

UK national guideline for the management of Genital Molluscum in adults 2014

Clinical Effectiveness Group, British Association for Sexual Health and HIV

Date of writing: July 2014 Date review due: July 2018

Guideline development group:

Imali Fernando (Consultant in Genitourinary Medicine), Jill Pritchard (Consultant in Sexual Health), Sarah K Edwards (Consultant in Sexual Health), Deepa Grover (Consultant in Genitourinary/HIV Medicine -Lead editor CEG)

New in the 2014 guidelines

Treatment in HIV positive individuals

Introduction and Methodology

Objectives

This guideline offers recommendations on diagnosis, treatment regimens and health promotion principles needed for the effective management of genital molluscum, including management of the initial presentation and recurrences. *It primarily focuses on infection which affects the genital area and has a sexual mode of transmission.*

It is aimed primarily at patients aged 16 years or older presenting to health care professionals working in departments offering level 3 care in STI management within the United Kingdom. However, the principles of the recommendations should be adopted across all levels - level 1 and 2 providers may need to develop local care pathways where appropriate.



NHS Evidence has accredited the process used by the British Association for Sexual Health & HIV (BASHH) to produce UK national guidelines. Accreditation is valid for 3 years from January 2011 and is retrospectively applicable to guidance produced using the processes described in the BASHH Framework for Guideline Development and Assessment dated September 2010. More information on accreditation can be viewed at www.evidence.nhs.uk

Search strategy

The following reference sources were used to provide a comprehensive basis for the guideline:

- Medline and Embase search (from 1980 till end of Dec 2012): the search strategy comprised the following terms in the title or abstract: Molluscum +/- contagiosum +/- genital. Only articles published in English were included in the search.
- Cochrane Collaboration Databases (www.cochrane.org) were reviewed.
- The British Association of Dermatology (BAD) patient information guidance and the American Centres for Disease Prevention and Control (CDC) clinical guidance on Molluscum contagiosum infection were also reviewed.

Methods

Article titles and abstracts were reviewed and if relevant the full text article obtained. Priority was given to randomised controlled trial and systematic review evidence where available, and recommendations made and graded on the basis of best available evidence.

Piloting & feedback

The initial draft of the guideline was reviewed by the BASHH Genital Dermatology special interest group.

The final guideline was then reviewed by the CEG using the AGREE instrument before posting it on the BASHH website for external peer review for a 2 month period. Comments received were collated by the CEG editor and sent to the guideline chair for review and action. The final guideline was approved by the CEG and a review date agreed before publication on the BASHH website.

GUIDELINE

Aetiology

Molluscum infection is a benign epidermal eruption of the skin, caused by Molluscum contagiosum, a large DNA virus. Molluscum contagiosum belongs to the *Poxviridae* family and *Molluscipox* genus.⁽¹⁾

Up to four subtypes of Molluscum contagiosum have been identified by genotypic analysis⁽²⁻⁵⁾; commonest MCV-1, followed by MCV-2 subtype.⁽⁶⁻⁸⁾ There appears to be no clinical difference between subtypes,⁽⁸⁻⁹⁾ or their preferred anatomical sites,⁽⁷⁾ though MCV-2 appears relatively commoner in the setting of immunocompromise and HIV.^{(8) (10-12)} An individual infection usually includes only one subtype of molluscum.

Molluscum infection commonly occurs in one of 3-settings:

- Infection acquired through routine physical contact or occasionally fomites is the commonest presentation, and children account for the majority of infections⁽¹³⁻¹⁴⁾: in the period 1994-2003, over 90% of molluscum infections presenting to General Practitioners in the UK were in children aged under the age of 15 years.⁽¹⁵⁾ In this setting, the molluscum lesions usually affect face and neck, trunk or limbs.^{(14) (16-17)}
- Molluscum as a sexually transmitted infection (STI), usually affecting young adults, is a very small proportion of reported infections,⁽¹³⁾ but appears to be increasing in frequency.⁽¹⁸⁻²⁰⁾ Sexually transmitted molluscum lesions usually affect genitals, pubic region, lower abdomen, upper thighs and/ or buttocks.
- Severe molluscum infection can also manifest in the context of immunocompromise, notably late stage HIV.

Clinical Features

Molluscum lesions are usually characteristic, presenting as smooth-surfaced, firm, dome-shaped papules with central umbilication. Their colour can vary from pearly-white or pink to yellow. Lesions are usually 2-5 mm diameter, though occasionally much larger (giant mollusca), especially in the setting of immunocompromise.^{(14) (21-22)} Other uncommon manifestations include cystic, cellulitis or abscess-like lesions,^{(14) (23-27)} cutaneous pseudo-lymphomas,⁽²⁸⁻³¹⁾ folliculitis⁽³²⁻³³⁾ or warty appearances.⁽³⁴⁾

Commonly, patients have 1-30 individual lesions at a time,⁽³⁵⁾ occurring as clusters, and these can become koebnerised. Especially lesions in later stages, at point of regression, can be surrounded by an inflammatory dermatitis.⁽³⁶⁻³⁷⁾ Molluscum infection can affect almost any part of the body, rarely even the oral cavity⁽³⁸⁻⁴⁰⁾ or sole of the foot.⁽⁴¹⁻⁴³⁾ Molluscum lesions are frequently asymptomatic, though occasionally associated with itch, discomfort or secondary bacterial

infection. Molluscum infection will usually regress spontaneously within months in immunocompetent individuals, leaving no sequelae. Immunocompetent patients should therefore generally be reassured and asked to adopt a policy of 'watchful waiting'.

Molluscum infection in immunocompromised states can be significantly more aggressive and widespread, presenting with 100 or more lesions in one individual,⁽⁴⁴⁻⁴⁷⁾ and progressing as confluent, coalescing plaques.⁽⁴⁸⁾ As described, these individual lesions can be atypical in appearance and are frequently significantly larger than average.⁽⁴⁹⁻⁵¹⁾ Extensive molluscum infection has been described in many different settings of immunocompromise, including malignancy,⁽⁴⁶⁾ hereditary/ congenital immunosuppressive conditions⁽⁵²⁻⁵⁵⁾ and with immunosuppressant treatments.^{(36) (51) (56-57)}

Severe molluscum infections were also common in HIV patients in the pre-HAART era,⁽⁵⁸⁻⁵⁹⁾ estimated to affect 5-18% of positive individuals.⁽⁶⁰⁻⁶³⁾ Extensive disease usually occurs in the setting of late HIV, with CD4 counts significantly under 200 and concurrent illnesses related to advanced HIV infection.^{(45) (61) (64-72)} Extensive molluscum may be the first indication of HIV disease.⁽⁴⁵⁾

Lesions occur commonly on the face and neck,^{(49) (73)} but can sometimes affect the genital regions, indicating both venereal and non-venereal spread in this scenario.⁽⁴⁵⁾ Particularly in immunocompromise, molluscum lesions can affect the eyelids⁽⁷⁴⁻⁷⁶⁾ and cause chronic conjunctivitis due to a foreign body type reaction.^{(14) (75) (77-79)} Molluscum infection can be particularly difficult to treat in late stage HIV using conventional means,^{(62) (80)} though usually responding to HIV anti-retroviral treatment (ARV) initiation.⁽⁸¹⁾ However, an Immune Reconstitution Inflammatory Syndrome (IRIS) reaction to molluscum may occur with the starting of ARVs,⁽⁸²⁻⁸⁴⁾ and molluscum may occasionally first present in the setting of IRIS.⁽⁸⁵⁻⁸⁷⁾

Diagnosis

Diagnosis is predominantly clinical, on the basis of characteristic lesions.

Occasionally clinical diagnosis can be challenging, and dermatoscopy may be of some additional benefit,⁽⁸⁸⁻⁸⁹⁾ as appearances are usually distinctive.⁽⁹⁰⁾ However, dermatoscopy is not routinely available in a sexual health setting. Rarely, biopsy maybe useful for atypical infections, as the histopathologic features are characteristic.^{(36) (91)}

While molecular methods such as PCR now exist for molluscum,⁽⁹²⁾ these are not routinely used in clinical practice.

Differential diagnoses

Molluscum may be mistaken for a number of other dermatologic conditions, especially if solitary lesions; including basal cell carcinoma (BCC), cysts and abscesses, keratoacanthoma and cutaneous horn. Genital molluscum may also be confused with ectopic sebaceous glands⁽⁹³⁻⁹⁴⁾

and vulvar lymphangioma circumscriptum. ⁽⁹⁵⁻⁹⁶⁾ Patients may confuse genital lesions with genital warts.

The most significant differential diagnoses of molluscum however are the cutaneous manifestations of disseminated fungal infections, usually presenting in late immunosuppression, including Penicilliosis, ⁽⁹⁷⁻⁹⁹⁾ Cryptococcosis, ⁽¹⁰⁰⁻¹⁰⁸⁾ Histoplasmosis, ⁽¹⁰⁹⁻¹¹⁰⁾ Coccidioidomycosis, Pneumocystis carinii ⁽¹¹¹⁾ and Aspergillosis. ⁽¹¹²⁾

Management

General advice

Patients must be warned of risks of autoinoculation and, for example, advised against shaving or waxing their genital regions, to prevent further spread of lesions. ⁽¹¹³⁾ Similarly, patients should be advised against squeezing molluscum spots, both due to risk of super-infection and also as the central plug is full of infectious virus which is easily spread to uninfected skin.

Towels, bed-linen, clothes etc. should not be shared when active lesions are present, to reduce risk of onward transmission. Lesions should be covered with waterproof bandages or clothes, if possible, prior to using swimming pools.

With genital molluscum, condoms may reduce transmission, but this is not absolute. ^(114.)

Further Investigation

Patients who develop molluscum at their genital regions have usually acquired infection via a sexual route ⁽¹¹⁵⁾, and should be offered routine STI screening for other infections.

In patients with immune suppression disseminated fungal infections should be excluded.

Treatments

Recommended

Expectant management (no treatment) is recommended for immunocompetent patients (although this recommendation is guided by a Cochrane review of molluscum treatments at non genital sites). ⁽¹¹⁶⁾ (Level of evidence I, A)

Patients seek treatment from various motives, including for cosmetic reasons, stigma, symptoms (pruritus, secondary infection) and concerns regarding transmission and auto-inoculation. Some treatments may shorten the disease course, but this requires to be balanced against possible side-effects. Molluscum infection itself, resolving naturally, usually leaves no long-term sequelae, and it is important therefore that any therapy chosen is also gentle and has minimal side-effects. It

is difficult to advocate one single treatment above others and choice is influenced by a number of factors, including comparative efficacy, side-effects, cost and ease of use. The patient's views should be considered in the decision-making process. If patients opt for treatment, they must be informed that new lesions can appear for a while, necessitating more than one treatment course.

Podophyllotoxin 0.5%, commonly used to treat genital warts, may also be used in the treatment of Molluscum contagiosum⁽¹¹⁷⁻¹¹⁹⁾ and has the advantage of self-application. It is applied twice daily for three consecutive days, with a pause for 4 days. It can be repeated after a week if necessary for 4 weeks [net price 3ml solution £12.38]. In one randomised controlled trial (RCT) demonstrating efficacy, the majority of patients had genital lesions.⁽¹¹⁸⁾ (Level of evidence Ib, A)

Imiquimod 5% cream has demonstrated some limited efficacy in the treatment of Molluscum contagiosum, in both HIV-positive^{(47) (120-122)} and negative patients.⁽¹²³⁻¹²⁸⁾ There is also a RCT demonstrating efficacy in the treatment of genital infection.⁽¹²⁵⁾ Imiquimod Cream is applied to lesions three times weekly and washed off 6-10 hours later for up to 16 weeks. Imiquimod is however not licensed for this purpose, as manufacturer trials failed to demonstrate efficacy in the treatment of non-genital molluscum in children. (Level of evidence Ib, A)

Liquid nitrogen therapy, routinely available in sexual health clinics, has been used to treat molluscum,⁽¹¹⁷⁾ though there are no reported trials. (Level of evidence IV, C)

Alternative Regimes

Curettage is a conventional and well-recognised treatment for molluscum affecting non-facial, non-genital skin,⁽¹²⁸⁾ but is frequently painful⁽¹²⁹⁾ and evidence for its efficacy is sparse.⁽¹³⁰⁾ It is unsuitable for treating genital lesions. (Level IV, C)

Light emitting and pulsed dye lasers, has been tried with some success in both HIV positive and negative patients with non-genital molluscum, though there are no randomised controlled trials. Reported side effects are few; mild discomfort and usually temporary pigment changes.⁽¹³¹⁻¹³⁸⁾ However, such treatment is costly, requires special equipment and is impractical for routine use in the genital region. (Level IV, C)

There is a very extensive list of other chemical preparations that have been tried for treating molluscum on the trunk and limb areas of the body. These include varying strength topical preparations of salicylic acid,^{(128) (139-140)} lactic acid, glycolic acid,⁽¹²⁸⁾ trichloroacetic acid,⁽¹⁴¹⁻¹⁴²⁾ carbolic acid, benzoyl peroxide,⁽¹⁴³⁾ iodine,⁽¹⁴¹⁾ phenol, sodium nitrite,⁽¹⁴⁴⁾ potassium hydroxide,⁽¹⁴⁵⁻¹⁴⁹⁾ silver nitrate,⁽¹⁵⁰⁾ and Tretinoin.^{(143) (149)} However, there is very little published evidence generally for these treatments (and none regarding use in genital infection), to recommend any above the policy of 'watchful waiting'. Additionally, many of them are likely too irritant for application on delicate genital skin, and thus are not recommended for use here. (Level IV C)

Pregnancy & Breastfeeding

Cryotherapy and other destructive methods are safe. Podophyllotoxin and imiquimod should be avoided.

HIV Positive Individuals

Topical Cidofovir has demonstrated some efficacy in the treatment of non-genital recalcitrant molluscum infection in the setting of HIV immunosuppression, ⁽¹⁵¹⁻¹⁵⁵⁾ though frequently associated with significant local inflammation. ⁽¹⁵¹⁻¹⁵⁵⁾ it therefore cannot be recommended for use on genital skin. (Level IV C) There are also a small number of case reports ⁽¹⁵⁵⁻¹⁵⁷⁾ on the use of intravenous Cidofovir for extensive, severe and treatment refractory non-genital infection in HIV. There is however no trial data available, either for genital or non-genital infection.

Both intra-lesional ⁽¹⁵⁸⁾ and systemic subcutaneous interferon ⁽¹⁵⁹⁻¹⁶⁰⁾ have been attempted as immune-boosters for the treatment of molluscum in a few immunosuppressed patients. There is however again no evidence to support interferon use for routine genital infection.

Where HIV positive patients with molluscum infection are immunosuppressed, and have extensive lesions, the introduction of effective highly active antiretroviral treatment (HAART) will speed resolution, ⁽⁸¹⁾ ⁽¹⁶¹⁻¹⁶⁵⁾ (Level IV, C) though there may be an occasional flare-up during immune reconstitution. ⁽⁸²⁻⁸⁴⁾

Reactions to Treatment

Common side-effects to cryotherapy include pain, inflammation and oedema at treated areas. Pigment change, hair loss and superficial scarring are rare.

Imiquimod and podophyllotoxin both are also commonly associated with local reactions.

Follow-up

No routine follow up is required.

Contact tracing & treatment

Routine partner notification is not required for genital molluscum infection unless there is evidence of a concomitant sexually transmitted infection.

Auditable outcomes

Offer of STI screening for patients presenting with genital molluscum – Target 100%

Cost Implications

These guidelines have been revised to include a wider range of treatments than previous versions of the guidance. However, the recommended first line treatments of cryotherapy, podophyllotoxin and imiquimod remain unchanged and no cost implications are expected.

Authors

Imali Fernando (Consultant in Genitourinary Medicine, Honorary Clinical Senior Lecturer, University of Edinburgh), Jill Pritchard (Consultant in Sexual Health Ashford and St Peter's Hospital) Sarah K Edwards (Consultant in Sexual Health Cambridgeshire community services) Deepa Grover (Consultant in Genitourinary medicine/HIV Barnet General and Royal Free Hospital)

The guidelines were reviewed and commented upon by members of the BASHH Genital Dermatology Special Interest Group (Dr P N Sashidharan, Dr Alan Tang, Dr Tim Moss, Dr Gulshan Sethi, Dr Nicola Steadman).

Editorial independence

This guideline was commissioned, edited and endorsed by the BASHH CEG without external funding being sought or obtained.

Declarations of interest

None

Membership of the Clinical Effectiveness Group

Dr Keith Radcliffe (Chair), Dr Mark FitzGerald, Dr Deepa Grover, Dr Steve Higgins, Dr Margaret Kingston, Dr Neil Lazaro, Dr Louise Melvin, Dr Ann Sullivan

References

1. Bateman F. Molluscum contagiosum. In: Shelley WB, Crissey JT (Ed) Classics in dermatology. Springfield (IL): Charles C Thomas; 1953. Pg. 20.
2. Darai, G, Reisner H, Scholz J, et al. Analysis of the genome of molluscum contagiosum virus by restriction endonuclease analysis and molecular cloning. *J Med Virol* 1986; 18(1): 29-39.
3. Porter CD, Archard LC. Characterisation and physical mapping of molluscum contagiosum virus DNA and location of a sequence capable of encoding a conserved domain of epidermal growth factor. *J Gen Virol* 1987; 68: 673-82.
4. Porter CD, Muhlemann MF, Cream JJ, et al. Molluscum contagiosum: characterization of viral DNA and clinical features. *Epidemiol Infect* 1987; 99(2): 563-67.
5. Porter CD, Archard LC. Characterisation by restriction mapping of three subtypes of molluscum contagiosum virus. *J Med Virol* 1992; 38: 1-6.
6. Saral Y, Kalkan A, Ozdarendeli A, et al. Detection of Molluscum contagiosum virus (MCV) subtype I as a single dominant virus subtype in Molluscum lesions from a Turkish population. *Arch Med Research* 2006; 37(3): 388-91.
7. Scholz J, Rösen-Wolff A, Bugert J, et al. Epidemiology of molluscum contagiosum using genetic analysis of the viral DNA. *J Med Virolog* 198; 27(2): 87-90.
8. Yamashita H, Uemura T, Kawashima M. Molecular epidemiologic analysis of Japanese patients with molluscum contagiosum. *Int J Dermatol* 1996; 35: 99-105.
9. Porter CD, Blake NW, Archard LC, et al. Molluscum contagiosum virus types in genital and non-genital lesions. *Br J Dermatol* 1989; 120: 37-41.
10. Thompson CH, De Zwart-Steffe RT, Biggs IM. Molecular epidemiology of Australian isolates of molluscum contagiosum. *J Med Virol* 1990; 32(1): 1-9.
11. Thompson CH, De Zwart-Steffe RT, Donovan B. Clinical and molecular aspects of molluscum contagiosum infection in HIV-1 positive patients. *Int J STD AIDS* 1992; 3(2): 101-06.
12. Epstein W. Molluscum Contagiosum. *Semin Dermatol* 1992; 11: 184-89.
13. Koning S, Bruijnzeels MA, van Suijlekom-Smit LW, et al. Molluscum contagiosum in Dutch general practice. *Br J Gen Pract* 1994; 44(386), 417-19.
14. Laxmisha C, Thappa DM, Jaisankar TJ. Clinical profile of molluscum contagiosum in children versus adults. *Dermatol Online J* 2003; 9(5): 1.
15. Pannell RS, Fleming DM, Cross KW. The incidence of molluscum contagiosum, scabies and lichen planus. *Epidemiol Infect* 2005; 133(6): 985-91.
16. Dohil MA, Lin P, Lee J, et al. The epidemiology of molluscum contagiosum in children. *J Am Acad Dermatol* 2006; 54(1): 47-54.

17. Kakourou T, Zachariades A, Anastasiou T, et al. Molluscum contagiosum in Greek children: a case series. *Int J Dermatol* 2005; 44(3), 2
18. Becker TM, Blount JH, Douglas J, et al. Trends in molluscum contagiosum in the United States, 1966-1983. *Sex Transm Dis* 1988; 13: 88-92.
19. Kumar B, Sahoo B, Gupta S, et al. Rising incidence of genital herpes over two decades in a sexually transmitted disease clinic in north India. *J Dermatol* 2002; 29(2): 74-78.
20. Villa L, Varela JA, Otero L, et al. Molluscum contagiosum: A 20-year study in a sexually transmitted infections unit. *Sex Transm Dis* 2010; 37(7): 423-24.
21. Cribier B, Scrivener Y, Grosshans E. Molluscum Contagiosum: Histologic patterns and associated lesions: A study of 578 lesions. *Am J Dermatopathol* 2001; 23(2): 99-103.
22. Mulugeta A. Giant molluscum contagiosum presenting as a tumour in an HIV-infected patient: case report. *Ethiop Medical J* 2000; 38(2): 125-30.
23. Park SK, Lee JY, Kim YH, et al. Molluscum contagiosum occurring in an epidermal cyst – report of 3 cases. *J Dermatol* 1992; 19(2): 119-21.
24. Egawa K, Honda Y, Ono T. Multiple giant molluscum contagiosa with cyst formation. *Am J Dermatopathol* 1995; 17(4): 414-16.
25. Freeman CL, Moriarty AT. Molluscum contagiosum presenting as cellulitis in an AIDS patient: cytologic and ultrastructural features. *Diagn Cytopathol* 1995; 12(4): 345-49.
26. Phelps A, Murphy M, Elaba Z, et al. Molluscum contagiosum virus infection in benign cutaneous epithelial cystic lesions – report of 2 cases with different pathogenesis? *Am J Dermatopathol* 2010; 32(7): 740-42.
27. Brandrup F, Asschenfeldtz P. Molluscum Contagiosum induced comedo and secondary abscess formation. *Paediatr Dermatol* 1989; 6(2): 118-21.
28. Kazakov DV, Burg G, Dummer R, et al. Cutaneous lymphomas and pseudolymphomas: newly described entities. *Recent Results Cancer Res* 2002; 160: 283-93.
29. Moreno-Ramírez D, García-Escudero A, Ríos-Martín JJ, et al. Cutaneous pseudolymphoma in association with molluscum contagiosum in an elderly patient. *J Cutan Pathol* 2003; 30(7): 473.
30. Ackerman AB, Tanski EV. Pseudoleukemia cutis: report of a case in association with Molluscum Contagiosum. *Cancer* 1977; 40: 813-17.
31. de Diego J, Berridi D, Saracibar N, et al. Cutaneous pseudolymphoma in association with molluscum contagiosum. *Am J Dermatopathol* 1998; 5: 518-21.
32. Ive FA. Follicular molluscum contagiosum. *Br J Dermatol* 1985; 113(4): 493-95.
33. Jang KA, Kim SH, Choi JH, et al. Viral folliculitis on the face. *Br J Dermatol* 2000; 142(3): 555-59.

34. Itin PH, Gilli L. Molluscum contagiosum mimicking sebaceous nevus of Jadassohn, ecthyma and giant condylomata acuminata in HIV-infected patients. *Dermatology* 1994; 189(4): 396-98.
35. Gottlieb SL, Mycowski PL. Molluscum contagiosum. *Int BJ Dermatol* 1994; 33: 453-61.
36. Brown ST, Nalley JF, Kraus SJ. Molluscum contagiosum (review). *Sex Trans Dis* 1981; 8(3): 227-34.
37. Osio A, Deslandes E, Saada V, et al. Clinical characteristics of molluscum contagiosum in children in a private dermatology practice in the greater Paris area, France: a prospective study in 661 patients. *Dermatology* 2011; 222(4): 314-20.
38. Laskaris G, Sklavounou A. Molluscum contagiosum of the oral mucosa. *Oral Surg Oral Med Oral Pathol* 1984; 58(6): 688-91.
39. Whitaker SB, Wiegand SE, Budnick SD. Intraoral molluscum contagiosum. *Oral Surg Oral Med Oral Pathol* 1991; 72: 334-36.
40. Fornatora ML, Reich RF, Gray RG, et al. Intraoral molluscum contagiosum: a report of a case and a review of the literature. *Oral Surg, Oral Med, Oral Pathol, Oral Radiol Endod* 2001; 92(3): 318-20.
41. Cohen PR, Tschen JA. Plantar Molluscum Contagiosum: a case report of Molluscum Contagiosum occurring on the sole of the foot and a review of the world literature. *Cutis* 2012; 90(1): 35-41.
42. Dickinson A, Tschen JA, Wolf Jr JE. Giant molluscum contagiosum of the sole. *Cutis* 1983; 32(3): 239-40.
43. Ha SJ, Park YM, Cho SH, et al. Solitary giant molluscum contagiosum of the sole. *Pediatr Dermatol* 1998; 15(3): 222-24.
44. Katzman M, Carey JT, Elmets CA, et al. Molluscum contagiosum and the acquired immunodeficiency syndrome: clinical and immunological details of two cases. *Br J Dermatol* 1987; 116: 131-38.
45. Schwartz JJ, Myuskowski PL. Molluscum contagiosum in patients with HIV infection: a review of 27 patients. *J Am Acad Dermatol* 1992; 27: 583-88.
46. Nakamura-Wakatsuki T, Kato Y, Miura T, et al. Eruptive molluscum contagiosum in a patient with rheumatoid arthritis and lung cancer. *Rheumatol Int* 2011; 31(8): 1117-18.
47. Brown CW, O'Donoghue M, Moore J, et al. Recalcitrant molluscum contagiosum in an HIV-afflicted male treated successfully with topical Imiquimod. *Cutis* 2000; 65: 363-66.
48. Trope BM, Lenzi ME. AIDS and HIV infections: uncommon presentations. *Clinics Dermatol* 2005; 23(6): 572-80.
49. Petersen CS, Gerstoft J. Molluscum contagiosum in HIV-infected patients. *Dermatology* 1992; 184(1): 19-21.

50. Mansur AT, Göktay F, Gündüz S, et al. Multiple giant molluscum contagiosum in a renal transplant recipient. *Transpl Infect Dis* 2004; 6(3): 120-23.
51. Weisenseel P, Kuznetsov AV, Flaig M, et al. Disseminated eruptive giant mollusca contagiosa in an adult psoriasis patient during efalizumab therapy. *Dermatology* 2008; 217(1): 85-86.
52. Hayashi T, Hinoda Y, Takahashi T, et al. Idiopathic CD4+ T-lymphocytopenia with Bowen's disease. *Intern Med* 1997; 36(11): 822-24.
53. Moin M, Farhoudi A, Movahedi M, et al. The clinical and laboratory survey of Iranian patients with hyper-IgE syndrome. *Scand J Infect Dis* 2006; 38(10): 898-903.
54. Renner ED, Puck JM, Holland SM, et al. Autosomal recessive hyperimmunoglobulin E syndrome: a distinct disease entity. *J Pediatr* 2004; 144(1): 93-99.
55. Mayumi M, Yamaoka K, Tsutsui T, et al. Selective immunoglobulin M deficiency associated with disseminated molluscum contagiosum. *Eur J Pediatr* 1986; 145(1-2): 99-103.
56. Cotton DWK, Cooper C, Barrett DF, et al. Severe atypical Molluscum Contagiosum infection in an immunocompromised host. *Br J Dermatol* 1987; 116(6): 871-76.
57. Georgala S, Katoulis AC, Kanelleas A, et al. Human papilloma virus and molluscum contagiosum lesions related to infliximab therapy for psoriasis: a case series (letter). *Dermatol Online J* 2012; 18(4): 9.
58. Dann FJ, Tabibian P. Cutaneous diseases in human immunodeficiency virus-infected patients referred to the UCLA Immunosuppression Skin Clinic: reasons for referral and management of select diseases. *Cutis* 1995; 55(2): 85-8, 93-8.
59. Healy E, Meenan J, Mulcahy F, et al. The spectrum of HIV related skin diseases in an Irish population. *Ir Med J* 1993; 86(6): 188.
60. Lanjewar DN, Bhosale A, Iyer A. Spectrum of dermatopathologic lesions associated with HIV/AIDS in India. *Ind J Pathol Microbiol* 2002; 45(3): 293
61. Matis WL, Triana A, Shapiro R, et al. Dermatologic findings associated with human immunodeficiency virus infection. *J Am Acad Dermatol* 1987; 17(5 Pt 1): 746-51.
62. Hira SK, Wadhawan D, Kamanga J, et al. Cutaneous manifestations of Human Immunodeficiency Virus in Lusaka, Zambia. *J Am Acad Dermatol* 1988; 19(3): 451-57.
63. Goodman DS, Teplitz ED, Wishner A, et al. Prevalence of cutaneous disease in patients with acquired immunodeficiency syndrome (AIDS) or AIDS-related complex. *J Am Acad Dermatol* 1987; 17: 210 –20.
64. Ficarra, G., Cortés, S., Rubino, I., & Romagnoli, P. (1994). Facial and perioral molluscum contagiosum in patients with HIV infection. A report of eight cases. *Oral surgery, oral medicine, and oral pathology*, 78(5), 621.

65. Kumarasamy N, Solomon S, Madhivanan P, et al. Dermatologic manifestations among human immunodeficiency virus patients in south India. *Int J Dermatol* 2000; 39(3): 192-95.
66. Smith KJ, Skelton HG, Yeager J, et al. Cutaneous findings in HIV-1 positive patients: a 42-month prospective study. *J Am Acad Dermatol* 1994; 31: 746-54.
67. Muñoz-Pérez MA, Rodríguez-Pichardo A, Camacho F, et al. Dermatological findings correlated with CD4 lymphocyte counts in a prospective 3 year study of 1161 patients with human immunodeficiency virus disease predominantly acquired through intravenous drug abuse. *Br J Dermatol* 1998; 139(1): 33-39.
68. Singh A, Thappa DM, Hamide A. The spectrum of mucocutaneous manifestations during the evolutionary phases of HIV disease: an emerging Indian scenario. *J Dermatol* 1999; 26(5): 294-304.
69. Kolokotronis A, Antoniadis D, Katsoulidis E, et al. Facial and perioral molluscum contagiosum as a manifestation of HIV infection. *Aust Dent J* 2000; 45(1): 49-52.
70. Maurer T, Rodrigues LK, Ameli N, et al. The effect of highly active antiretroviral therapy on dermatologic disease in a longitudinal study of HIV type 1-infected women. *Clin Infect Dis* 2004; 38(4): 579-84.
71. Mirowski GW, Hilton JF, Greenspan D, et al. Association of cutaneous and oral diseases in HIV-infected men. *Oral Dis* 1998; 4(1): 16-21.
72. Koopman RJ, van Merrienboer FC, Vreden SG, et al. Molluscum contagiosum: a marker for advanced HIV infection. *Br J Dermatol*. 1992; 126: 528-29.
73. Ficarra G, Gaglioti D. Facial molluscum contagiosum in HIV-infected patients. *International journal of oral and maxillofacial surgery* 1989; 18(4): 200-01.
74. Ikoona E, Kalyesubula I, Kawuma M. Ocular manifestations in paediatric HIV/AIDS patients in Mulago Hospital, Uganda. *Afr Health Sci* 2003; 3(2): 83-86.
75. Robinson MR, Udell IJ, Garber PF, et al. Molluscum contagiosum of the eyelids in patients with acquired immune deficiency syndrome. *Ophthalmology* 1992; 99(11): 1745-47.
76. Cursiefen C, Grunke M, Dechant C, et al. Multiple bilateral eyelid Molluscum Contagiosum lesions associated with TNFA-antibody and Methotrexate therapy. *Am J Ophthalmol* 2002; 134(2): 270-71.
77. Margo C, Katz NN. Management of periocular molluscum contagiosum in children. *J Pediatr Ophthalmol Strabismus* 1983; 20(1): 19-21.
78. Schornack MM, Siemsen DW, Bradley EA, et al. Ocular manifestations of molluscum contagiosum. *Clin Exp Optom* 2006; 89(6): 390-93.
79. Charteris DG, Bonshek RE, Tullo AB. Ophthalmic Molluscum contagiosum: clinical and immunopathological features. *Br J Ophthalmol* 1995; 79(5): 476-81.

80. Yoshinaga IG, Conrado LA, Schainberg SC, et al. Recalcitrant molluscum contagiosum in a patient with AIDS: Combined treatment with CO2 laser, trichloroacetic acid and pulsed dye laser. *Lasers Surg Med* 2000; 27(4), 291-94.
81. Calista D, Boschini A, Landi G. Resolution of disseminated molluscum contagiosum with Highly Active Anti-Retroviral Therapy (HAART) in patients with AIDS. *Eur J Dermatol* 1999; 9(3): 211-13.
82. French MA, Lenzo N, John M, et al. Immune restoration disease after the treatment of immunodeficient HIV-infected patients with highly active antiretroviral therapy. *HIV Med* 2000; 1(2): 107-15.
83. Ratnam I, Chiu C, Kandala NB, et al. Incidence and risk factors for immune reconstitution inflammatory syndrome in an ethnically diverse HIV type 1-infected cohort. *Clin Infect Dis* 2006; 42(3): 418-27.
84. De Carvalho, Vânia Oliveira, Cristina Rodrigues Cruz, et al. An Inflammatory Reaction Surrounding Molluscum Contagiosum as Possible Manifestation of Immune Reconstitution Inflammatory Syndrome in HIV Infection. *Pediatr Dermatol* 2010; 27(6): 631-634.
85. Murdoch DM, Venter WD, Feldman C, et al. Incidence and risk factors for the immune reconstitution inflammatory syndrome in HIV patients in South Africa: a prospective study. *AIDS* 2008; 22(5): 601-10.
86. Osei-Sekyere B, Karstaedt AS. Immune reconstitution inflammatory syndrome involving the skin. *Clin Exp Dermatol* 2010; 35(5): 477-81.
87. Pereira B, Fernandes C, Nachiambo E, et al. Exuberant molluscum contagiosum as a manifestation of the immune reconstitution inflammatory syndrome. *Dermatol Online J* 2007; 13(2): 6.
88. Micali G, Lacarrubba F. Augmented diagnostic capability using videodermatoscopy on selected infectious and non-infectious penile growths. *Int J Dermatol* 2011; 50(12): 1501-05.
89. Ianhez M, Cestari Sda C, Enokihara MY, et al. Dermoscopic patterns of molluscum contagiosum: a study of 211 lesions confirmed by histopathology. *An Bras Dermatol* 2011, 6(1): 74-79.
90. Zalaudek I, Giacomel J, Cabo H, et al. Entodermoscopy: a new tool for diagnosing skin infections and infestations. *Dermatology* 2008; 216(1): 14-23.
91. Ruocco E, Baroni A, Donnarumma G, et al. Diagnostic procedures in dermatology. *Clin Dermatol* 2011; 29(5): 548-56.
92. Trama JP, Adelson ME, Mordechai, E. Identification and genotyping of molluscum contagiosum virus from genital swab samples by real-time PCR and Pyrosequencing. *J Clin Virol* 2007; 40(4): 325-29.
93. Piccinno R, Carrel CF, Menni S. Preputial ectopic sebaceous glands mimicking molluscum contagiosum. *Acta Derm Venereol* 1990; 70(4): 344-45

94. Feliciani C, Pennacchia I, Massi G. Adult self-healing papular mucinosis on genital skin. *Clin Exp Dermatol* 2009; 34(8): e760-e762.
95. Sims SM, McLean FW, Davis JD, et al. Vulvar lymphangioma circumscriptum: a report of 3 cases, 2 associated with vulvar carcinoma and 1 with hidradenitis suppurativa. *J Low Genit Tract Dis* 2010; 14(3): 234-37.
96. Vlastos AT, Malpica A, Follen M. Lymphangioma circumscriptum of the vulva: a review of the literature. *Obstet Gynecol* 2003; 101(5 Pt 1): 946-54.
97. Heath TC, Patel A, Fisher D, et al. Disseminated *Penicillium marneffei*: presenting illness of advanced HIV infection; a clinicopathological review, illustrated by a case report. *Pathology* 1995; 27(1), 101-05.
98. Singh PN, Ranjana K, Singh YI, et al. Indigenous disseminated *Penicillium marneffei* infection in the state of Manipur, India: Report of four autochthonous cases. *J Clin Microbiol* 1999; 37: 2699-702.
99. Supparatpinyo K, Khamwan C, Baosoung V, Nelson KE, Sirisanthana T. Disseminated *Penicillium marneffei* infection in Southeast Asia. *Lancet* 1994; 344: 110-13.
100. Chiewchanvit, S, Chuaychoo B, Mahanupab P. Disseminated cryptococcosis presenting as molluscum-like lesions in three male patients with acquired immunodeficiency syndrome. *J Med Assoc Thai* 1994; 77(6): 322-26.
101. Murakawa GJ, Kerschmann R, Berger T. Cutaneous cryptococcus infection and AIDS. Report of 12 cases and review of literature. *Arch Dermatol* 1996; 132: 545-48.
102. Dharmshale SN, Patil SA, Gohil A, et al. Disseminated cryptococcosis with extensive cutaneous involvement in AIDS. *Indian J Med Microbiol* 2006; 24(3): 228-30.
103. Durden FM, Elewski B. Cutaneous involvement with *Cryptococcus neoformans* in AIDS. *J Am Acad Dermatol* 1994; 30(5 pt 2): 844-48.
104. Ghigliotti G, Carreg G, Farris A., et al. Cutaneous cryptococcosis resembling molluscum contagiosum in a homosexual man with AIDS. Report of a case and review of the literature. *Acta Derm-Venereolog* 1992; 72(3): 182-84.
105. Manfredi R, Mazzoni A, Nanetti A, et al. Morphologic features and clinical significance of skin involvement in patients with AIDS-related cryptococcosis. *Acta Derm Venereolog* 1996; 76(1): 72-74.
106. Pema K, Diaz J, Guerra L, et al. Disseminated cutaneous cryptococcosis. Comparison of clinical manifestations in the pre-AIDS and AIDS eras. *Arch Intern Med* 1994; 154(9): 1032-34.
107. Ramdial PK, Calonje E, Sing Y, et al. Molluscum-like cutaneous cryptococcosis: a histopathological and pathogenetic appraisal. *J Cutan Pathol* 2008; 35(11): 1007-13.
108. Rajpal S, Dwivedi S, Chaudhary SC. Disseminated cryptococcosis in an HIV-negative patient. *Trop Doct* 2009; 39(2): 114-15.

109. Imwidthaya P. Systemic fungal infections in Thailand. *J Med Vet Mycol* 1994; 32(5), 395-99.
110. Navarro EE, Tupasi TE, Verallo VM, et al. Disseminated histoplasmosis with unusual cutaneous lesions in a patient from the Philippines. *Am J Trop Medicine Hyg* 1992; 46(2): 141-45.
111. Hennessey NP, Parro EL, Cockerell, CJ. Cutaneous *Pneumocystis carinii* infection in patients with acquired immunodeficiency syndrome. *Arch Dermatol* 1991; 127(11): 1699-701.
112. Hunt SJ, Nagi C, Gross KG, et al. Primary cutaneous Aspergillosis near central venous catheters in patients with the acquired immunodeficiency syndrome. *Arch Dermatol* 1992; 128(9): 1229-32.
113. Castronovo C, Lebas E, Nikkels-Tassodji N, et al. Viral infections of the pubis. *Int J STD AIDS* 2012; 23(1): 48-50.
114. Shlay JC, McClung MW, Patnaik JL, et al. Comparison of sexually transmitted disease prevalence by reported level of condom use among patients attending an urban sexually transmitted disease clinic. *Sex Transm Dis* 2004; 31(3): 154-60.
115. Radcliffe KW, Daniels D, Evans BA. Molluscum contagiosum: a neglected sentinel infection. *Int J STD AIDS* 1991; 2(6): 416-18.
116. Van der Wouden JC, Van der Sande R, Van Suijlekom-Smit, et al. (2009). Interventions for cutaneous molluscum contagiosum. *Cochrane database of systematic reviews* (Online), (4), CD004767.
117. Barton SE, Chard S. Facial molluscum: treatment with cryotherapy and podophyllotoxin. *International Journal of STD & AIDS* 2002; 13(4): 277–78.
118. Syed TA, Lundin S, Ahmad M. Topical 0.3% and 0.5% podophyllotoxin cream for self-treatment of molluscum contagiosum in males. *Dermatology* 1994; 189(1): 65-68.
119. Teilla-Hamel D, Roux A, Loeb G. Pharmacokinetics and safety profile of topical podophyllotoxin (0.5% solution) on molluscum contagiosum in children. *Eur J Dermatol* 1996; 6: 437–40.
120. Liota E, Smith KJ, Buckley R, et al. Imiquimod therapy for molluscum contagiosum. *J Cutan Med Surg* 2000; 4:76-82.
121. Hengge UR, Goos M, & Arndt R. Topical treatment of warts and mollusca with Imiquimod. *Ann Intern Med* 2000; 132(1): 95.
122. Strauss RM, Doyle EL, Mohsen AH, et al. Successful treatment of molluscum contagiosum with topical imiquimod in a severely immunocompromised HIV-positive patient. *Int J STD & AIDS* 2001; 12(4), 264-66.

123. Hengge UR, Esser S, Schultewolter T, et al. Self-administered topical 5% Imiquimod for the treatment of common warts and molluscum contagiosum. *Br J Dermatol* 2000; 143:1026-31.
124. Barba AR, Kapoor S, Berman B. An open label safety study of topical imiquimod 5% cream in the treatment of molluscum contagiosum in children. *Dermatol Online J* 2001; 7: 20-23.
125. Syed TA, Goswami J, Ahmadpour OA, et al. Treatment of Molluscum Contagiosum in males with an analog of Imiquimod 1% in cream: a placebo-controlled, double-blind study. *J Dermatol* 1998; 25: 309-13.
126. Lin HY, Linn G, Liu CB, et al. An immunocompromised woman with severe molluscum contagiosum that responded well to topical imiquimod: a case report and literature review. *J Low Genit Tract Dis* 2010; 14(2): 134-35.
127. Bayerl C, Feller G, Goordt S: Experience in treating molluscum contagiosum in children with imiquimod 5% cream. *Br J Dermatol* 2003; 149(suppl 66): 25–29.
128. Hanna D, Hatami A, Powell J, et al. A prospective randomized trial comparing the efficacy and adverse effects of four recognized treatments of molluscum contagiosum in children. *Pediatr Dermatol* 2006; 23(6): 574-79.
129. Martín-García RF, García ME, Rosado A. Modified curettage technique for molluscum contagiosum. *Pediatr Dermatol* 2007; 24(2): 192-94.
130. Simonart T, De Maertelaer V. Curettage treatment for molluscum contagiosum: a follow-up survey study. *Br J Dermatol* 2008; 159(5), 1144-47.
131. Binder B, Weger W, Komericki P, et al. Treatment of Molluscum Contagiosum with a pulsed dye laser: pilot study with 19 children. *JDDG* 2008; 6: 121-25.
132. Michel JL. Treatment of molluscum contagiosum with 585 nm collagen remodeling pulsed dye laser. *Eur J Dermatol* 2004; 14(2): 103-06.
133. Chatproedprai S, Suwannakarn K, Wananukul S, et al. Efficacy of pulsed dye laser in the treatment of Molluscum Contagiosum Subtype 1. *Southeast Asian J Trop Med Public Health* 2007; 38(5): 849-54.
134. Dabis R, Rosbotham J, Jones L, et al. Potassium titanyl phosphate (KTP) laser treatment for Molluscum Contagiosum. *J Dermatol Treat* 2006; 17(1): 45-47.
135. Nehal KS, Sarnoff DS, Gotkin RH, et al. Pulsed dye laser treatment of molluscum contagiosum in a patient with acquired immunodeficiency syndrome. *Dermatol Surg* 1998; 24(5): 533-35.
136. Hancox JG, Jackson J, McCagh S. Treatment of molluscum contagiosum with the pulsed dye laser over a 28-month period. *Cutis* 2003; 71(5): 414-16.
137. Hughes PS. Treatment of molluscum contagiosum with the 585-nm pulsed dye laser. *Dermatol Surg* 1998; 24(2): 229-232.

138. Hindson C, Cotterill J. Treatment of molluscum contagiosum with the pulsed tuneable dye laser. *Clin Exp Dermatol*. 1997; 22(5): 255.
139. Leslie KS, Dootson G, Sterling JC. Topical salicylic acid gel as a treatment for molluscum contagiosum in children. *J Dermatolog Treat* 2005; 16(5-6): 336-40.
140. Ohkuma M. Molluscum contagiosum treated with iodine solution and salicylic acid plaster. *Int J Dermatol* 1990; 29(6): 443-45.
141. Sadick N, Sorhaindo L. A comparative split-face study of cryosurgery and trichloroacetic acid 100% peels in the treatment of HIV-associated disseminated facial molluscum contagiosum. *Cutis* 2009; 83(6): 299-302.
142. Garrett SJ, Robinson JK, Roenigk Jr HH. Trichloroacetic acid peel of molluscum contagiosum in immunocompromised patients. *J Dermatol Surg Oncol* 1992; 18(10): 855-58.
143. Saryazdi S. The comparative efficacy of benzoyl peroxide 10% cream and tretinoin 0.05% cream in the treatment of molluscum contagiosum. Abstract 10th World Congress on Pediatric Dermatology. *Pediatric Dermatology* 2004; 21(3):399.
144. Ormerod AD, White MI, Shah SA, et al. Molluscum contagiosum effectively treated with a topical acidified nitrite, nitric oxide liberating cream. *Br J Dermatol* 1999; 141(6): 1051-53.
145. Romiti R, Ribeiro AP, Romiti N. Evaluation of the effectiveness of 5% potassium hydroxide for the treatment of molluscum contagiosum. *Pediatr Dermatol* 2000; 17(6): 495.
146. Romiti R, Ribeiro AP, Grinblat BM, et al. Treatment of molluscum contagiosum with potassium hydroxide: a clinical approach in 35 children. *Pediatr Dermatol* 1999; 16(3): 228-31.
147. Short KA, Fuller LC, Higgins EM. Double-blind, randomized, placebo-controlled trial of the use of topical 10% potassium hydroxide solution in the treatment of molluscum contagiosum. *Pediatr Dermatol* 2006; 23(3): 279-81.
148. Metkar A, Pande S, Khopkar U. An open, nonrandomized, comparative study of imiquimod 5% cream versus 10% potassium hydroxide solution in the treatment of molluscum contagiosum. *Indian J Dermatol Venereol Leprol* 2008; 74(6): 614-18.
149. Rajouria EA, Amatya A, Karn D. Comparative Study of 5% Potassium Hydroxide Solution versus 0.05% Tretinoin Cream for Molluscum Contagiosum in Children. *Kathmandu Univ Med J* 2011; 9(36): 291-94.
150. Niizeki K, Hashimoto K. Treatment of molluscum contagiosum with silver nitrate paste. *Pediatr Dermatol* 1999; 16(5): 395-97.
151. Calista D. Topical Cidofovir for severe cutaneous Human Papilloma Virus and Molluscum Contagiosum infections in patients with HIV/ AIDS. A pilot study. *JEAVD* 2000; 14(6): 484-88.

152. Toro JR, Wood LV, Patel NK, et al. Topical cidofovir. A novel treatment for recalcitrant molluscum contagiosum in children infected with human immunodeficiency virus. *Arch Dermatol* 2000; 136: 983–85.
153. Davis EG, Thrasher A, Lacey K, et al. Topical Cidofovir for severe Molluscum Contagiosum. *Lancet* 1999; 353(9169): 2042.
154. Zabawski EJ, Cockerell CJ. Topical cidofovir for molluscum contagiosum in children. *Pediatr Dermatol* 1999; 16, 414–15.
155. Meadows KP, Tyring SK, Pavia AT, et al. Resolution of recalcitrant molluscum contagiosum virus lesions in human immunodeficiency virus-infected patients treated with cidofovir. *Arch Dermatol* 1997; 133: 987-90.
156. Ibarra V, Blanco JR, Oteo JA, et al. Efficacy of cidofovir in the treatment of recalcitrant molluscum contagiosum in an AIDS patient. *Acta Derm Venereol* 2000; 80: 315–16.
157. Erickson,C, Driscoll M, Gaspari A. Efficacy of intravenous cidofovir in the treatment of giant molluscum contagiosum in a patient with human immunodeficiency virus. *Arch Dermatol*, 2011; 147(6), 652-54.
158. Nelson MR, Chard S, Barton SE. Intralesional interferon for the treatment of recalcitrant molluscum contagiosum in HIV antibody positive individuals--a preliminary report. *Int J STD AIDS* 1995; 6(5): 351-52.
159. Hourihane J, Hodges E, Smith J, et al. Interferon α treatment of Molluscum Contagiosum in immunodeficiency. *Arch Dis Child* 1999; 80(1): 77-79.
160. Kilic SS, Kilicbay F. Interferon-alpha treatment of molluscum contagiosum in a patient with hyperimmunoglobulin E syndrome. *Pediatrics* 2006; 117(6): 1253-55.
161. Sen S, Bhaumik P. Resolution of giant Molluscum contagiosum with antiretroviral therapy. *Indian JDermatol Venereol Leprol* 2008; 74(3): 267-68.
162. Sen S, Goswami BK, Karji N, et al. Disfiguring Molluscum contagiosum in a HIV-positive patient responding to antiretroviral therapy. *Indian JDermatol* 2009; 54(2): 180-82.
163. Hurni MA, Böhlen L, Furrer H, et al. Complete regression of giant molluscum contagiosum lesions in an HIV-infected patient following combined antiretroviral therapy with saquinavir, zidovudine and lamivudine. *AIDS* 1997; 11(14): 1784-85.
164. Cattelan AM, Sasset L, Corti L, et al. A complete remission of recalcitrant molluscum contagiosum in an AIDS patient following highly active antiretroviral therapy (HAART). *J Infect* 1999; 38(1): 58-60.
165. Hicks CB, Myers SA, Giner J. Resolution of intractable molluscum contagiosum in a human immunodeficiency virus-infected patient after institution of antiretroviral therapy with ritonavir. *Clin Infect Dis* 1997; 24(5): 1023-25.

