

GENITAL MOLLUSCUM CONTAGIOSUM AND HIV- A COMPARATIVE STUDY

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ABSTRACT**BACKGROUND**

Genital Molluscum (GM) is Sexually Transmitted Disease (STD), common in young adults. Will there be any clinical differences including dissemination with HIV status? So, we compared GM clinically in HIV positive and negative patients.

MATERIALS AND METHODS

50 patients of GM, 25 in each group of HIV positive and negative were compared in this observational and prospective study. P value less than i.e. < 0.05 was considered as significant association.

RESULTS

A: HIV positivity was associated significantly in- a) Age: Higher age group (43 years and 28 years respectively) (p- 0.000); b) Trunk (p- 0.006); c) Face (p- 0.001); d) Giant size (p- 0.014); e) Infection or ulceration (p- 0.038); B: HIV positivity was not associated with Gender (p- 0.254).

CONCLUSION

Presence of molluscii was associated with HIV positivity with trunk, face, giant size and infection/ulceration, which can be a marker of HIV infection. Gender has no association with HIV infection. Thus, clinical presentation of Genital Molluscum differs with the HIV status of patients. Overall dissemination at multiple sites is common in HIV positive group.

KEYWORDS

Genital Molluscum, Comparison, Dissemination, Markers, HIV.

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BACKGROUND

We compare here clinical presentation of genital molluscum in HIV positive and negative group of patients. Molluscum Contagiosum (MC) or molluscii (i.e. plural of molluscum), occurs worldwide with a prevalence of 5% - 11%.¹ By restriction endonuclease and PCR analysis of "molluscipox" DNA, mcv-1 and 2 are common types, but MCV- 3 and 4 are rare types. Cellular transmission of viral DNA occurs above the suprabasal layer, forming a papule clinically and "molluscum body (Henderson-Paterson body)" an eosinophilic cytoplasmic inclusion of 25 micrometres on histological examination. Papules of MC can arise anywhere on the skin, but it can be accounted as a "Sexually Transmitted Disease, i.e. STD when it is contracted during a sexual contact from their sexual partner, usually on the genitalia having the risk of sexual transmission and autoinoculation.² So, GM being as a STD will have to be compared clinically in HIV status.

MATERIALS AND METHODS**Aims and Objectives**

To compare clinically Genital Molluscum in HIV positive and negative group of 25 patients in each group.

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**Settings and Design**

This observational, prospective and comparative study was conducted over 2-year period from March 2015 to February 2017. Sample size was decided as per our convenience by following the exclusion criteria like- 1. Under-treatment patients, 2. Refusal to HIV test, 3. Refusal for pre- and/or post-test counselling, 4. Refusal for photographs, 5. Unwillingness for regular followup and treatment, 6. Refusal for the detection of other concomitant STDs. All these exclusions led to the sample size 25 in each group. The study was approved by the Institutional Ethics Committee (IEC) of the Hospital. Patients attending the Dermatology Outpatient (OPD) with complaints of lesion, having papule on genital and near the genitalia were examined. Inclusion criteria were patients of either gender between 15 - 60 years, willing to undergo HIV testing and photographs may be published. Simple consecutive sampling of MC patients 25 in each group of HIV positive and negative was done. Those patients having molluscii only on skin other than on genitals were excluded. Confidential interviews were undertaken to elicit risk factors like history of sexual contact with sex-partner, after which the lesion appeared. Suspected patients were screened for MC on genital as well as extragenital skin. Microscopic diagnosis of molluscum was done only in doubtful patients, by presence of intracytoplasmic eosinophilic hyaline inclusions (Henderson-Paterson body) using a Giemsa's stain. All patients were screened for HIV by HIV testing was done in the hospital laboratory, though patients who wished to get their HIV test by "ELISA" method done from other standard laboratories were allowed to do so.

Statistical Analysis

Out of 50 patients, 28 patients are male and 22 patients are female. Data of age, gender, genital MC, face, trunk, giant size, infected/ulcerated MC are collected on each of these 50 patients. We have used statistical methods to analyse the above data. It includes “two samples proportion test” to count proportion between two HIV groups, nonparametric two-sample Mann-Whitney test for comparing different quantitative characteristics of two groups (HIV positive and HIV negative), chi-square test for association of two qualitative characteristics. All the statistical analysis has been done using SPSS (16.0 version) software. Test results were considered significant at $p < 0.05$.

RESULTS

Median		Interquartile Range		P value
HIV Positive	HIV Negative	HIV Positive	HIV Negative	
43	28	11	14	0.000
Tests: Mann-Whitney U -122.000 and 2-sided p-value- 0.000				
Table 1. Age Wise Observations in Genital Molluscum				

Results of Table 1: In HIV positive mean age was 43 years, while mean age in negative patients was 28 years. By observing the p -value < 0.05 (i.e. 0.000) there was a significant association of HIV positivity with age.

Gender	HIV Status		Total
	HIV Negative	HIV Positive	
Female	9	13	22
Male	16	12	28
Total	25	25	50
Test: Pearson Chi-Square- 1.299 df-1, 2-sided p-value- 0.254			
Table 2. 2 × 2 Contingency Table for Gender and HIV Status			

Results of Table 2: Male-to-female ratio was 1.27:1. By observing the p -value > 0.05 (i.e. 0.254), gender and HIV status are not associated.

Site	Number of HIV Positive Patients	Total Count of HIV Negative Patients	P-value
Molluscii on trunk	15	2	0.006
Molluscii on face	6	13	0.001
Giant size	7	1	0.014
Infection/Ulceration	9	3	0.038
Test: Table 3: P values and associations of GM with HIV status in different parameters, Two samples Proportion test			
Table 3. Presence of Mollusci at various Sites in 2 Groups of HIV			

DISCUSSION

There is an increasing trend of viral STDs including molluscum contagiosum.³ As per study by Pujari Shital et al in 2015 in India, the incidence of MC in HIV infected persons rises from 5% - 18% to 25% - 35%.⁴ Larger lesions of more than 1 cm are called as “Giant molluscum.”⁵ In the presence of HIV infection, the clinical appearance and the course of MC are atypical and clinical picture differs from the non-HIV population.

Age

In children, the typical distribution indicates that the transmission of the virus by occasional contact, which requires no HIV investigations.⁶ However, MC on genitalia in adult sexually active population will be an STD.⁷ As per Table

1, the mean age in HIV positive of MC was 43 years as compared to 28 years in negative, which shows a significant positivity as the age advances. In an Indian study, Narasimhalu and Muhilan in 2016 noted that those in age group 18 - 30 had the highest awareness (73.9%), while age group above 40 years had the lowest awareness (46.7%).⁸ This significant HIV positivity in MC patients above 40 age may be because of a loss of sexual spouse, alcoholism and better economic situation to afford sex with prostitutes, by which the risk of infection increases.

Gender

As per Table 2, though male were more than female, there was no significant relation with positivity ($P > .05$). In men, attitude of sex with poly-partners and unwanted sex makes them outnumbered than females.⁹ Comparatively, lower proportion of females can be explained on the grounds of diminished symptoms of STDs including genital MC in females may lead to failure to notice the disease and hence to report it.¹⁰

Molluscum on Trunk

In this study as per Table No. 3, significant HIV positivity was found in molluscii on trunk. An intimate skin-to-skin contact is sufficient for transmission of the MC virus, which may be responsible for spread on trunk.¹¹ Therefore, we recommend to rule out HIV infection for the spread of MC on trunk.

Molluscum on Face

HIV-infected patients may have lesions on trunk, but lesions on the face and neck are also common.^{12,13,14} MC on the face, eyelid as in our study is consistent with previous studies as there was a significant association of number on face and in positivity our study as per Table 3. MC on the face should be investigated for immunosuppressive state.

Giant Molluscum

Though the MC is self-limiting and may clear spontaneously; however, in HIV infected persons they attain “Giant” size persists long and refractory to treatment.¹⁵ Ashok Kumar in India in 2015 noticed that giant MC is a clue to the diagnosis of HIV infection.¹⁶ Table 3 shows a significant positivity in HIV infection with “Giant” molluscum.

Dissemination

Takahiro Watanabe et al stated that the humoral immune response to MC virus is usually confined with MC and may be affected by the immunological condition of the host.¹⁷ The spread is on face including on eyelids, neck is common with CD4 count < 200 cells/mm.⁴

Infection or Ulceration

As per Table 3, it was associated with HIV positivity. The bigger size molluscii are prone for infection or ulceration, usually found in HIV positive patients. As well as MC takes a chronic course and is usually refractory to various treatments in immune compromised patients, which is a foremost cause of above complications in HIV patients.¹⁵

Dissemination

Dissemination, i.e. spread at distant sites, away from genitalia with more numbers. From Table 3, it is more in HIV positive than negative group. There is a significant association with HIV positivity. The dissemination in HIV is very common and

it spreads numerously at multiple sites than the sero-negative group. Number may be inversely proportional to CD4 counts.¹⁸

Considerable debate remains as to whether the disease is caused by the reactivation of latent virus or whether it represents a recently acquired infection complicating the patient's progressive immunosuppression. Clinically, dissemination of MC in HIV-positive persons appears to be transmitted in both sexual and nonsexual patterns.¹² Thus, disseminated atypical MC can be the first sign of HIV infection and AIDS.¹⁹

Both the spread and severity of disease or average number on all sites in this study increased in HIV positive patients of genital MC, which might have co-relation with advanced immunosuppression with low CD4 count, which could not be done in this study, for want of facilities and unaffordability. In an infection of HIV, Anti-Retroviral Treatment (ART) is recommended to reduce the risk of giant size, dissemination and autoinoculation as well as to increase patient's quality of life.²⁰

Limitations of Study

The limited sample size is a reflection of the reduced prevalence of STIs in the general population. Our "exclusion" criteria of ongoing treatment, non-consent to HIV testing and non-consent to find other STDs also contributed to the limited sample size as mentioned in the beginning of the methodology. CD4 count could not be done because of the unaffordability, i.e. Cost factor.

CONCLUSION

The complications like dissemination, giant size, infection/ulceration are significantly associated more in HIV positive patients than sero-negative patients and can be a marker of HIV infection. HIV positivity was not associated with Gender. Clinical presentation of Genital Molluscum differs with the HIV status of patients. Overall, dissemination at multiple sites is common in HIV positive group.

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