Original Research Article

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Prevalence of sexually transmitted infections in a tertiary care centre of **North India**

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ABSTRACT

Background: Sexually transmitted infections (STI's) are most common notifiable infectious diseases in the world. Knowledge of prevalence of STI's is important to implement appropriate control strategies. This study is undertaken to see any changing trends in prevalence of STI's by comparing with previous studies.

Methods: All the patients who attended STI clinic from July 2019 to June 2020 were included in the study. Diagnosis was made on basis of history, clinical examination and laboratory investigations.

Results: The 2188 patients were seen from July 2019 to June 2020 in STI clinic. Mean age group of patients is 25-44 years. Scabies (31.6%) was the commonest STI seen in outpatient department followed by balanoposthitis (16.4), vaginal discharge (12.5%), human immunodeficiency virus (HIV) (11.4%), herpetic genital ulcer disease (7.9%), genital warts (5.8%), molluscum contagiosum (2.4%), syphilis (2.4%), urethral discharge (1.7%), non-herpetic genital ulcer disease (0.4%), non-gonococcal urethritis (0.4%).

Conclusions: Scabies was the most common STI reported in our study followed by balanoposthitis and vaginal/cervical discharge. Among the viral STI's, HIV is showing alarmingly rising trends and is most common viral STI seen in the study followed by herpes simplex virus (HSV). May be there is less reporting of genital herpes simplex infection due to its self-resolution. As compared to previous studies, rising trends of fungal infections are seen which can be due to syndromic management of bacterial STI's, rising incidence of diabetes mellitus as well as illicit use of over-the-counter broad-spectrum antibiotics given by the local practitioners.

Keywords: STI's, India, HIV, Genital ulcer, Vaginal discharge

INTRODUCTION

Sexually transmitted infections (STI's) are most common notifiable infectious diseases in the world. Sexual intercourse with an infected partner is by far the most important risk factor for STI's. STI's are a major global health concern and are associated with serious comorbidity and mortality.

Between years 2016-2017, national aids control society reported nearly 3.993 cases of STI's.²

Sexually transmitted diseases (STD) includes infections resulting in clinical diseases that may symptomatic with clinical signs and involve genitalia and other parts of the body participating in sexual intercourse e.g., syphilis, gonorrhoea, chancroid, donovanosis, non-gonococcal urethritis, genital warts, herpes genitalis etc. whereas STI's include STD's and infections that may not cause clinical disease of genitals, but are transmitted by sexual interaction e.g., hepatitis B, HIV, HTLV-1 etc.

Adolescents are a high-risk group for acquiring STI's. About 50% of STI's in United States are seen in 15 to 24 years old.³

Other identifiable risk factors are younger age at first inter course, multiple sex partners, illicit drug abuse, intravenous drug abuse, alcoholism, smoking, marital status. In the data derived from third release of the US national longitudinal mortality study, it was shown that divorced/separated people are more at risk of acquiring HIV than married people.⁴

Knowledge of prevalence of STI's is important to implement appropriate control strategies.

Objective of the study

This study is undertaken to see any changing trends in prevalence of STI's by comparing with previous studies.

METHODS

All the patients who attended STI clinic of Guru Gobind Singh medical college and hospital, Faridkot from July 2019 to June 2020 were included in study. Retrospective chart analysis was done. Diagnosis was made on basis of clinical examination and laboratory investigations. The data recorded was age, sex, marital status, history of extramarital sexual contact, history of contact with commercial sexual workers. Patients were sent to STI counsellor for counselling. HIV testing and venereal disease research laboratory (VDRL) testing was done in all patients. Gram staining, wet mount and KOH were done when applicable. Various STI's included were herpetic genital ulcer disease, non-herpetic genital ulcer disease, vaginal/ cervical discharge, balanoposthitis, syphilis, scabies, molluscum contagiosum, genital warts. Non-infectious cases of genital ulcerations or discharge were excluded from the study. Counselling regarding risks associated in unprotected sexual contact, risk of procurement of HIV infection in presence of other STIs, partner notification and treatment, condom promotion by STI counsellor was done.

RESULTS

A retrospective data analysis was done to study pattern of STI's in males in a tertiary care centre in north India. 2188 patients were seen from July 2019 to May 2020 in STI clinic. Out of these, 8.2% of patients were referred from ICTC centre and 6% from gynaecology department. Males comprised 66.7% of total patients and females constituted the rest 33.3%. The 75.3% of patients were married and 24.7% of, patients were unmarried (Figure 1). We tried our best to get the information, 55% of married men gave history of extramarital contact, out of these. 38 % of men had history of contact with commercial sex workers (CSWs). Mean age group of patients is 25-44 years (Table 1). Scabies (31.6%) was the commonest STI seen in outpatient department followed by balanoposthitis (16.4), vaginal discharge (12.5%), HIV (11.4%), herpetic genital ulcer disease (7.9%), genital warts (5.8%), molluscum contagiosum (2.4%), syphilis (2.4%), non-herpetic genital ulcer disease (0.4%), nongonococcal urethritis (0.4%). The 4.2% of asymptomatic high-risk people were referred from ICTC centre for VDRL/RPR testing and 3.1% of asymptomatic high-risk people were tested for HIV, HBsAg, HCV and VDRL from OPD (Table 2).

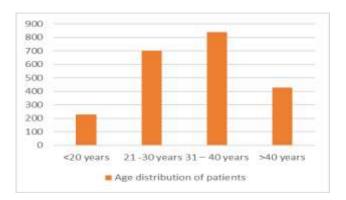


Figure 1: Age distribution of patients.

Table 1: Demographic distribution of patients.

Variables	N (%)
Gender	
Males	1468 (66.7)
Females	732 (33.3)
M:F	2:1
Marital status	
Married	1656 (75.3)
Unmarried	544 (24.7)

Table 2: Profile of STD patients.

STI's	Males,	Females,	Total,
511.8	(n=1435)	(n=765)	(n=2200)
	(%)	(%)	(%)
Scabies	368 (16.7)	328	696
Scaples	308 (10.7)	(14.9)	(31.6)
Balanoposthitis	360 (16.4)	0	360
Daianoposunus	300 (10.4)	U	(16.4)
Vaginal/cervical		275 (12.5)	275
discharge		275 (12.5)	(12.5)
TTTX7	240 (10.0)	11 (0.5)	251
HIV positive	240 (10.9)	11 (0.5)	(11.4)
Herpetic genital	141 (6.4)	34 (1.5)	175 (7.9)
ulcer disease	141 (0.4)	34 (1.3)	173 (7.9)
Genital warts	80 (3.6)	47 (2.1)	127 (5.8)
High risk	90 (4.1)	2 (0.09)	92 (4.2)
Asymptomatic	54 (2.4)	14 (0.6)	68 (3.1)
Syphilis	35 (1.6)	19 (0.9)	54 (2.4)
Molluscum	32 (1.4)	22 (1)	54 (2.4)
contagiosum	32 (1.1)	22 (1)	31 (2.1)
Urethral	17 (0.9)	13 (0.6)	30 (1.7)
discharge	17 (0.8)	13 (0.0)	30 (1.7)
Non herpetic			
genital ulcer	9 (0.4)	0	9 (0.4)
disease			
Non gonococcal	9 (0.4)	0	9 (0.4)
urethritis	9 (0.4)	U	9 (0.4)

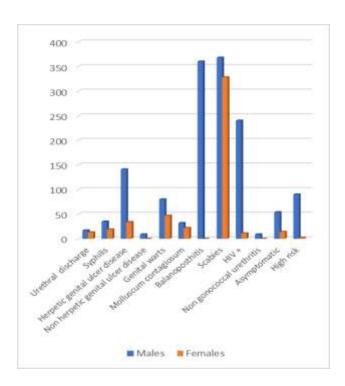


Figure 2: Distribution of STI's in males and females.

DISCUSSION

STI's are an important public health problem worldwide affecting quality of life. Individuals with STI's also have significantly higher chances of acquiring HIV infection causing serious morbidity and mortality. The 2002 ICMR multi centre community prevalence showed that 5% to 6% of sexually active adult population suffers from STI/RTI. According to WHO, more than 1 million STIs are procured every day among which chlamydia, gonorrhoea, syphilis, and trichomoniasis are major STIs.⁵ The epidemiology varies from region to region and country due to differences country to sociodemographic, economic and environmental and behavioural factors.⁶ This retrospective study is carried out to know the prevalence of STI's in a North India so that proper planning and implementation of control strategies can be done.

Males in our study comprises 66.7% of patients with male to female ratio being 2:1. In study done by Meetesh et al 76% were males and 20% were females. Aggarwal et al also showed similar findings-72% males and 27.9% females. Study done in Puducherry also reported male: female to be 2:1.7.8 It is contrary to studies done by Sharma et al where they reported female preponderance with male to female ratio being 1:7. A study done in North India in 2004 also reported higher female prevalence.9

Majority of patients in our study were in age group 31-40. A retrospective data analysis carried out to find pattern of STI's from June 2004 to June 2006 at Puducherry showed maximum prevalence of STI's in the age group 21-30.¹⁰

Also, a study done in Himachal Pradesh on pattern of STI's in a district hospital reported 25-44 to be the most common age group. ¹¹ This indicates that STI's are higher in sexually active age group and thus their education can lead to tremendous decrease in incidence as well as prevalence of STI's.

Most common STI reported in our study was scabies (31.6%) of cases. Scabies is included in sexually transmitted diseases treatment guidelines. 12

Incidence in males and females was nearly equal. It was reported in 16.7% of males and 14.9% of females. Findings are consistent with a study done in Aligarh where they reported Scabies was the most common STI reported.¹³

Although prevalence reported in other studies is lower. In a study done in South India, it is reported in only 3.4% of STI patients. 14

In a study done in Himachal Pradesh, genital scabies is reported only on 4.2% of patients. 11

The second most common STI in our study was candidal balanoposthitis (16.4%) in males followed by candidal vaginal discharge (12.5%) in females. It is similar to study done by Goel et al. ¹⁵ It shows increasing trends of fungal infections.

Increasing trends can be due to high prevalence of diabetes, intake of oral contraceptive pills, poor hygiene, higher intake of over-the-counter antibiotics for other infections by local practitioners.

HIV is the most common viral STI in our study which is similar to study done by Devi et al. 10

Prevalence of HIV is alarmingly rising which is becoming major clinical and public health problem in the years to come. A rising trend of HIV infection from 0.6% to 8.8% has been shown by a retrospective study done from 1990 to 2004 in Vardhman Mahavir medical college and Safdarjang hospital, New Delhi. 16

In our study most common genital ulcerative disease is herpes genitalis (7.9%) higher prevalence is shown by studies done by Devi et al (32%), Thappa et al (20.5%) and Aggarwal et al (64%). \$\frac{8,10,14}{4}\$ Herpes genitals (7.9%) has been the most common ulcerative STI reported through all these years. There has been ample of data to support that HSV may be a cofactor for HIV transmission and expression. Herpetic lesions cause an influx of activated CD4 T cells which result in increased expression of HIV on mucosal surfaces. \$\frac{17}{4}\$ The epidemiology of HSV-2 has been shown to differ between men and women with a greater probability of transmission from male-to-female, than female-to-male. Men with genital HSV-2 have been shown to have more recurrences than women, which may explain the higher

rates of male-to-female transmission. Syphilis was second most common ulcerative STI seen with most latent syphilis (2%) being the most common presentation. It is similar to other studies (10). Also, in a study done in transgender's showed higher incidence of syphilis followed by HIV. 19

Genital warts are highly prevalent as seen in studies done by Devi et al (17.1%) and Choudhary et al (17%). 10,20 In our study prevalence of genital warts is nearly 5.8%. Prevalence of molluscum contagiosum has shown rising trends (2.4%) as shown in other studies done in India done by Sarkar et al (4.7%). Chugh et al showed Genital herpes (48.15%) to be the most common STI followed by genital molluscum (37%) and viral warts (29.63%). 21

Viral infections are showing an upswing. This can be attributed to syndromic management of bacterial STI's, indiscriminate use of broad-spectrum antibiotics, higher self-reporting or upgradation of health services. Proper understanding of prevalence and geographical patterns of viral STI's is necessary for proper implementation of control strategies.

Limitations

Active search for the patients was not done. Only patients who visited STI clinic were included in the study.

CONCLUSION

Males in the reproductive age group were maximally affected with STI's. Scabies was the most common STI reported in our study followed by balanoposthitis and vaginal/cervical discharge. Among the viral STI's, HIV is showing alarmingly rising trends and is most common viral STI seen in the study followed by HSV. May be there is less reporting of genital herpes simplex infection due to its self-resolution.

As compared to previous studies, rising trends of fungal infections are seen which can be due to syndromic management of bacterial STI's as well as illicit use of broad-spectrum antibiotics given by the local practitioners.

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Institutional Ethics Committee

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