



A COMPARATIVE STUDY TO EVALUATE THE THERAPEUTIC EFFICACY AND SAFETY OF AUTOINOCULATION OF CAPSULE VERSUS WHOLE LESION OF MOLLUSCUM CONTAGIOSUM

Dr Yogita Ashiya*

Junior Resident Department Of Dermatology, Venereology & Leprosy, Jln Medical College Associated Group Of Hospitals, Ajmer, Rajasthan, India.
*Corresponding Author

Dr Rajkumar Kothiwala

Senior Professor And Head, Department Of Dermatology, Venereology & Leprosy, Jln Medical College Associated Group Of Hospitals, Ajmer, Rajasthan, India.

Dr Tanvi Jain

Junior Resident Department Of Dermatology, Venereology & Leprosy, Jln Medical College Associated Group Of Hospitals, Ajmer, Rajasthan, India.

ABSTRACT

Background: Molluscum contagiosum is caused by molluscum contagiosum virus (MCV) of poxviridae family. Several treatment options are ablative, topical agents or immunomodulatory therapy. Autoinoculation helps in inducing a cell-mediated immune response to the antigens, aiding clearance of lesions. **Objective:** To assess the comparative therapeutic efficacy and safety of technique for Autoinoculation of capsule versus Autoinoculation of whole lesion of molluscum contagiosum. **Methods:** Molluscum contagiosum cases having minimum 5 lesions and age between 5 to 60 years were taken in this study. Out of total 50 patients, 25 patients (group A) treated with autoinoculation of capsule of molluscum lesion (i.e. the covering of lesion of molluscum after evisceration or enucleation of whitish core of Mollusca) and the other 25 patients (group B) treated with autoinoculation of whole lesion of molluscum contagiosum and followed up on 4, 8 and 12 weeks. **Results:** Among 25 patients in group A, 72% (n=18) patients showed complete response, and in group B, 64% (n=16) patients showed complete response, at the end of therapy. Maximum response in group A was around 8 weeks in 52% patients and in group B around 12 weeks in 56% patients. **Conclusions:** Both techniques of autoinoculation are simple, safe, efficacious and cost-effective treatment modalities with minimum recurrences and adverse effects.

KEYWORDS : Molluscum contagiosum, capsule, whole lesion, Autoinoculation.

INTRODUCTION

Molluscum contagiosum (MC) is common cutaneous viral infection which commonly affects children and young adults. It presents as asymptomatic or itchy, discrete, smooth, skin coloured, dome-shaped papules with central umbilication.¹

In spite of the multiple treatment options are there like ablative (e.g. curettage, evisceration, electrodesiccation and topical agents like TCA, KOH, Cantharidin etc) or immunomodulatory therapy in some cases lesions become extensive and persist for more than 3 to 4 years. Autoinoculation is a simple technique which helps in inducing a cell-mediated immune response to the antigens, aiding clearance of both local and distant lesions.

Objective:

To assess the comparative therapeutic efficacy and safety of technique for Autoinoculation of capsule versus Autoinoculation of whole lesion of molluscum contagiosum in terms of reduction in number of lesions.

MATERIALS AND METHODS

Study Design

This prospective interventional study was conducted in the Department of Dermatology, venerology and leprosy at Jawahar Lal Nehru hospital, Ajmer, over a period of 1 year among 50 patients (25 patients in each randomized group)

Inclusion Criteria.

1. Molluscum contagiosum cases having minimum 5 lesions and age between 5 to 60 years.
2. Informed consent accepted patients, willing to involve in study.

Exclusion Criteria

1. Patients with tendency of keloid or hypertrophic scar.
2. Pregnancy and lactation.
3. Immunosuppressed patients due to drug or disease.
4. Patients having systemic STI (Syphilis, HIV, Hepatitis B and C)

Study Subjects

A total 50 clinically diagnosed molluscum contagiosum subjects attended Outpatient department (OPD) of Skin and VD department in JLN Hospital, Ajmer were enrolled in study. Procedure for autoinoculation was explained to inclusion criteria fit and informed consent filled subjects. Relevant laboratory investigations including Complete hemogram, Random blood sugar, Clotting time, Bleeding time, RFT, LFT, Urine pregnancy test, HIV, HBsAg, VDRL were advised after taking detailed history and examination.

Procedure

Whole procedure was performed under all aseptic precautions and after lignocaine sensitivity.

In 25 patients (**group A**) capsule autoinoculation was done. A well-developed molluscum lesion was chosen as donor site, and central whitish cheesy material of Mollusca was extracted with loop of Comedone Extractor, after deroofting (called as enucleation or evisceration) and then remaining so-called Capsule (cover of molluscum lesion) was taken with punch ranging 2-5 mm (according to size of lesion) then crushed over glass slide with surgical blade and autoinoculated in volar aspect of forearm and in another 25 patients (**group B**), whole lesion of molluscum was autoinoculated, after shaved off and crushed with surgical blade.

The recipient site for autoinoculation, in both the groups were taken as volar aspect of non-dominant forearm. The crushed bits of donor molluscum lesions were inserted in dermal pocket of forearm created with the help of 18 gauge needle. Fusidic acid cream was applied on donor and recipient sites and dressed well, and given oral antibiotics and advised not to wet or remove the dressing for 5 days.

Follow up:

The patients were followed up 4 weekly for a period of 3 months, after single session of autoinoculation (i.e. on 4, 8 and 12 weeks) to check efficacy and adverse effects of the treatment.

Demographic and clinical data of patients of both groups (Table 1) was comparable without any statistically significant difference.

Table 1 -demographic And Clinical Data Of Studied Groups

	Group A (capsule)	Group B (whole)
Age (years)		
Number of patients		
<10	2 (8%)	5 (20%)
11-20	11(44%)	7 (28%)
21-30	2 (8%)	7 (28%)
31-40	8 (32%)	3 (12%)
>40	2 (8%)	3 (12%)
Mean age(years)	24.96+11.6	22.92+12.8
Gender		
Male	12 (48%)	15 (60%)
Female	13 (52%)	10 (40%)
Mean no. of lesions(baseline)		
<10	2 (8%)	5(20%)
10-20	9(36%)	9(36%)
>20	14(56%)	11(44%)
Mean duration of lesions (months)	2.44 ± 1.29	2.06 ± 0.94
Previous treatment		
Yes	4 (16%)	6 (24%)
No	21(84%)	19(76%)

Assessment

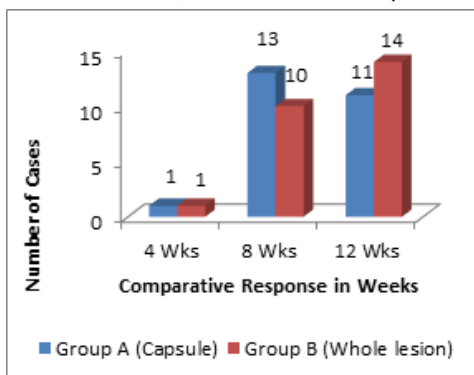
Decrease in number of lesions of molluscum contagiosum was evaluated by photographic comparison taken at baseline and follow up visits. The response to therapy for multiple Molluscum contagiosum were graded as follows:
 100% Reduction -- CR (complete response)
 50 - 99% Reduction-- PR (partial response)
 Less than 50% Reduction -- NR (no response/ inadequate response)

RESULTS

Table 2 - Comparison Of Responses Between Studied Groups

Response at the end of therapy	Group A (Capsule) No. of patients	Group B (Whole lesion) No. of patients
Complete Response	18 (72%)	16 (64%)
Partial Response	4 (16%)	5(20%)
No Response	3 (12%)	4 (16%)
Total patients	25 (100%)	25(100%)

The response of Autoinoculation at the end of therapy showed in (Table 2). In group A, out of 25 patients 18 patients (72%) had complete response, partial response in 4 patients (16%) and 3 patients (12%) had no response. In group B, out of 25 patients 16 patients (64%) had complete response, partial response in 5 patients (20%) and 4 patients (16%) had no response. Maximum response in group A seen around 8 weeks, in group B seen around 12 weeks (as shown in GRAPH 1)



Graph 1--comparative Maximum Response In Weeks



Fig.1 - Molluscum contagiosum patient (Before and after 3 months of Autoinoculation)

Mild side effects in the form of PIH, pain with irritation and secondary infection seen in 3, 3 and 2 patients respectively in group A and PIH, pain with irritation and secondary infection seen in 6, 2 and 3 patients respectively in group B. Only 1 patient (4%) in group A and 2 patients (8%) in group B presented with recurrence of disease.

DISCUSSION

Molluscum contagiosum (MC) is an infection of the skin and mucous membrane caused by a DNA virus from the poxvirus family. It usually affects any part of the body and presents as pearly, flesh colored dome shaped nodule with a central umbilication.²

Autoinoculation helps to trigger a cell mediated immune response to the antigen helping to clear local as well as distant lesions. Specific autoimplantation studies done previously on wart have shown to be associated with the development of Th1 cytokines (TNF-alpha and IL-1). They are known to activate the cytotoxic T cell and NK cells to remove the virus infected cells.³

In our study, 72% patients in group A and 64% patients in group B showed complete response. These results were comparable to studies by Saraswat et al,⁴ Gupta K et al⁵, Kachhawa et al³ where clearance was 77.3%, 88.3%, 55.2% respectively.

We observed PIH, pain with irritation and secondary infection in 3, 3 and 2 patients respectively in group A and in 6, 2 and 3 patients respectively in group B. The side effect profile was comparable to studies by Choudhary et al¹, Saraswat et al⁴, Gupta et al⁵ and Samagani et al.⁶

We noted, recurrence in 1 patient (4%) in group A and 2 patients (8%) in group B on 4 weekly follow up upto 6 months after autoinoculation.

Saraswat et al⁴ and Gupta et al ⁵ also reported similar recurrence in 3% and 9% patients respectively.

CONCLUSION

Both techniques of autoinoculation are simple, safe, efficacious and cost- effective treatment modalities with minimum recurrences and adverse effects. However the capsule autoinoculation showed slightly earlier and better response as compared to whole lesion autoinoculation.

Although, larger randomized controlled trials with longer followup are needed.

Declaration Of Patient Consent

Written consent was taken from the patients or parents of patients about procedure and for images and other clinical information reported in the article.

Financial Support and Sponsorship

Nil

Conflicts Of Interest

None

REFERENCES:

1. Choudhary D, Yadav C, Kachhawa D, Rajoriya D. Clinical study to evaluate the efficacy of autoinoculation in genital molluscum contagiosum in reproductive age group. *Indian J Sex Transm Dis AIDS*. 2023 Jul-Dec;44(2):135-138. doi: 10.4103/ijstd.ijstd_102_22. Epub 2023 Dec 6. PMID: 38223148; PMCID: PMC10785101.
2. Nandhini G, Rajkumar K, Kanth KS, Nataraj P, Ananthakrishnan P, Arunachalam M. Molluscum contagiosum in a 12-year-old child - report of a case and review of literature. *J Int Oral Health*. 2015 Jan;7(1):63-6. PMID: 25709372; PMCID: PMC4336666.
3. Kachhawa D, Sonare D, Vats G. Autoinoculation as a treatment modality for molluscum contagiosum: A preliminary uncontrolled trial. *Indian J Dermatol Venereol Leprol* 2018; 84:76-8
4. Saraswat S, Choudhary P, Joshi YR, Yadav C, Kachhawa D, Choudhary D, Singh H. Autoinoculation versus 35% trichloroacetic acid for the treatment of molluscum contagiosum: An open-label randomized controlled trial. *Turk J Dermatol* 2022; 16:16-22
5. Gupta, K., Bareth, A., & Agarwal, N. (2016). Autoimplantation therapy for the management of extensive molluscum contagiosum: a novel treatment approach. *International Journal of Research in Medical Sciences*, 4(5), 1392-1396.
6. Samagani A, Raveendra L, Raju BP A Therapeutic Trial Comparing Modified Autoinoculation, a Novel Approach with Topical Potassium Hydroxide Application in the Treatment of Molluscum Contagiosum. *J Cutan Aesthet Surg*. 2022 JanMar;15(1):65-70.