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Original Research Article

Study of prevalence of human immunodeficiency virus in various sexually transmitted diseases patients at tertiary care center

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ABSTRACT

Background: The presentation and course of sexually transmitted diseases (STD) may be altered by presence of coexisting HIV (human immunodeficiency virus) status. The purpose of the study was to study the prevalence of HIV in 278 cases of STDs.
Methods: From September 2018 to December 2021, all STDs presented in dermatology outpatient department of a tertiary care center, were assessed to determine the prevalence of HIV. A thorough history was taken along with proper general and cutaneous examination as per predesigned case record proforma.
Results: Prevalence of HIV was observed in 29 (10.43%) out of 278 STD patients, out of which 18 were males and 11 were females with the male:female ratio of 1.63:1. Maximum patients belonged to the age group of 31-40 years (44.72%). Herpes genitalis was the most common STD associated in HIV seropositivity (9.56%).
Conclusions: HIV prevalence in STDs has been showing decreasing trends in our study. In view of this, prevention and control of STDs play an important role in efforts to control HIV infection in India. Hence Focusing on this STD and HIV relationship is of vital importance.

Keywords: Prevalence, STDs, HIV seropositivity, Herpes genitalis

INTRODUCTION

STDs have an increased susceptibility to HIV infection. So the control of STDs to prevent the transmission of HIV infection is now considered a public health priority.[1] STDs increases the risk of HIV transmission by 3-5 times, especially ulcerative STDs. The commonly occurring non-ulcerative STDs also have a potential to increase transmission of HIV due to presence of mucosal inflammation, micro abrasions and white blood cell invasion.[2]

India has the third largest HIV epidemic in the world. In 2019, HIV prevalence among adults (aged 15-49) was an estimated 0.22%.[3] Overall India's HIV epidemic is slowing down. Between 2010 to 2017 new infections declined by 17% and AIDS related death more than halved, falling by 56%.[4,5]

The present study was undertaken to know the prevalence of HIV in STDs.

This study was aimed to identify prevalence of HIV in various STDs, to know the current trends of STDs in population and its association with HIV.

METHODS

This study was conducted in dermatology department OPD of a tertiary care center between September 2018 to December 2021. This study was cross sectional descriptive study.

Inclusion criteria

All newly diagnosed, untreated cases of STDs attending dermatology OPD were included in the study.

Exclusion criteria

Patients not willing to give consent for the study were excluded.

Data analysis

Datas were tabulated and analysed using Microsoft excel 2013.

Informed consent was taken from the patients before including into the study. Detailed history was taken. Complete general, systemic, cutaneous examinations and relevant investigations were done. The collected data was tabulated and analyzed.

RESULTS

We had included 278 STD patients in this study.

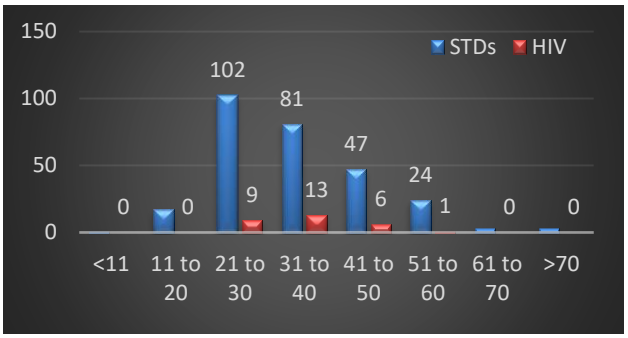

Figure 1: Age distribution of the STD patients along with their HIV prevalence.

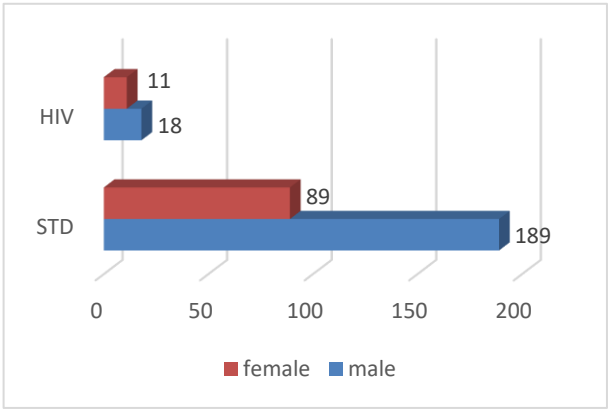

Figure 2: Gender-wise distribution in present study.

The most common age group affected was 21-30 years (36.69%) followed by 31-40 years (29.13%), 41-50 years (16.90%) and 11-20 years (6.11%) in STD patients. In HIV seropositive patients, most common age group affected was 31-40 years (44.82%) (Figure 1).

Table 1: Marital status of the patients and HIV serology status.

Marital status	No. of patients in the present study (n=278)	HIV patients (n=29)
	N (%)	N (%)
Married	201 (72.30)	17 (8.46)
Unmarried	51 (18.34)	6 (11.76)
Widow/alone	15 (5.39)	2 (13.33)
Divorced	7 (2.51)	2 (28.57)
Remarried	1 (0.35)	0
Staying away/separated	3 (1.07)	2 (66.66)

Table 2: Occupational exposure in various STDs.

Occupations	No. of male patients (n=189)	No. of female patients (n=89)	Total No. of patients (n=278) (%)	HIV-seropositive patients		HIV patients (%)
			N (%)	No. of male patients (n=18)	No. of female patients (n=11)	N (%)
Labourer	53	21	74 (26.61)	3	5	8 (10.81)
Skilled workers	41	0	41 (14.74)	2	0	2 (4.87)
Driver	53	0	53 (19.06)	11	0	11 (20.75)
Students	25	4	29 (10.43)	1	0	1 (3.44)
Unemployed	14	0	14 (5.03)	1	0	1 (7.14)
Service class	2	1	3 (1.07)	0	0	0
Farmer	1	0	1 (0.35)	0	0	0
Housewife	0	62	62 (22.30)	0	6	6 (9.67)
Commercial sex worker	0	1	1 (035)	0	0	0

Table 3: HIV seropositivity among the patients.

Parameters	Seropositive	Seronegative
No. of patients in the present study (2020) (n=278)	29 (male-18; female-11)	249 (male-171; female-78)
Present study (2020) (n=278) (%)	10.43	89.57

Table 4: HIV positivity in various STDs.

Type of STD	Total patients	HIV positive
	N (%)	N (%)
Herpes genitalis	115 (41.36)	11 (9.56)
Genital warts	60 (21.58)	4 (6.66)
Genital molluscum contagiosum	32 (11.51)	2 (6.25)
Secondary syphilis	25 (8.99)	4 (16)
Balanoposthitis	15 (5.39)	3 (20)
Primary syphilis	13 (4.67)	4 (30.7)
Mixed veneral disease	10 (3.59)	0 (0)
Gonorrhea	5 (1.79)	0 (0)
Chancroid	2 (0.71)	0 (0)
Reiter's disease	1 (0.35)	1 (100)

Males (67.98%) were predominantly affected than females (32.01%) with M:F ratio of 2.12:1 in STD patients. Among HIV seropositive patients also males (62.06%) were predominantly affected than females (37.93%) with M:F ratio 1.63:1 (Figure 2).

Married patients (72.30%) were more commonly affected than unmarried patients (18.34%), widow/alone (5.39%), remarried (0.5%), divorced (2.51%), staying away (0.5%) in STD patients (Table 1).

HIV seropositivity was predominantly seen in married patients in 8.46%.

Among HIV seropositive male patients, drivers (20.75%) were most commonly affected. HIV seropositivity was maximally seen in house-wives (9.67%), in female patients (Table 2).

Among the 278 patients, 29 patients (10.43%) showed seropositivty for HIV (Table 3).

HIV seropositivity was most commonly associated with herpes genitalis in 11 (9.56%) out of total 115 patients of same (Table 4).

DISCUSSION

The relation between STDs and risk of HIV infection had been a subject of increasing interest. There were very few number of studies available on this entity. Hence, the present study was designed to estimate the prevalence of HIV seropositivity in STDs.

Among HIV reactive patients, most commonly affected age group was 31-40 years comprising 44.82%, followed by 21-30 years 31.03%. It was mainly due to the high sexual activity, higher rate of promiscuity and more awareness for attending STD clinic in this age group.

In present study, out of 278 STD patients 18 (62.06%) males and 11 (37.93%) females were HIV positive with male:female ratio 1.63:1 which was comparable to Thappa et al in which male:female ratio was 3.63:1.[6] The attendance of the female patients was less, which might be due to social and cultural restrictions, the asymptomatic nature of the disease in females and the fact that female patients preferred to attend the gynecology department for the treatment of such problems.

Among HIV seropositive patients, married patients (8.46%) were more commonly affected. STD and HIV being higher in married individuals, which might be due to higher frequency of unprotected sex. It further signified the importance of contact tracing, counseling and prompt management of the partners.

Poor educational background had been often reported to be linked to higher risk of STD and HIV acquisition. Higher educational levels offered some protection against STDs.

Drivers were most commonly affected among the males in the current study, (11/29, 37.93%) with HIV seropositivity and among the females, house-wives were predominantly affected (6/29, 20.69%) which was similar to Kumar et al study also in which drivers (15/40, 37.5%) were most commonly affected.[7] Drivers and labourers stayed away from their families for long period and got involved in promiscuous behaviour. This implied that the drivers were working as a link population and spreading the disease in general population.

Inconsistent and improper use of the barrier contraception may lead to acquisition of HIV in STD patients which can be prevented by proper and regular use.

In the present study, HIV seropositivity was seen in 10.43% of patients as compared to a study done by Chopra et al and Thappa et al where 16.75% and 15.14% patients showed HIV seropositivity respectively, which suggested decreasing trend of HIV prevalence.[6,8]

The possible mechanisms of cofactor effect of ulcerative and non-ulcerative STD on HIV transmission by augmenting HIV infectiousness and HIV susceptibility were easy viral exit and entry because of lack of mechanical skin/mucous membrane/endocervical epithelium barrier due to ulceration or micro ulceration, chances of getting HIV infection increased by ulcer

formation in genital tract, HIV infectiousness potentially increased during sexual intercourse due to bleeding from genital ulcers.

In the present study, HIV seropositivity was most commonly associated with herpes genitalis (9.56%), which was comparable to Kumar et al study where maximum HIV seropositivity was associated with herpes genitalis (10%).[7]

In herpes genitalis patients, seropositivity was most commonly seen due to synergistic relationship between HSV and HIV leading to enhance replication of viruses and potentiation of HIV transmission.

With the prompt diagnosis of HIV seropositivity status in patients attending STD clinic, we could give early ART treatment and prevent comorbidities related to HIV. After diagnosing HIV seropositivity, we referred the patients to ART center for proper counselling and treatment.

CONCLUSION

HIV prevalence in STDs has been showing decreasing trends in our study. In view of this, prevention and control of STDs play an important role in efforts to control HIV infection in India. Hence focusing on this STD and HIV relationship is of vital importance.

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