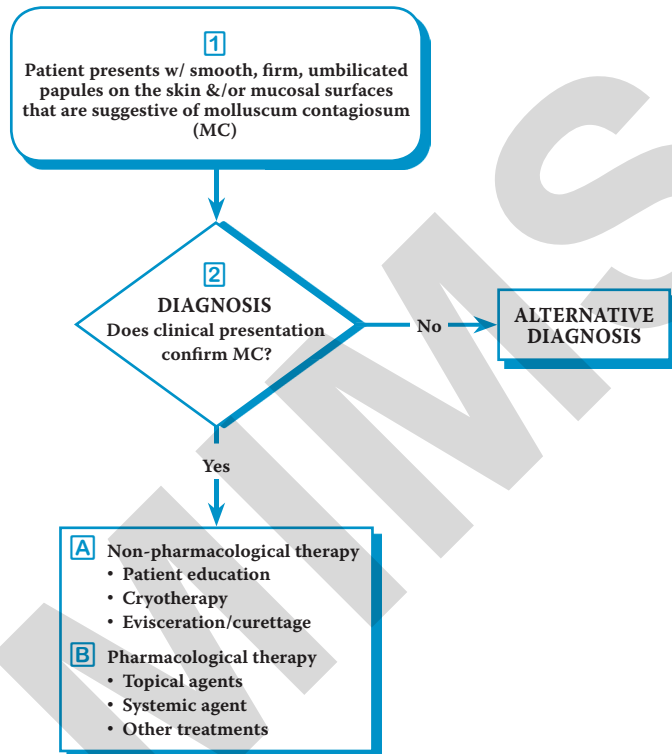


# Molluscum Contagiosum (1 of 6)



## 1 MOLLUSCUM CONTAGIOSUM

- Molluscum Contagiosum (MC) is an easily transmissible poxvirus
  - Spread is by skin-skin contact, fomites spread & autoinoculation
  - Patients w/ atopic dermatitis, HIV or immunodeficiency are particularly susceptible
- Incubation may be from 2-7 wk

### Clinical Presentation

#### **Children**

- Usually present w/ lesions on the face, scalp, ears, trunk & extremities (axilla, antecubital, popliteal fossa) & crural folds
  - Genital presentation may have occurred from autoinoculation

#### **Adults**

- MC is typically sexually-transmitted
- MC affects the groin, genital area, thighs & lower abdomen

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**2 DIAGNOSIS****Physical Exam**

- Usually asymptomatic, smooth, flesh-colored, firm round papules w/ central umbilication where cheesy materials can be expressed
- Large lesions may present as polypoid growths w/ a stalk-like base
- Lesion size is usually 2-6 mm in diameter
- Lesions may be grouped together in a small area (often in linear arrangement-pseudo-Kobner) or may become more widely spread
  - 10% of patients develop eczematous dermatitis which resolves as the infection clears
- May be pruritic & inflamed in the presence of pyogenic infection or in immune-suppressed state
- Papules may occur anywhere in the body w/ predilection to the face, neck, axilla, cubital creases, thighs & genitoanal region but the palms & soles spared
- Conjunctivitis & corneal lesions may be part of the complications

**Laboratory Findings**

- Fluorescent antibody technique identifies MCV antigen

**Histological Exam**

- May be used if clinical presentation is not diagnostic
- Central core of lesion can be expressed, smeared & stained on a slide to demonstrate brick-like inclusion bodies
- Skin punch biopsy findings of eosinophilic viral inclusion bodies (molluscum bodies/Henderson-Paterson bodies) on the stratum corneum

**A NON-PHARMACOLOGICAL THERAPY****Patient Education**

- Inform the patient of treatment options available
  - There are very few well-controlled studies testing the efficacy of treatment options
- Patient or caregiver of child needs to be aware of advantages versus disadvantages of the treatments
- Any of the non-pharmacological or pharmacological treatments may be used

**No Treatment**

- In immunocompetent hosts, MC is a self-limited disease, which when left untreated eventually resolves after 6 mth up to 5 yr
  - Individual lesions may resolve spontaneously w/in 2 mth & completely disappear in 6-12 mth
  - New lesions can develop w/ autoinoculation
- **Advantages:** No scarring, not painful
- **Disadvantages:** May transfer virus to other individuals or continue to spread to self w/ autoinoculation

**Cryotherapy**

- Liquid nitrogen is applied to each lesion for a few seconds
- **Advantages:** Effective treatment
- **Disadvantages:** Painful, risk of blistering, risk of hyper- or hypopigmentation & scarring, multiple clinic visits may be necessary

**Evisceration/Curettage**

- Mechanical removal of the core of the lesion; scalpel, edge of glass slide, etc may be used to remove umbilicated core
- 2-4 mm curette may also be used to "flick" off the papule
- **Advantages:** Effective treatment, immediate results
- **Disadvantages:** Painful, risk of spread, scarring, bleeding, multiple office visits may be necessary
  - Topical anesthetic cream should be applied prior to treatment
  - May not be tolerated by small children

## PHARMACOLOGICAL THERAPY

### Topical Agents

#### Cantharidin

- **Actions:** Protein phosphatase inhibitor that penetrates the epidermis & induces blistering through acantholysis
- **Effects:** One study showed clearance of 90% of lesions
- **Advantages:** Effective treatment
- **Disadvantages:** May cause temporary burning, risk of blistering, pruritus, infection, repeated office visits are needed
  - Should not be used on the face, genital/perianal area

#### Cidofovir

- Case studies has shown clearance of lesions in immunocompromised individuals & in patients suffering from recalcitrant lesions
- May also be administered intravenously in immunocompromised patients
- **Advantages:** Effective treatment
- **Disadvantages:** High cost, need for extemporaneous preparation; currently only available as solution for injection

#### Imiquimod

- **Actions:** Topical immune response modifier that produces localized immune response at the site of application
- **Effects:** 75-82% of patients treated experienced clearance of lesions
- **Advantages:** Effective in the majority of cases treated, well tolerated
- **Disadvantages:** High cost, irritation at application site, flu-like symptoms may occur
- Studies proving efficacy are still lacking

#### Iodine Tincture

- Apply directly to lesion or apply after puncturing each papule w/ sterile needle or by curettage
- **Advantages:** Reported to be safe & effective

#### Iodine + Salicylic Acid

- **Advantages:** Reported to be effective
- **Disadvantages:** May cause maceration & erosion

#### Podophyllotoxin

- **Effects:** Small study showed 92% of patients treated experienced clearance of lesions
- **Advantages:** Shown to be effective
- **Disadvantages:** May cause burning, erosions, itching & erythema
  - Severe systemic effect on overdosage

#### Potassium Hydroxide (KOH)

- **Advantages:** Reported to be effective
- **Disadvantages:** Painful, may scar, hypo- & hyperpigmentation may occur
- Studies proving efficacy are still lacking

#### Salicylic Acid w/ or w/o Lactic Acid

- **Advantages:** Well-tolerated, easily applied
- **Disadvantages:** Irritation may occur

#### Tretinoin

- **Advantages:** Well-tolerated, easily applied
- **Disadvantages:** Variable efficacy
- Studies proving efficacy are limited

#### Trichloroacetic acid

- **Advantages:** Causes less local irritation & systemic toxicity than other acids in its class
- **Disadvantages:** Responses is often incomplete & recurrence frequently occurs

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**B PHARMACOLOGICAL THERAPY (CONT'D)****Systemic Agents****Cimetidine (Oral)**

- **Actions:** Stimulates delayed-type hypersensitivity
- **Effects:** 1 small study showed resolution in 9 out of 13 patients treated
- **Advantages:** Safe, painless, well-tolerated esp by childn, easy to administer
- **Disadvantages:** Efficacy is variable & more studies are needed
  - Facial lesions often unresponsive
  - Potential of systemic side effects & drug interactions

**Other Treatments****Interferon alpha**

- Alternative treatment for immunocompromised patients w/ severe, refractory MC
- Administered subcutaneously; may also be given intralesionally
- Influenza-like symptoms may occur

**Dosage Guidelines****ACNE TREATMENT PREPARATION**

Drug	Dosage	Remarks
Tretinoin	Apply 0.025-0.05% cream 24 hrly at bedtime	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>• Erythema at the site of prior lesions, stinging, feeling of warmth, erythema, peeling, edema, blistering, crusting of the skin, temporary hypo- or hyperpigmentation, photosensitivity</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>• May be applied at home</li> <li>• Avoid exposure to excessive sunlight or UV radiation</li> </ul>

**ELECTROLYTE**

Drug	Dosage	Remarks
Potassium hydroxide	<b>Child &amp; adult:</b> 10% aqueous soln applied to lesions 12 hrly until all lesions have inflammation & superficial ulceration	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>• Severe stinging, irritation, secondary infection</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>• May be applied by patient at home</li> </ul>

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## Dosage Guidelines

H <sub>2</sub> -RECEPTOR ANTAGONIST		
Drug	Dosage	Remarks
Cimetidine	<b>Child:</b> 25-35 mg/kg/day PO in divided doses x 2 mth <b>Adult:</b> 300-800 mg PO 6-8 hrly <b>Max dose:</b> 2400 mg/day	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Headache, dizziness, drowsiness, agitation, N/V, diarrhea</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>Drug interactions may occur because of inhibition of cytochrome P450</li> <li>Use w/ caution in patients taking Warfarin, benzodiazepines, Amiodarone, Theophylline, Carbamazepine, etc</li> </ul>

SKIN ANTISEPTIC & DISINFECTANT		
Drug	Dosage	Remarks
Iodine tincture	<b>Child &amp; adult:</b> 10% tincture is applied directly to lesion or after puncturing each papule w/ a sterile needle or by curettage	<b>Special Instructions</b> <ul style="list-style-type: none"> <li>Systemic absorption may occur if applied to open skin</li> </ul>

TOPICAL ANTIVIRAL		
Drug	Dosage	Remarks
Cantharidin	<b>Child &amp; adult:</b> Apply 0.7% soln sparingly to dome of lesion as a single application Max number of lesions treated per visit: 20 Repeat therapy at 2-4 wk intervals	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Pruritus, inflammation, infection, pain, bleeding</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>Should be applied in physician's office</li> <li>Should not be applied to facial lesions</li> <li>Patients should rinse off soln w/ water after 4-6 hr or as soon as burning, blistering or discomfort occurs</li> </ul>
Cidofovir	<b>Recalcitrant MC in child &amp; adult:</b> 3% cream applied to lesions once daily 5 days/wk Clearing occurs in 2-6 wk	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Acute inflammation</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>May be applied at home</li> </ul>

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## Dosage Guidelines

WARTS & CALLUSES PREPARATIONS		
Drug	Dosage	Remarks
Imiquimod	<b>Adult:</b> 5% cream applied to lesions 3x/wk for up to 16 wk	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Application site irritation, skin erosion, erythema, flaking, edema, headache</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>May be applied at home</li> <li>Wash off after 6-10 hr using soap &amp; water</li> </ul>
Iodine tincture plus Salicylic acid	<b>Child &amp; adult:</b> 10% soln is applied to papules When dry, cover the site w/ small pieces plaster of 50% Salicylic acid plaster & tape Repeat 24 hrly after bathing x 3-7 days until the lesions become erythematous Then apply only 10% Iodine soln until lesions are cleared (average 26 days)	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Maceration &amp; erosion of skin</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>To prevent systemic absorption, do not apply to open skin</li> <li>May be applied at home</li> </ul>
Podophyllotoxin	<b>Child ≥10 yr &amp; adult:</b> 0.5% soln or 0.15% cream applied to lesions 12 hrly x 3 days If lesions not cleared, may repeat 3-day application wkly for up to 4 wk total	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Burning, pain, inflammation, erosion &amp; pruritus, headache</li> <li>Topical overdosage can cause serious systemic effects</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>May be applied at home</li> </ul>
Salicylic acid	Apply 27% gel 24 hrly until lesion clears completely	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Irritation at lesion site</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>Soak lesion in warm water for 5 min, dry w/ towel, rub surface w/ pumice stone or emery board, apply soln, let dry then cover w/ plaster</li> </ul>
Salicylic acid/ lactic acid soln	<b>Child &amp; adult:</b> Apply 24 hrly until lesion clears & ridge lines have been restored	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Irritation at lesion site</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>Soak lesion in warm water for 5 min, dry w/ towel, rub surface w/ pumice stone or emery board, apply soln, let dry then cover w/ plaster</li> </ul>
Trichloroacetic acid	<b>Adult:</b> Paint onto lesion every 1-2 wk	<b>Adverse Reactions</b> <ul style="list-style-type: none"> <li>Pain, burning, ulceration. May cause scarring if not applied carefully</li> </ul> <b>Special Instructions</b> <ul style="list-style-type: none"> <li>Apply only to affected skin &amp; allow to dry so that a white layer develops</li> <li>Talc or sodium bicarbonate should be available to treat spills or if excess acid is applied</li> <li>Avoid contact w/ normal skin; protect w/ petroleum jelly</li> </ul>

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*Please see the end of this section for reference list.*