

Clinical profile of sexually transmitted infections in people living with HIV/AIDS

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Abstract

Introduction: Sexually transmitted infections (STIs) include all STDs with additional asymptomatic but transmissible infections. HIV and other STIs synergize to aggravate the associated morbidity of each other in the human body. Various studies have established the epidemiologic synergy between STDs and HIV. STIs have become a major public health problem in India with the advent of HIV/AIDS epidemic. The present study aims to observe the clinical profile of STIs in HIV positive patients and also to identify the atypical presentations of STIs in HIV infected individuals.

Materials & Methods: This observational study comprised of 100 consecutive cases of HIV positive patients with sexually transmitted infections (STIs) attending the outpatient department of DVL, Gandhi Hospital, Secunderabad, from January 2015 to June 2016.

Results & Discussion: In the present study, out of 100 cases included, majority of the patients were males belonged to lower socioeconomic group. Most common complaints with which patients presented were genital growths, genital ulcers and genital discharge. In the present study genital herpes was the most common STD followed by genital warts. Among bacterial STDs in our study syphilis was seen in 23% of the patients and was the third most common STI. Genital candidiasis was the commonest fungal infection which was seen in 22%. It was observed in our study that bacterial STIs (70.5%), fungal STIs (78.5%) and concurrent multiple STIs (66.6%) were more common in patients with CD₄ more than 200 cells/cu. mm. our study emphasizes the need to screen for HIV in patients presenting with STI complaints and to look for other STIs in HIV positive individuals. An accurate evaluation of the prevalence and spectrum of STIs helps to plan good management strategies in preventing STIs in HIV patients.

Keywords: Sexually transmitted infections (STIs), STDs, HIV, AIDS.

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1. Introduction

Sexually transmitted diseases (STDs) include the diseases that are transmitted by sexual route. Sexually transmitted infections (STIs) include all STDs with additional asymptomatic but transmissible infections. HIV and other STIs synergize to aggravate the associated morbidity of each other in the human body. Various studies have established the epidemiologic synergy between STDs and HIV [1,2]. Presence of STIs increases the risk of either the acquisition or transmission of HIV by 3-5 times (especially in ulcerative diseases & diseases associated with discharges) [3].

STIs have become a major public health problem in India with the advent of HIV/AIDS epidemic. Kalichman *et al* have reported that the average STI prevalence among

HIV infected people is 14% [4]. With such a high prevalence of STIs among people living with HIV/AIDS the present study aims to observe the clinical profile of STIs in HIV positive patients. As the natural history, manifestations and treatment of STIs may be altered by concurrent HIV infection, the present study also tries to identify the atypical presentations of STIs in HIV infected individuals.

1.1 Aim and Objectives

- 1) To study the various STIs in people living with HIV/AIDS attending the outpatient Department of Dermatology, Venereology and Leprosy (DVL), Gandhi Hospital
- 2) To identify the atypical presentation (if any) of STIs in HIV infected persons.

2. Material and methods

This observational study comprised of 100 consecutive cases of HIV positive patients with sexually transmitted infections (STIs) attending the outpatient department of DVL, Gandhi Hospital, Secunderabad, from January 2015 to June 2016.

2.1 Inclusion criteria

- Patients having HIV/AIDS, both recently diagnosed and old cases aged >16 years, of both sexes.

2.2 Exclusion criteria

- HIV negative individuals with or without STIs.
- Patients who are not willing to participate in the study.

2.3 Method of evaluation

Patients diagnosed to have HIV infection, proven by ELISA for HIV 1 and 2 by two different kits, with symptoms suggestive of STI were first asked written consent to be a part of the study.

A questionnaire was used to record the patient's name, age, sex, marital status, educational status, occupation, sexual behaviour, monthly cycles / pregnancy status (in female patients), sexual orientation (homosexual, heterosexual or bisexual), number of sexual partners during the previous 6 months, frequency of condom use or failure during the previous 6 months. A thorough clinical history was elicited. Patients were also asked about their symptoms, duration of their symptoms and history relevant to appropriate genital symptoms. Patients were asked about the presence of joint pain, conjunctival irritation, fever and extra genital lesions. Details regarding the HIV status whether the patient was on antiretroviral therapy, treatment if any; taken so far for the current STI, history of systemic illness and STI were elicited. Clinical examination included general physical examination followed by a meticulous examination of the external genitalia and anal region. Various investigations were also carried out.

3. Observations and Results

In total, 100 patients positive for HIV who presented to DVL OPD with STI complaints were included in the study. Out of the 100 patients, 72% were males and 28% were females with male to female ratio of 2.57:1. The age group ranged from 17-76 years and mean age of all the patients was 35.27 years. Maximum patients were in the age group 27-36 years (43%) and minimum in the age group 67-76 years (2%).

In the study 21% of the patients were drivers followed by daily wage labourers (20%), business (14%), and homemakers (12%). Others were electricians (7%), security guards (6%), farmers (5%), students (4%), painters (3%), hotel workers (3%), house maids (3%) and teachers (2%). Majority of the patients (71%) belonged to low socio-economic status while only 28% belonged to moderate socio-economic status. Most of the patients (85%) were married.

In our study 27% of the patients gave the history of extramarital contact, 37% had premarital contact and 14% had history of both extramarital and premarital contact. 22% of the patients denied history of extramarital or premarital contact. According to the study 85% patients had heterosexual orientation, 10% were bisexuals and 5% were homosexuals (Men who have sex with Men [MSM]).

Nearly three-fourth (72%) of the patients had addictions, the common being alcoholism, smoking and both alcoholism and smoking. There were no intravenous drug users in the study. 28% of the patients had no addictions.

Majority of the patients (80%) had no history of STIs in the past. (Figure 1)

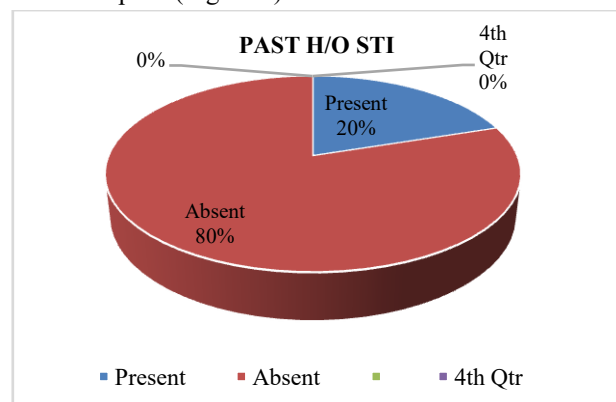


Figure 1: Pie diagram showing history of STI in the study population

3.1 Presenting complaints

In our study 27% of the patients presented with genital growths, 25% with genital ulcer, 18% with concurrent multiple STIs, 15% with skin rash, 14% with genital discharge and 1% with itching over the genitalia. (Figure 2)

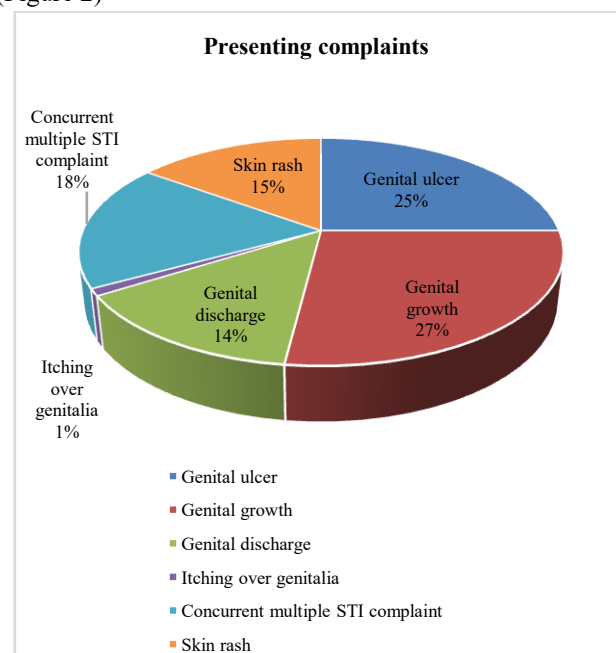


Figure 2: Pie diagram showing presenting complaints in the patients

3.2 Patterns of STIs in the study group

Genital herpes was the most common STI seen in 34% of the patients followed by genital warts (31%), syphilis (23%), genital candidiasis (22%), concurrent

multiple STIs (18%), *molluscum contagiosum* (4%), hepatitis-B (3%), gonorrhoea (2%) and scabies (1%). (Figure 3)

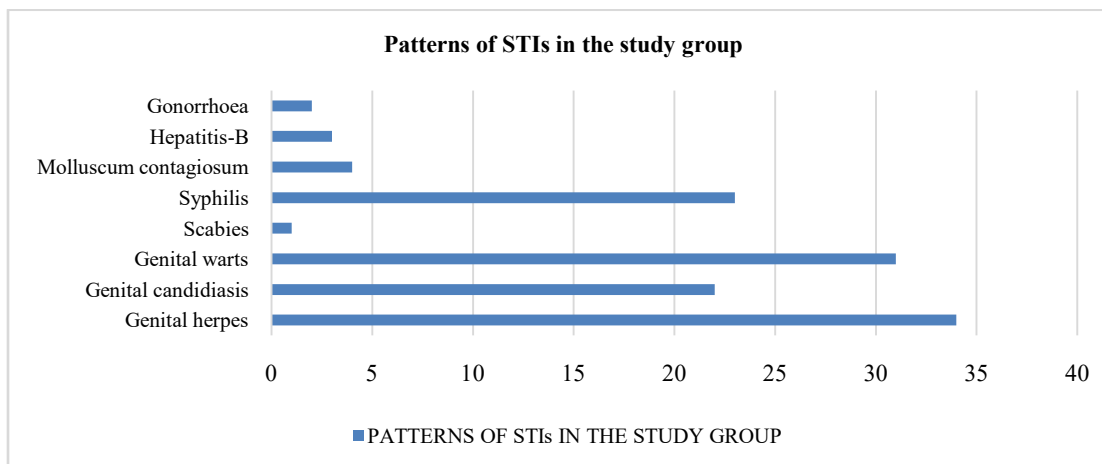


Figure 3: Bar diagram showing patterns of STIs in the study group

3.3 VDRL reactivity

VDRL was reactive in 21% of the cases and non-reactive in 79% of the cases (Table 1).

Table 1: VDRL reactivity

VDRL	Total number	Percentage (%)
Reactive	21	21%
Non-reactive	79	79%

3.4 VDRL titers

In our study the VDRL titers in the study group were 1:8 (1%), 1:16 (6%), 1:32 (9%) and 1:64 (5%).

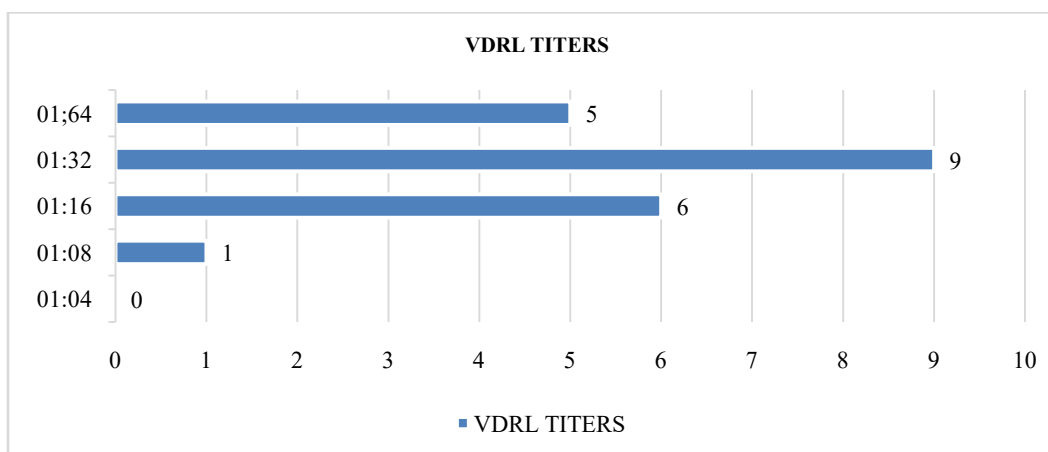


Figure 4: Bar diagram showing VDRL titers

3.5 Prevalence of HBsAg

In our study HBsAg was positive in 3% and negative in 97% of the patients.

Table 2: Prevalence of HBsAg

HBsAg	Total number	Percentage (%)
Positive	03	3%
Negative	97	97%

3.6 Concordant couples

In our study in 20% both partners were HIV positive but only one has concurrent STI. In 8% both partners had HIV and other STI simultaneously. 57% patients were married but only one partner HIV positive with STI. 15% were unmarried.

3.7 CD₄ counts

Most of the patients in our study had CD₄ counts >200 cells/cu.mm (70%). 30% of the patients' CD₄ counts were < or =200 cells/cu. mm.

3.8 STIs according to CD₄ counts

In patients with CD₄ counts < or =200/cu.mm, the percentage of patients with genital herpes is 6%, genital warts 10%, syphilis 5%, genital candidiasis 3% and multiple STIs in 6% of the cases. In patients with CD₄ counts >200/cu.mm, the percentage of patients with genital herpes is 17%, genital warts 16%, syphilis 11%, genital candidiasis 11%, multiple STIs 12%, *molluscum contagiosum* 1%, scabies 1% and gonorrhoea in 1% of the cases (Figure 5).

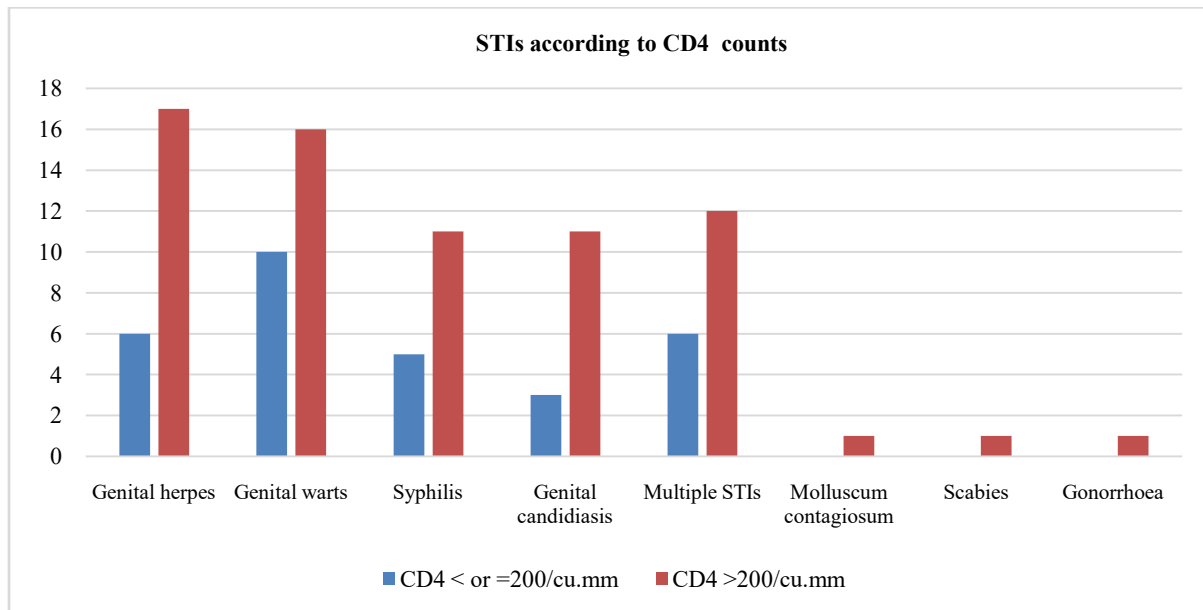


Figure 5: Bar diagram showing STIs according to CD4 counts

3.9 ART status

72% of the patients in our study were taking ART, whereas 28% were not on ART.

4. Discussion

In the present study, out of 100 cases included, majority of the patients were males. The smaller number of female patients could be because women have fewer sex partners than men and are less likely than men to indulge in risky behaviours. The commonest age group affected was 27-36 years followed by 37-46 years. This emphasizes the particular vulnerability of this age-group population to STDs. Most of the patients were drivers and migrant labourers. Studies suggest that migration is an important mechanism for the spread of HIV and other sexually transmitted infections (STIs)[5] because migrants potentially serve as a 'bridge population', spreading STIs across regions[6].

Majority of the patients in our study belonged to lower socioeconomic state (SES), and this could be the reason for unawareness of the mode of transmission and preventive measures for STIs. This is in contrast to a study done by Msisha *et al* which demonstrated that high socioeconomic status individuals had higher probability of having STIs and HIV, as compared with low socioeconomic status individuals [7].

The predominant sexual orientation observed in our study was heterosexual (85%) followed by bisexuality (10%) and 5% homosexuality (homosexual men). Krijnen *et al* [8] in their study had reported that 27% of the subjects described their sexual preference as bisexual or heterosexual. Wood *et al* [9] in their study concluded that men who identify themselves as bisexual pose the greatest risk to their female partners.

In our study, majority of the patients were found to be practicing alcoholism (41%) or smoking (9%) or both alcoholism and smoking (22%) which is almost equal when compared to other studies. None of the patients were intravenous drug abusers. 28% of the patients in our study had no addictions. In a study by Cook *et al* 42.9% had alcohol use disorder. Individuals with a substance use disorder were significantly more likely to have multiple sexual partners and are inconsistent condom users and more likely to have an STD [10].

In this study past history of STD was noticed in 20% of the patients. In a study done by Wand *et al* women who had recurrent STI diagnoses were 2.5 times more likely to be at increased risk of HIV infection [11]. Women

who were diagnosed at least once were more likely to seroconvert compared to those who had no STI diagnosis [hazard ratio (HR): 1.63, 95% confidence interval (CI): 1.04, 2.57] [11].

Most common complaints with which patients presented were genital growths, genital ulcers and genital discharge. In the present study genital herpes was the most common STD followed by genital warts. This is in accordance with study by Devi *et al*[12] where herpes genitalis (32.8%) was the most common STI in HIV co-infected patients followed by genital warts (17.1%). Atypical form of the disease in the form of extensive, non-healing anogenital ulcers, with secondary infection was found in one patient in our study. HIV-induced immune impairment results in severe, persistent and recurrent genital herpes. Atypical presentation of genital herpes in the form of chronic, extensive genital ulceration was reported by Rigopoulos *et al*[13] and Simonsen [14]. Recurrent genital herpes was seen in 10% of the cases in our study. In HIV infected individuals there is twice the frequency of recurrent ulcers due to HSV-2.

Among bacterial STDs in our study syphilis was seen in 23% of the patients and was the third most common STI.

Genital candidiasis was the commonest fungal infection which was seen in 22% of the patients in our study. Bacterial vaginosis and trichomoniasis were not observed in the HIV infected female patients in our study. This could be because of the less number of female patients in our study group.

Molluscum contagiosum (MC) in our study was seen in 4% of cases. This is in line with study by Kore *et al* [15] and Shobhana *et al* [16] where *molluscum contagiosum* was seen in 4% of the patients. Chawhan *et al* [17] reported 13.6% prevalence of *molluscum contagiosum* infection in their study. 2% of the male patients and 2% of the female patients in our study presented with molluscum contagiosum. Atypical multiple, confluent, giant nodular lesions were not seen in our study.

In our study Hepatitis-B co-infection was seen in 3% of the study population. This was relatively less when compared to a study by Tremeau-Bravard *et al*[18] in which 7.9% of the patients had HIV and hepatitis-B co-infection. HIV/HBV co-infection was seen in 9.2% in a study by Lesi *et al*[19] and 8.9% in a study by Adesina *et al*[20]. 2% of the male patients and 1% of the female patients in our study had hepatitis-B and HIV co-infection. All the patients attending STD clinic should be screened routinely for HBsAg.

Hepatitis C co-infection was not seen in our study group. The classical STDs like lymphogranuloma venereum (LGV), chancroid and granuloma inguinale were not observed in our study. Ireneus Keet *et al*[21] have reported LGV in their study where it ranged from 0.1% to 0.6%.

Granuloma inguinale was reported in 1.8% of cases in a study by Krishnamurthy *et al*[22]. In their study chancroid was seen in 22.5% of the patients. This is in contrast with our study where no cases of chancroid were reported. It is observed in our study that, among the HIV positive patients viral STDs [genital herpes (34%), genital warts (31%), *molluscum contagiosum* (4%), hepatitis B (3%)] were found to be more common than bacterial STDs. Genital warts is the newly emerging viral STD in recent times after genital herpes. Most of the STDs did not show much variation either in presentation, course of the disease and therapeutic response to the conventional treatment

Among viral STI cases occurring in HIV seropositives, CD₄ T cell count was below 200/cu.mm in 32% cases and above 200/cu.mm in 68% cases. This correlates with study by Banerjee *et al* [23] where 33.1% of viral STIs occurred in patients with CD₄ less than 200 cells/cu mm and 66.9% occurred in patients with CD₄ more than 200 cells/cu.mm. It was observed in our study that bacterial STIs (70.5%), fungal STIs (78.5%) and concurrent multiple STIs (66.6%) were more common in patients with CD₄ more than 200 cells/cu.mm.

It was observed in a study by Bhattar *et al*[24] that there is no significant difference in the prevalence of STIs in females by CD₄ count. In a study conducted by Goel *et al.*, found no correlation between bacterial vaginosis or vaginal candidiasis and CD4 cell count[25]. Micheletti *et al* also found no association of candidiasis, trichomoniasis and bacterial vaginosis[26]. While on the other hand studies by Rhoads *et al*[27] and Spinillo [28] have reported that candidiasis is correlated with the immunological status of the host. Routine screening for STIs of all the HIV infected patients should be done irrespective of CD₄ cell counts.

The strengths of our study include the bulk of poor patients suffering with HIV coming for screening as well as for treatment is more in a government institute where the services are available free of cost compared to a private institute and Availability of the specialists in the field of dermatology and venereology in our institute which is more helpful. Adequate screening facilities are available and HAART is readily available at ART centre.

Our study has some limitations. As more number of female subjects would have yielded more reliable results. Nonetheless, our results are consistent with other studies, and are relevant for improving the care of HIV/AIDS patients.

Despite certain limitations, our study emphasizes the need to screen for HIV in patients presenting with STI complaints and to look for other STIs in HIV positive individuals. Contact tracing by the counsellors need to be increased. MSM groups need to be contacted through a counsellor.

5. Conclusion

- STI co-infections are common in HIV infected individuals.
- Viral STIs are commoner with HIV. There is a changing pattern of STIs from bacterial to viral infections in HIV positive patients.
- These patients sometimes present with atypical presentations.
- The present study highlights the importance of routine screening for STIs in all the HIV infected individuals.
- Identification and treatment of other STIs can be effective in reducing risk of HIV acquisition and transmission.
- A great effort is required in educating the public about safe sex and condom usage.
- An accurate evaluation of the prevalence and spectrum of STIs helps to plan good management strategies in preventing STIs in HIV patients.

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