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Original Research Article

Clinico Epidemiological Study of Genito-Ulcerative Sexually Transmitted Diseases in People Living with HIV/AIDS

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Conflict of interest: Nil

Abstract

Background: The importance of Genito-ulcerative STD has increased considerably due to the fact that these lesions are a major cofactor in the transmission of the HIV. Hence it is necessary to provide prompt and effective treatment as early as possible. It will prevent viral replication, will prevent infection to the spouse and it will prevent infection to the other people in the community.

Keywords: Sexually transmitted diseases, HIV/AIDS, Herpes genitalis, Syphilis, Chancroid.

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Introduction

Genital ulcerative disease can be defined as a condition in which there is a breach in the continuity of the epithelium of the genital skin and mucous membranes. The origin of sexually acquired genital ulcer diseases (GUDs) still appears deeply buried in antiquity. [1]

The advent of human immunodeficiency virus HIV/AIDS over the past 25 years has further deepened the scope of morbidity, mortality, and various forms of clinical presentations GUDs. [2,3] HIV/AIDS, which has no doubt created a fertile ground for sexually transmitted diseases (STDs) to thrive, and vice versa, presently poses a serious health threat to at least a billion people of the global community. [4,5,6]

The genitoulcerative STDs are major health problem in many developed and developing countries as a group of communicable disease, but prevalence rate is higher in developing countries. [7] The importance of genitoulcerative STD has increased considerably due to the fact that these lesions are a major cofactor in the transmission of the HIV [8]. Hence it is necessary to provide prompt and effective treatment as early as possible. It will prevent viral replication, will prevent infection to the spouse and it will prevent infection to the other people in the community.

Objective

This study aimed to study the demographic profile, prevalence and clinical presentations of Genito-ulcerative STD's in HIV patients reported at a tertiary care teaching hospital in South India. The findings are intended to assist physicians in diagnosing and treating Genito-ulcerative STD's in HIV/AIDS thereby improving outcome.

Materials and Methods

A minimum of 100 cases having genitoulcerative STD's reported to Dermatology outpatient clinic, Government General Hospital, Nirmal during the period of January 2024 to June 2025 are included in the study. Patients were counseled regarding the disease and informed consent was taken. Data was collected over a period of 18months with a minimum sample size of 100 patients. In every case, detailed history, clinical examination are carried out and provisional diagnosis is made. Laboratory confirmation of clinically diagnosed cases will be done using laboratory tests such as ELISA, VDRL, TPHA, Giemsa, Gram Stain, and Tzanck Smear. HIV patients of any age and sex diagnosed with genito-ulcerative STD's are included in study and HIV Patients with other than ulcerative STDs are excluded. Descriptive statistics, including frequencies, percentages, and

means, were employed to summarize clinical spectrum.

Ethical Considerations: Institutional Ethics Committee approval was obtained prior to initiation of the study and Patient confidentiality was maintained

Results

Age distribution: In the present study, most common age group affected was 30-39 years (46%), followed by 20-29 years (20%), and followed by 40-49 years (19%), 50-59 years (12%), and 60-69 years (2%), 10-19 years (1%) with a mean age of 36.76 years.

Mean age is 36.76 years with Standard deviation of 9.8833 year.

Table 1: Distribution of study population according to age and sex.

Age	Male	Female	Total	Percent
10-19	0	1(3.03%)	1	1.00%
20-29	16(24.24%)	4(12.12%)	20	20.00%
30-39	30(45.45%)	16(47.05%)	46	46.00%
40-49	9(10.61%)	12(36.36%)	19	19.00%
50-59	11(16.67%)	1(3.03%)	12	12.00%
60-69	2(3.03%)	0	2	2.00%
Total	66(66%)	34(34%)	100	100.00%

Sex distribution: In the present study, out of 100, 66 (66%) were male and 36(36%) were female with a male to female ratio of 1.9:1.

Table 2: Distribution of study population according to sex.

SEX	Frequency	Percent
Female	34	34.00%
Male	66	66.00%
Total	100	100.00%

Literacy: In the present study, out of 100, most of the patients were illiterate 56(56%), and 44(44%) were literate. Among literate patients 19(19%) were secondary school, followed by upper primary 7(7%), primary school (7%), inter 6(6%), graduation 5(5%)

Table 3: Distribution of study population according to Education status

Education	Frequency	Percent
Primary School	7	7.00%
Upper Primary School	7	7.00%
Secondary School	19	19.00%
Inter	6	6.00%
Graduation	5	5.00%
Illiterate	56	56.00%
Total	100	100.00%

Occupation: In the present study, out of 100, most patients were 46(46%) unskilled, followed by unemployed 21(21%), skilled 19(19%), self-employed 10(10%), and semiskilled 2(2%) and semiprofessional 2(2%).

Unskilled group comprises of daily Laborers and watchman, Retired employee.

Unemployed group consist of Housewives and Student.

Skilled group comprises of auto driver, car driver, truck driver, painter, carpenter, sofa maker and constable.

Semiskilled group consist of cook and tea stall workers.

Office boy, private employee comes under semiprofessional.

Table 4: Distribution of study population according to occupation

Sl.no	Occupation	Frequency	Percentage
1.	Semi professional	2	2%
2.	Self-employed/Farmer	10	10%
3.	Skilled	19	19%
4.	Semi-skilled	2	2%
5.	Unskilled	46	46%
6.	Unemployed	21	21%
7.	Total	100	100%

Marital Status: In the present study, out of 100, most of the patients were married 87(87%) and 13(13%) were unmarried.

Table 5: Distribution of study population according to marital status

Marital Status	Frequency	Percent
Married	87	87.00%
Unmarried	13	13.00%
Total	100	100.00%

Laboratory investigations: Out of 100 patients in our study, multinucleated giant cells in Tzanck smear were seen in 61 patients. VDRL positivity was seen in 22 patients, while TPHA reactivity was noted in 35 patients. In Gram stain, Gram -ve bacilli was seen in 4 patients, Gram –ve coccobacilli were seen in 15 patients. In 7 patients Donovan bodies were seen in Giemsa stain.

Table 6: Status of Lab investigation done among study population.

	Name of the investigation	No of patients positive
1	Tzanck	61
2	VDRL	22
3	TPHA	35
4	Gram stain	
	Gram-ve bacilli	4
	Gram-ve coccobacilli	15
5	Giemsa for Donovan bodies	7

Disease distribution: In our study out of 100 patients, maximum number of cases 60 (60%) were of herpes genitalis followed by primary syphilis 16 (16%), chancroid 9(9%), Donovanosis 7(7%), lymphogranuloma venereum 01 (01%). Out of total studied patients seven were of mixed infection.

Table 7: Distribution of study population according to the diagnosis.

DIAGNOSIS	Frequency	Percent
Donovanosis	7	7.00%
Chancroid	9	9.00%
Herpes	60	60.00%
LGV	1	1.00%
Mixed infection	7	7.00%
Syphilis	16	16.00%
Total	100	100

Discussion

AGE: The study shows that the majority of patients i.e.,46 (46%) belonged to sexually active age group i.e.,30- 39 years, followed by 20-29years (20%). Bhavesh Mehta et al [9] study, G Jombo et al [8] studies have also reported same age group involvement in their study. In S P Nair et al [10] study conducted among 121 HIV patients also shows same age group as other studies. The high incidence of GUDs among those aged 30- 39 years is understandable as this corresponds to the most sexually active age group with the attendant risk for transmission of both HIV and other sexually transmitted infections.

Sex: In the present study 66% male, 34% females were affected with Male to female ratio 1.9:1 [Table 2]. Among the HIV/AIDS attendees with GUDs the male gender constituted of the 66 subjects. More males indulge in extramarital sexual relations, which explain the higher prevalence in the male.

The male preponderance in the present study is similar to studies of Bhavesh Mehta et al [9]. However, G Jombo et al [8] have reported more frequency of GUDs in females. SP Nair [10] study shows maximum number of cases in males.

Marital Status: In the present study, out of 100, 87 were married, 13 were unmarried. HIV and other STDs like GUDs are most commonly found in married.

Education:

In present study, out of 100, most of the patients were illiterate which suggest that HIV is common among illiterate people probably due to lack of awareness of route of transmission of HIV and also due to low socioeconomic status and lack of safe sex and Condom practice.

Occupation: In the present study out of 100 patients, most patients were 46(46%) unskilled, followed by unemployed 21(21%), skilled 19(19%), self-employed 10(10%), and semiskilled 2(2%) and semiprofessional l2 (2%). Unskilled group comprises of daily Laborers and watchman,

Retired employee. Unemployed group consist of Housewives and Student. Skilled group comprises of auto driver, car driver, truck driver, painter, carpenter, sofa maker and constable.

DISEASE: Clinically maximum number of cases 60 (60%) were of herpes genitalis followed by primary syphilis 16 (16%), chancroid 9 (9%), Donovanosis 7(7%), lymphogranuloma venereum 01 (01%). Out of total studied patients seven were of mixed infection.

Herpes genitalis: In our study maximum numbers of cases were Herpes genitalis (60%) among all GUDs. In 60 patients of Herpes genitalis, 22 were male and 38 were females.60 cases of herpes genitalis were confirmed by visualization of acantholytic cells and multinucleated giant cells in Tzanck smear. In 1patient multinucleated giant cells were seen along with Donovan bodies in Giemsa stain indicating mixed infection. The high prevalence of Herpes genitalis in our study was comparable to the Bhavesh mehta et al [9], G Jombo et al [8] studies.

According to Risbund, Arun et al [11] Phiri, Sam et al [12] study Genital herpes was the most common GUD in HIV seronegative individuals. This high prevalence of Herpes genitalis irrespective of HIV sero status is attributable to reactivation of HSV. Immunosuppression is a triggering factor for frequent recurrences and more recurrences with shorter span [13]. Previously quiescent HSV disease can reactivate during immune reconstitution with HAART therapy [14]. However, in S P Nair et al [10] study syphilis is the most common GUD. Tong and Mutasim [15] reported a case that described HSV-2 presenting as hyperkeratotic verrucous lesions resembling condyloma in severely immunocompromised patient.

Syphilis

In our study the second most common GUD was found to be Syphilis (16%). Out of 16 patients of Syphilis 9 were males and 7 were females which were comparable to Bhavesh Mehta et al [9] study. In G Jombo et al [8] study Chancroid was the second most common GUD. In our study, diagnosed cases of primary syphilis, the reactivity of serum VDRL was seen in all cases. VDRL was also positive in 5 out of 13 cases of chancroid, which suggest the presence of mixed infection. Usually primary chancre is painless, but in our study, few presented with pain. In Yinnon A.M et al study delayed healing of lesions were observed in HIV patients.

Chancroid

In our study, out of 100 patients, third common GUD was Chancroid 9(9%). Out of 9, only one case reported in female, 8 patients were males. Incidence of chancroid seems to be apparently higher in males, which may be attributed to the, easily visible anatomy of male external genitalia, asymptomatic vaginal or cervical ulcers in females, less common occurrence of lymphadenitis and bubo formation in females, spontaneous healing of lesions resulting from

autoinoculation in dry areas like inner thighs, which were common in females16. Out of 100 patients, out of 9 cases of chancroid all the 9 were positive for pleomorphic Gram-negative coccobacilli and gram-negative coccobacilli were also seen in 6 patients of mixed infection. In Bhavesh Mehta et al [9] study also the frequency of GUD was Herpes, followed by Syphilis and Chancroid which was comparable to our study. However, in G Jombo et al [8] study it was Herpes followed by chancroid and LGV. In Phiri et al [12] study the frequency of GUD was Herpes followed by chancroid and Syphilis. In Risbund et al [11] study chancroid was the most common GUD. In our study most of the Chancroid patients presented with painful, non-indurated ulcers. Lymphadenitis was seen 5 patients of chancroid patients and 3cases of mixed infections. However atypical presentations were not seen in Chancroid in our study.

Donovanosis

In our study, out of 100, 7 (7%) were diagnosed as Donovanosis. It was fourth frequent GUD after Herpes, Syphilis and Chancroid. Out of 7 patients 4 were males and 3 were Females. In all cases gram negative bacilli were demonstrated with gram stain, Donovan bodies with giemsa stain. In our study 7 patients of donovanosis presented with painless ulcers over genitalia without any lymphedenopathy. No atypical presentations were noted. But the lesions took longer time to heal. No extra genital lesions, complications were noted in our study.

In G Jombo et al [8] study, Genital herpes was the most common GUD, followed by Chancroid, Lymphogranuloma venereum, Syphilis, Granuloma inguinale. Granuloma inguinale was the least common GUD encountered in males and females. In Risbund et al [11] study chancroid was the most common GUD followed by syphilis of various stages, herpes, Granuloma inguinale, and LGV. Mixed or multiple infections occurred in 39% of patients.

Mixed infection

In our study out of 100, 7 cases were of mixed infection. In 6 cases VDRL was reactive and gram –ve coccobacilli were seen in gram stain indicating mixed infection with H. Ducreyi and T. pallidum. In 1patient multinucleated giant cells were seen along with Donovan bodies in Giemsa stain

indicating mixed infection with HSV and K. granulomatis. In Bhavesh Mehta study [9] five were of mixed STDs and most common manifestation was the presence of multiple genital ulcers having different morphological appearance due to different causative organism.

LGV

In our study least common GUD was LGV (1%). In this case patient presented with an ulcer over glans. No lymphadenopathy was seen. VDRL non-reactive, TPHA –ve, no gram –ve organism were not seen in gram stain. No multinucleated giant cells were noted in Tzanck. Biopsy of the lesion showed orthokeratosis and parakeratosis of the epidermis with few entrapped neutrophils the basal layer was intact. The underlying dermis shows a diffuse dense infiltrate of neutrophils, lymphocytes and plasma cells. There are no granulomas or no evidence of malignancy.

Extra-genital lesions have been reported such as ulcers and fissures in the perianal area in MSM, the lip or oral cavity (tonsil), and extra-genital lymph nodes. Normally in LGV genital ulcers are transient, but in our case a non-healing ulcer was present over the glans and it was resistant to treatment. In Bhavesh Mehta study9 maximum number of cases 38% were of herpes genitalis followed by primary syphilis (32%), chancroid (26%), lymphogranuloma venereum (02%). In Jombo et al8 study Genital herpes was 43.68%, Chancroid 32.61%, Lymphogranuloma venereum 8.89%, Syphilis 6.12%, Condylomata acuminate 4.15%, Granuloma inguinale 3.55% while 0.99% of the lesions were unclassified.

Conclusion

Out of 100 cases of GUD few cases presented with atypical presentations and had slow response to treatment. In our study, prevalence of GUD is more in sexually active men irrespective of their HIV status. In our study we could find the presence of GUDs in illiterates when compared to literates which is the same with HIV seroprevalence. From our study we could infer that GUD was more prevalent in HIV seropositive people and vice versa. Therefore, treating dermatologists must be aware that In HIV people, GUDs have a more atypical presentation when compared to seronegative people and also respond poorly to treatment.

Author Contributions

Dr. Raghumohan kavati conceptualized the study, coordinated data collection, and prepared the manuscript draft.

Dr. Pravalika Merugu supervised the study design and provided critical manuscript revisions.

Dr. Gayathri Narukulla contributed to the clinical diagnosis, patient follow-up, and verification of GUD morphology.

All authors reviewed and approved the final version of the manuscript.

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