

Original Research Article

Patterns of sexually transmitted infections: a hospital based cross sectional study

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ABSTRACT

Background: Sexually transmitted infections (STIs) pose a significant public health problem in developing countries like India, which ultimately increases the risk of developing HIV. Understanding the current patterns of STIs in our region of Chhattishgarh state is crucial for implementing strategies to control the spread of infection. The aim of this study was to investigate the patterns of STIs and the associated predisposing factors over the past three years.

Methods: A cross-sectional study was conducted from January 2021 to December 2023. A detailed history, clinical examinations, and investigations were performed at CIMS Bilaspur. Diagnoses were made using the syndromic approach, and the data was analyzed for the study.

Results: Of the 3495 cases, 2122 (60.71%) were females, and 1373 (39.29%) were males. Vaginal discharge syndrome was the most common STI. There were 48 (1.37%) newly diagnosed HIV cases.

Conclusions: The incidence of STIs is higher among the study population, which will increase the risk of HIV transmission henceforth it is important to investigate and manage the sexually transmitted infections.

Keywords: Cervicovaginal discharge, HIV, Sexually transmitted infections

INTRODUCTION

Sexually transmitted infections (STIs) are major health problems worldwide and also in developing countries like India.¹ STIs are a heterogeneous group of infections that are often sexually transmitted.² Various risk factors predispose to STI, such as unprotected sexual contact with an infected partner or commercial sex workers (CSWs), multiple sexual partners, homosexuality, and anal intercourse. Intravenous drug abuse, chem sex, and online dating apps are all contributory.³ Over the past few years, several advanced techniques for diagnosing STIs have been introduced. Still, due to the unavailability of uniform resources in the majority of healthcare centers throughout the country and the delay in results, the diagnosis and treatment of patients are dependent on syndromic approach guidelines devised by National AIDS Control Organisation (NACO).^{4,5} The primary aim was to study the pattern of STIs, analyze the prevalence

of HIV, and identify demographic patterns among the patients attending the STI clinic at our hospital. We also aimed to examine the proportion of STIs, the prevalence of HIV, and demographic patterns among the patients attending the STI clinic. In this study, we utilized a survey to assess the risk factors associated with the development of STIs, enabling us to plan and monitor targeted interventions for prevention and treatment.

METHODS

This cross-sectional study was done from January 2021 to December 2023 at our hospital's STI clinic. A total of 3495 STI cases were included in our study. Patients underwent a detailed history, including demographic details and clinical symptoms; they were examined for signs of STDs. They were also interrogated about their sexual practices and contraceptive methods. A thorough clinical examination of the genital, anal, and oral mucosa

of the patients was conducted by healthcare professionals, and other associated sites were also examined.

Blood investigations, including the venereal disease research laboratory (VDRL) test, rapid plasma regain (RPR) titer for syphilis, and antibody for HIV (ELISA), were performed after pre-test counseling. Patients were categorized according to syndromic approach for STIs according to NACO guidelines. Data was statistically analyzed. The patients found positive for HIV were offered post-test counseling by an STI counselor and referred to the anti-retroviral therapy (ART) center of the hospital. Partner notification, examination, and counseling were also done. Health education regarding safe sexual practices, use of contraceptive methods, and partner notification were done.

RESULTS

A total of 3495 cases attended our STI clinic during three years, from January 2021 to December 2023. Out of these cases, 2122 (60.71%) were females, and 1373 (39.29%) were males, resulting in a female-to-male ratio of 1.54:1. The majority of the patients were in the reproductive age group of 19 to 32 years. The mean age of presentation was 26.8 years. The detailed distribution was tabulated in Table 1. 2725 (77.96%) of the cases were married, and the majority of them (80.94%) were heterosexual. The distribution of STIs was as follows: cervicovaginal discharge (CVD) accounted for 1523 cases (43.57%), followed by genital ulcerative disease-herpetic (GUD-H) with 869 cases (24.86%), and molluscum contagiosum with 7.15% of the cases, genital warts (GW) were 5%, genital ulcerative disease-non herpetic (GUD-NH) was 3.03%, and urethral discharge (UD) 1.77% shown in Figure 1.

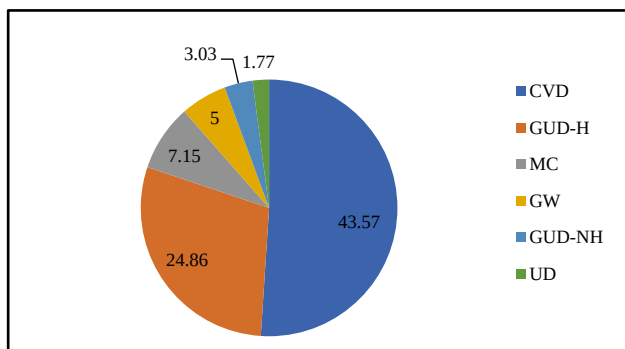


Figure 1: Distribution of sexually transmitted infections (STIs).

Most of the study population was married (77.96%) and predominantly engaged in unprotected intercourse. Out of the total patients, 93 (2.66%) had a history of sexual contact with more than one partner. 29 (0.82%) had a history of sex with commercial sex workers (CSWs). 469 (13.41%) individuals identified as homosexual and engaged in both oral and anal sexual activities. 102 (2.91%) cases showed VDRL reactivity, indicating a

potential syphilis infection. Newly diagnosed HIV cases were 48 (1.37%).

Table 1: Distribution of study population.

Characteristics	Numbers (%)
Total number of patients	3495
Males	1373 (39.29)
Females	2122 (60.71)
Average age (years)	26.8
Males (years)	29.3
Females (years)	25.4
Marital status	
Married	2725 (77.96)
Unmarried	711 (20.34)
Divorced	59 (1.68)
Sexual habitat	
Heterosexual	2829 (80.94)
Homosexual	469 (13.41)
Bisexual	197 (5.63)

DISCUSSION

Sexually transmitted infections (STIs) are a significant public health concern worldwide, including in developing countries like India, which increases the risk factor for developing HIV. Every year, more than 30 million episodes of sexually transmitted infections occur in our country, as per the NACO annual report.⁶ The data shown may be underreported because of inadequate healthcare facilities in the remote and rural parts of the country. This emphasizes the need for constant surveillance regarding the prevalence and patterns of STIs in all parts of the country. In our study, the number of female patients seen is higher than that of male patients, similar to the survey by Nyati et al.⁷ This is in contrast to previous studies where males outnumbered females. This is because we included the STI cases seen in the STI clinic of our hospital, where the cases were referred to the gynecology department for specialized care. A majority of patients were in the age group of 19-32 years. This is in concordance with other studies, as this is the most sexually active and productive age group.^{8,9}

Research indicates that 13.41% of cases involving homosexuality are associated with a higher susceptibility to acquiring STIs. A significant portion of the participants engaged in unprotected intercourse, which further increased their risk of STIs. The most common STI was cervicovaginal discharge (CVD) in our study, as the female cases were more in contrast to other studies where balanoposthitis was a common STI¹⁰, followed by genital ulcerative disease-herpetic (GUD-H), molluscum contagiosum (MC), genital warts (GW), and genital ulcerative disease-nonherpetic (GUD-NH). In our study, the HIV prevalence was 1.37%, which is lower than the 4.2% reported in the study by Vora et al indicating variations in HIV prevalence across different studies.¹¹

The analysed data compared with other studies in different regions of the country are shown in Table 2.

Table 2: Comparison of data with other studies in different parts of the country.

Study	Present study	Rathi et al ¹⁰	Sharma et al ⁹	Nyati et al ⁷	Sarkar et al ⁸	Devi et al ¹²	Amin et al ¹³
Place and year of study	Bilaspur (2021-23)	Nagpur (2013-19)	Jaipur (2012-14)	Kota (2012-16)	Kolkata (2011)	Puduchery (2004-06)	Aligarh (2008-13)
Age (range in years)	19-32	21-30	25-44	21-35	24-44	21-30	16-25
Sex predominant	Females (60.71%)	Males (62.8%)	Males (78%)	Females (62%)	Males (75.4%)	Males (66.7%)	Males (79.6%)
Most common STI (%)	Cervicovaginal discharge (43.75%)	Balanoposthitis (37.8%)	Balanoposthitis (39.6%)	Cervicovaginal discharge (38%)	GUD-H (38.2%)	GUD-H (32.8%)	Genital Scabies (53%)
VDRL positive	2.91%	2.8%	2.9%	0.6%	1.07%	11.6%	--
HIV prevalence	1.37%	3.9%	2.5%	3.9%	4.2%	34.5%	1.3%

Effective control of sexually transmitted infections includes the primary prevention which invariably involving literacy, introducing sex education in curriculum and mass education regarding safe sex practices including the usage of barrier contraceptives. The prevalence of unprotected intercourse in our study population underscores the critical need for comprehensive sexual health education to combat the rising rates of STIs. In addition to promoting sexual health awareness, secondary prevention and effective management of STIs are crucial components in reducing the burden of these infections. Therefore, implementing targeted interventions such as comprehensive sex education programs and accessible healthcare services is imperative to mitigate the prevalence of STIs and minimize the risk of HIV transmission.

The limitations of our study include the diagnosis of cases on the basis of syndromic approach and clinical examination. And furthermore, it was not confirmed by additional confirmatory tests such as culture and microscopy.

CONCLUSION

The increasing prevalence of STIs significantly amplifies the risk of HIV transmission. Therefore, it is crucial to investigate the patterns of STIs, their diagnosis, and appropriate management to effectively mitigate the risk of HIV transmission.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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