early spread, contagion to oneself and others (as high as 60% of sibling co-bathers[3]), triggering of dermatitis, eventual onset of the beginning-of-the-end (BOTE) sign, and eventually clearance. The natural history in adults is poorly understood.

Early clearance is uncommon; reports have suggested 45.6% to 48.4% of affected patients are clear at 1 year and 69.5% to 72.6% at 1.5 years.[4] For many children, especially those with atopic dermatitis (AD), lesions linger and often spread, with many experiencing disease for 3 to 4 years. Fomites such as towels, washcloths, and sponges can transfer the virus and spread lesions; therefore, I advise patients to gently pat their skin dry, wash towels frequently, and avoid sharing bathing equipment.[1,3,5] Children and adults with immunosuppression may have a greater number of lesions and more prolonged course of disease, including those with HIV as well as *DOC8* and *CARD11* mutations.[6] The American Academy of Pediatrics (AAP) emphasizes that children should not be excluded from attending child care/school or from swimming in public pools but lesions should be covered.[6] Lesions, especially those in the antecubital region, can trigger new-onset AD or AD flares.[3] In response, gentle skin care including fragrance-free cleansers and periodic application of moisturizers may ward off AD. Topical corticosteroids are preferred.

Dermatitis in MCV is a great mimicker and can resemble erythema multiforme, Gianotti-Crosti syndrome, impetigo, and AD.[1] Superinfection recently has been reported; however, in a retrospective analysis of 56 patients with inflamed lesions secondary to molluscum infection, only 7 had positive bacterial cultures, which supports the idea of the swelling and redness of inflammation as a mimic for infection.[7] When true infection does occur, tender, swollen, pus-filled lesions should be lanced and cultured.[1,7,8]

When should we consider therapy?

Therapy is highly dependent on the child, the caregiver, and the social circumstances.[1] More than 80% of parents are anxious about molluscum, and countless children are embarrassed or ashamed.[1] Ultimately, an unhappy child merits care. The AAP cites the following as reasons to treat: "(1) alleviate discomfort, including itching; (2) reduce autoinoculation; (3) limit transmission of the virus to close contacts; (4) reduce cosmetic concerns; and (5) prevent secondary infection."[6] For adults, we should consider limitations to intimacy and reduction of sexual transmission risk.[6]

Treatment can be based on the number of lesions. With a few lesions (<3), therapy is worthwhile if they are unsightly; appear on exposed skin causing embarrassment; and/or are itchy, uncomfortable, or large. In a report of 300 children with molluscum treated with cantharidin,

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Cutis. 2024 June;113(6):231-232. doi:10.12788/cutis.1028

most patients choosing therapy had 10 to 20 lesions, but this was over multiple visits.[8] Looking at a 2018 data set of 50 patients (all-comers) with molluscum,[3] the mean number of lesions was 10 (median, 7); 3 lesions were 1 SD below, while 14, 17, and 45 were 1, 2, and 3 SDs above, respectively. This data set shows that patients can develop more lesions rapidly, and most children have many visible lesions (N.B. Silverberg, MD, unpublished data).

Because each lesion contains infectious viral particles and patients scratch, more lesions are equated to greater autoinoculation and contagion. In addition to the AAP criteria, treatment can be considered for households with immunocompromised individuals, children at risk for new-onset AD, or those with AD at risk for flare. For patients with 45 lesions or more (3 SDs), clearance is harder to achieve with 2 sessions of in-office therapy, and multiple methods or the addition of immunomodulatory therapeutics should be considered.

Do we have to clear every lesion?

New molluscum lesions may arise until a patient achieves immunity, and they may appear more than a month after inoculation, making it difficult to keep up with the rapid spread. Latency between exposure and lesion development usually is 2 to 7 weeks but may be as long as 6 months, making it difficult to prevent spread.[6] Therefore, when we treat, we should not promise full clearance to patients and parents. Rather, we should inform them that new lesions may develop later, and therapy is only effective on visible lesions. In a recent study, a 50% clearance of lesions was the satisfactory threshold for parents, demonstrating that satisfaction is possible with partial clearance.[9]

What is new in therapeutics for molluscum?

Molluscum therapies are either destructive, immunomodulatory, or antiviral. Two agents now are approved by the FDA for the treatment of molluscum infections.

Berdazimer gel 10.3% is approved for patients 1 year or older, but it is not yet available. This agent has both immunomodulatory and antiviral properties.[10] It features a home therapy that is mixed on a small palette, then painted on by the patient or parent once daily for 12 weeks. Study outcomes demonstrated more than 50% lesional clearance.[11,12] Complete clearance was achieved in at least 30% of patients.[12]

A proprietary topical version of cantharidin 0.7% in flexible collodion is now FDA approved for patients 2 years and older. This vesicant-triggering iatrogenic is targeted at creating blisters overlying molluscum lesions. It is conceptually similar to older versions but with some enhanced features.[5,13,14] This version was used for therapy every 3 weeks for up to 4 sessions in clinical trials. Safety is similar across all body sites treated (nonmucosal and not near the mucosal surfaces) but not for mucosa, the mid face, or eyelids.[13] Complete lesion clearance was 46.3% to 54% and statistically greater than placebo ($P<.001$).[14]

Both agents are well tolerated in children with AD; adverse effects include blistering with cantharidin and dermatitislike symptoms with berdazimer.[15,16] These therapies have the advantage of being easy to use.

Final Thoughts

We have entered an era of high-quality molluscum therapy. Patient care involves developing a good knowledge of the agents, incorporating shared decision-making with patients and caregivers, and addressing therapy in the context of comorbid diseases such as AD.

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