

A Comparative Study Of Efficacy Of 10% KOH, 50% Trichloroacetic Acid And 25% Podophyllin For The Treatment Of Genital Molluscum In Females

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Abstract

Background: Molluscum contagiosum is caused by MC virus, the largest human virus and sole member of genus molluscipox. Transmission of the virus occurs by direct person-to-person contact or via contact with infected objects. Sexually active adults are more prone to develop it in genital area due to sexual transmission. **Subjects and Methods:** A randomized comparative therapeutic study was conducted from November 2017 to October 2018. **Results:** A total of 60 female patients with genital molluscum were enrolled in the study. The average age of the patients was 25.6 yrs. 66% presented less than 10 lesions, 28% presented from 10 to 20 lesions, and 6% presented more than 20 lesions at the initial examination. The results showed that the mean lesion count decreased from 22.39 to 6.75 with KOH, from 20.79 to 4.31 with TCA and from 20.49 to 4.1 with 25% podophyllin at the end of 4 weeks. We found complete clearance of lesions in 13 (65%) patients with 10% KOH, 15 (75%) patients with TCA, and in 11 (55%) patients with 25% podophyllin. Minor side effects were seen in 11 (55%) patients on TCA, 12 (60%) patients on KOH and 16 (80%) patients on podophyllin. **Conclusion:** All the three modalities i.e. 10% KOH, 50% TCA and 25% podophyllin are effective local therapies for the treatment of genital molluscum.

Keywords: Molluscum contagiosum, podophyllin, trichloroacetic acid and 10% KOH.

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Introduction

Molluscum contagiosum was first detected by Bateman in the year 1814.^[1] Its viral etiology was established only in the year 1905 by Julisberg.^[2] Molluscum contagiosum is caused by MC virus, the largest human virus and sole member of genus molluscipox.^[3] Pox viruses are complex DNA viruses that replicate in the cytoplasm of epidermal cells. They are large viruses, slightly smaller than bacteria. They are brick or ovoid shaped double stranded DNA viruses. Man is infected by three kinds of pox viruses: orthopox viruses (variola, vaccinia), parapox viruses (ORF, milker's nodules), and intermediate viruses (molluscum contagiosum, tanapox). Molluscum can be found worldwide, but predominant in tropical areas. Climatic factors such as warmth and humidity may influence transmission. Transmission of the virus occurs by direct person-to-person contact or via contact with infected objects. Autoinoculation can occur from the manipulation of lesions by the patient. In adults, MC is mostly a sexually transmitted disease. It is more prevalent with unprotected sex and in those with multiple sex partners. In AIDS, it may be the presenting complain. Incubation period varies from 14 days to 6 months.

Clinical manifestations: MCV produces single or multiple,

umbilicated, skin colored, opalescent, discrete, smooth, dome shaped waxy papules. They appear vesicular because of translucent nature the size of papules may be 2-6 mm, but it may be as large as 1 cm in immunocompromised individuals. They may be grouped forming large plaques or disseminated.

They can occur anywhere in the body, but mostly seen on face, axilla, anticubital and popliteal fossa and perineal areas. Palms and soles are rarely involved. MC lesions are usually asymptomatic but rarely they may be painful, tender and pruritic. Individual lesions last several weeks or months. Lesions are usually self-limiting, resolve by forming erythema, pus and crusting. In 10% of cases eczematous dermatitis may occur around the lesions which is referred to as molluscum dermatitis.

Multiple, disseminated infections are seen in atopic dermatitis, sarcoidosis and immunocompromised individuals. In HIV infection, the lesions may be numerous, giant, confluent, atypical and persistent. The severity of infection is inversely related to CD4 count. Molluscum confined to hair follicles, molluscum folliculitis has been reported in HIV infection. MC on eyelids may cause conjunctivitis and/or keratitis. Cellulitis as a complication of MC has been reported in an AIDS patient.

Diagnosis: The diagnosis is mostly done on clinical

grounds. MCV cannot be cultured in a laboratory. The material obtained by crushing the lesion can be used to make smear which on staining with Giemsa or Wright stain show homogenous pear shaped molluscum bodies.

Dermoscopy: Dermoscopy has been found to be useful in clinically doubtful cases. The central orifice is most frequently visualised on dermoscopy. Different vascular patterns can be seen—crown, radial, punctiform and mixed. Floral pattern is specific for molluscum contagiosum. The punctiform pattern is associated with inflamed lesions and lesions with perilesional dermatitis.

Treatment: MC is a self-limiting disease and even if untreated, it nearly always resolves spontaneously. It may take 6-9 months for resolution and in some cases as long as 3-4 yrs. Whether the lesions should be treated or left alone can be decided by patient's concern, persistence of the lesions and the stigma caused by them. Different approaches of treatment are described in the literature. The most cited treatment techniques are cryotherapy; laser therapy; curettage; and several topical substances—tretinoin, potassium hydroxide (KOH), cantharidin, imiquimod, trichloroacetic acid and the combination of salicylic and lactic acids are most common.^[4,5] There are also descriptions of the use of immunomodulators and antivirals.^[6-8]

The aim of the present study was to evaluate and compare the effectiveness of topical 10% KOH solution, 50% topical TCA and 25% topical podophyllin solution as treatment options in molluscum contagiosum affecting genitals in females.

Subjects and Methods

A randomized comparative therapeutic study was conducted in the Department of Obstetrics and Gynaecology in Rama Medical College, Hapur, Ghaziabad, U.P. and A.K. Jha Amar Skin and Laser Institute, Patna. A total number of 60 non pregnant female patients were enrolled in the study from November 2016 to October 2017 and were randomly divided into 3 groups. History and clinical examination was done to determine number and size of lesion. Clinical photographs were taken. An informed consent was obtained from each patient. Full information about therapeutic agents intended to be used including the side effects and method of application were given. Patients in group 1 were treated with 10% KOH, those in group 2 were treated with 50% TCA (trichloro acetic acid) and group 3 patients were treated with 25% podophyllin. 10% KOH was applied once daily by the patient only. 50% Trichloroacetic acid was applied in the OPD at weekly interval upto 4 weeks after covering the surrounding area with Vaseline. 25% podophyllin application was done by the patient every alternate night after applying Vaseline in surrounding area and was washed off after 4 hours. All patients were examined at the end of 1st, 2nd, 3rd and 4th week. On each visit response was noted in terms of regression in size and number of lesions or any topical side effects in the form of burning, itching, redness or ulceration. Photographs of lesions were taken before and after treatment.

Results

A randomized comparative therapeutic study was conducted in the Department of Obstetrics and Gynaecology in Rama Medical College, Hapur, Ghaziabad, U.P. and A.K. Jha Amar Skin and Laser Institute, Patna. A total number of 60 non pregnant female patients were enrolled in the study and were randomly divided into 3 groups. History and clinical examination was done to determine number and size of lesion.

Table 1: Shows the distribution of patients according to age group

Age of the patients	Number of patients in Group 1	Number of patients in Group 2	Number of patients in Group 3
00-20 yrs	03	02	03
20-40yrs	13	15	16
40-60 yrs	04	03	01
>60 yrs	00	00	00

Most of the patients in all three group belonged to the age group 20-40 yrs [Table1]. The average age of the patients was 25.6 yrs.

Table 2: Shows the clinical characteristics of the patients

Total number of lesions	Group 1 (KOH)	Group 2 (TCA)	Group 3 (PODOPHYLLIN)
At first visit	448	416	410
At the end of 1st week	354	290	305
At the end of 2nd week	222	196	179
At the end of 3rd week	150	105	100
At the end of 4th week	135	86	82

20% presented less than 10 lesions, 36% presented from 10 to 20 lesions, and 44% presented more than 20 lesions at the initial examination. The results showed that the mean lesion count decreased from 22.39 to 6.75 with KOH, from 20.79 to 4.31 with TCA and from 20.49 to 4.1 with 25% podophyllin at the end of 4 weeks [Table2]. We found complete clearance of lesions in 13(65%) patients with 10% KOH, 15 (75%) patients with TCA, and in 11 (55%) patients with 25% podophyllin.

Table 3: Showing the side effects

Side Effects	Group 1	Group 2	Group 3
Erythema	03	06	04
Itching/burning	09	17	13
Ulceration	01	02	01
Secondary infection	00	00	00
Total number of patients with side effects	12	11	16

Minor side effects were seen in 12 (60%) patients on KOH, 11(55%) patients on TCA and 16 (80%) patients on podophyllin [Table 3].

Discussion

MC is a self-limited viral infection in immunocompetent children and adults, which if untreated may resolve

spontaneously.^[9] A study by Vander Wouden JC et al.^[10] states reasons for intervention that includes alleviating discomfort, itching, social stigma associated with many visible lesions; cosmetic reasons; limiting its spread to other areas of the body and to other people; preventing scarring and secondary infection; and preventing trauma and bleeding of lesions. Although waiting for the condition to resolve on its own is an option, many parents and patients prefer the removal of the lesions. There is no consensus regarding the most effective treatment for this dermatosis. Good reviews comparing available treatments have been published. The treatments are classified into destructive, immunomodulators and antiviral. Destructive treatments are the most common and include curettage, cryotherapy, chemical cauterization and the application of keratolytic substances (salicylic and lactic acids, tretinoin) or vesicants (cantharidin). A review by Brown and colleagues compared several treatment options for MC, describing their advantages and disadvantages. There has been a preference for destructive treatments (cantharidin, cryosurgery and curettage) because they showed fast results with few adverse effects. The present study did not present a statistical difference in any of the analyses conducted, in spite of the tendencies verified in some of them. For instance, in the pain evaluation, more than half of the patients who received TCA treatment reported moderate pain, while minor pain was most reported in the other two groups. No important complication was reported, and the differences among adverse effects were not statistically significant among the groups, despite the fact that the TCA group presented more erythema, pain, hyperpigmentation and scarring, KOH group presented more erythema and pruritus at the end of the follow-up. Short et al,^[11] in 2006 treated 10 patients with 10% KOH solution in a placebo controlled study and they found 70% clearance rate for KOH versus 20% for the placebo which is comparable with our study. Romiti et al,^[12] reported a full remission in 32 out of the 35 (91.4%) patients treated with 10% KOH solution in an average of 30 days. In a study conducted by Masood et al.^[13] 20% KOH solution was applied by multiple puncture technique with a 26-gauge needle. They observed that this technique reduced the need for repeated applications. A majority of the patients responded to a single application of KOH with minimal side effects. In a study done by Garrett et al,^[14] average reduction in lesions was 40.5% on treatment with TCA in the strength of 25-50%. In our study 50% strength was used which showed

79% reduction in lesions.

Conclusion

We concluded from the study that the treatment of this condition must be individualized, taking the patients' preference, tolerance and availability of time into consideration. All the three modalities i.e. 10% KOH, 50% TCA and 25% podophyllin are effective local therapies for the treatment of genital molluscum.

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