

A retrospective study of the pattern of sexually transmitted infections from a tertiary care hospital of Rajasthan

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Abstract

Background: Knowledge about the current patterns of sexually transmitted infections (STIs) is essential as they pose a major health problem worldwide and even more so in the developing countries like ours. Owing to the lack of advanced laboratory facilities at most of the centers, the cases are evaluated and managed as per the syndromic approach proposed by the National AIDS Control Organization. **Aims:** We aim to study the patterns of STIs seen over the past 4 years based on the syndromic approach. **Materials and Methods:** A retrospective analysis of the data of STI clinic over 4 years (April 2012–March 2016) was carried out. Showing all cases attending STI clinic are subjected to clinical examinations and investigated. Tests for HIV and venereal disease research laboratory were performed in all patients. STIs were categorized as per the syndromic approach. The proportions were calculated and data collected were analyzed. **Results:** A total of 4847 cases (1845 males and 3002 females) were studied. The most common STI overall was cervicovaginal discharge followed by genital herpes, warts, molluscum contagiosum, genital ulcerative disease-nonherpetic, lower abdominal pain, and urethral discharge in decreasing order of frequency. Genital herpes was the most common STI in males. Collectively, the proportion of viral STI was more as compared to nonviral STI. The number of newly diagnosed HIV cases was 19 (0.4%). **Conclusion:** The contemporary trend of STIs is relative rise in the proportion of viral STIs including genital herpes, warts, and molluscum contagiosum. Since STIs and HIV perpetuate each other, prompt diagnosis and adequate treatment of all cases of STIs is necessary to prevent HIV transmission.

Key words: HIV, sexually transmitted infections, syndromic approach, viral

INTRODUCTION

Sexually transmitted infections (STIs) are a loosely defined constellation of infections and syndromes that are epidemiologically heterogeneous, but all of which are almost always or at least often transmitted sexually.^[1] Various risk factors predispose to STI including HIV. Although unprotected sexual contact with the infected partner is considered to be the most important factor,^[2,3] others such as

homosexuality, intravenous (IV) drug abuse, alcohol addiction, and anal penetration are on the rise in today's era.^[4] STIs pose a major health problem worldwide and even more so in the developing countries like ours. In order to plan and implement strategies to combat this problem, it is essential to know the current patterns of STIs in the various parts of the country. Although a number of advanced

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diagnostic techniques have been introduced so as to improve the diagnostic yield of various STIs, the assessment and management of patients is still largely based on syndromic approach given by the National AIDS Control Organization (NACO) owing to lack of resources in majority of the health-care centers. We aim to study the patterns of STIs seen over the past 4 years based on the syndromic approach.

MATERIALS AND METHODS

This is a retrospective study of data of STI clinic from April 2012 to March 2016. The sample population includes all the attendees of STI clinic and the STI cases referred by the gynecology outpatient department. A total of 4847 STI cases were seen during the study period. Cases were subjected to detailed history taking including age, gender, residence, occupation, onset, duration, and progression of symptoms, educational status, marital status, sexual orientation, number of partners, use of barrier contraceptive, blood transfusion, alcohol addiction, IV drug abuse, and similar complaints in partner. A thorough clinical examination was performed.

Patients were categorized as per the NACO guidelines^[5] into genital ulcerative disease-herpetic (GUD-H), GUD-nonherpetic (GUD-NH), cervicovaginal discharge, lower abdominal pain, and urethral discharge. In addition, other STIs that do not come under the umbrella of syndromic management such as genital warts and genital molluscum contagiosum were included in the study. Diagnosis was made on the basis of history taking, examination, and relevant investigations. Gram-stain, KOH preparation, and wet mount were prepared wherever required. Investigations including hemogram, liver and kidney function tests, venereal disease research laboratory (VDRL) for syphilis, hepatitis B virus surface antigen, and antibody for HIV were performed as an opt-out testing after pretest counseling. The diagnosis of HIV was made on rapid test and ELISA. Those found positive were offered posttest counseling by an STI counselor and referred to ART center of our hospital. Partner notification and condom promotion were done.

RESULTS

Out of a total of 4847 cases, 1845 (38%) were males and 3002 (62%) were females, making male-to-female ratio as 1:1.6. Majority of the patients were in the age group of 21–35 years with an average age of 27.8 years. The detailed sociodemographic profile of

the study population is summarized in Table 1. The majority of the patients were married (70.3%) and heterosexual (97.3%). A total of 129 (2.7%) patients had homosexual/bisexual orientation. A history of multiple sexual partners (present or past) was obtained from 1692 (35%) cases. Out of these, 712 (42%) had contact with more than one partner in the past 6 months. Furthermore, only 469 (27.7%) attendees regularly used barrier contraceptive. The rest 1223 (72.3%) had unprotected intercourse. A total of 433 (23.4%) males confessed contact with female sex worker (FSW). Around 90% of the patients were literate. Most, that is, 2081 (43%) had attended school up to class 6 and 1494 (30.8%) up to class 12. Two-thirds of the population was residing in the urban area (3091, 63.8%). The number of FSWs seen during the study period was 22.

Table 1: Sociodemographic profile of study population

Characteristics	Number n (%)
Total number of cases	4847
Males	1845 (38)
Females	3002 (62)
Average age (years)	27.8
Males (years)	28.1
Females (years)	27.6
Marital status	
Married	3411 (70.3)
Unmarried	1373 (28.3)
Divorced/widower	63 (1.3)
Sexual orientation	
Heterosexual	4718 (97.3)
Homosexual	76 (1.6)
Bisexual	53 (1.09)
Nature of sexual contact	
Single partner	3155 (65)
More than one partner	1692 (35)
Males with a history of contact with FSW	433 (23.5 of males)
More than one partner in the past 6 months	712 (14.7)
Regular use of condom	1223 (25.2)
Educational status	
Illiterate	534 (11)
Up to Class 6	2081 (43)
Up to Class 12	1494 (30.8)
Higher	738 (15.2)
Residence	
Rural	1756 (36.2)
Urban	3091 (63.8)
Other risk factors for STI	
History of blood transfusion	126 (2.6)
Alcohol addiction	273 (5.6)
IV drug abuse	31 (0.6)
FSW	22 (0.5)

FSW=Female sex worker; STI=Sexually transmitted infection; IV=Intravenous

The overall distribution of STI cases is depicted in Figure 1. The most common STI observed is cervicovaginal discharge (1842, 38%), followed by GUD-H (1467, 30.2%). The proportion of rest of the STIs in decreasing order of proportion is genital warts (817, 16.8%), molluscum contagiosum (419, 8.6%), GUD-NH (176, 3.6%), lower abdominal pain (114, 2.3%), and urethral discharge (94, 1.9%). The STIs were further categorized as viral and nonviral. The proportion of viral STI (55.6%; GUD-H, genital warts, and molluscum contagiosum) was more as compared to nonviral STI (45.8%; GUD-NH, cervicovaginal discharge, lower abdominal pain, and urethral discharge). Eighty-two patients had more than one STI.

Among females, cervicovaginal discharge (1842, 61.3%) constituted the maximum proportion of cases [Figure 1]. The distribution of other STIs was as follows: herpes (511, 17%), warts (334, 11.1%), molluscum contagiosum (200, 6.6%), lower abdominal pain (114, 3.8%), and GUD-NH (50, 1.7%) [Figure 2].

GUD-H (956, 51.8%) was the most common STI in males [Figure 3]. This was followed by warts (483, 26.1%), molluscum contagiosum (219, 11.9%), GUD-NH (126, 6.8%), and urethral discharge (94, 5%).

The number of new diagnosed HIV cases was 19 (0.4%), out of which 12 (63.1%) were males and 7 (36.8%) were females. The number of people living with HIV (PLH) presenting with STI was 168 (104 males and 64 females). Out of the total number of GUD-NH cases, 31 (17.6%) showed RPR positivity (22 males and 9 females) [Figure 4].

DISCUSSION

STI and HIV pose a major burden on our health system. As per the NACO annual report, an estimated 3 crore episodes of STI/reproductive tract infections occur every year in the country.^[6] Considering the nonavailability of health-care facilities in the remote parts of the country, the data shown in the surveys may actually be underreported. This emphasizes on the need of constant surveillance regarding the prevalence and patterns of STI from all parts of the country.

In our study, the number of female patients seen is more than that of the males. This is in contrast to previous studies where males outnumbered females.^[7-9] This is because we included the STI cases seen in the gynecology outpatient department

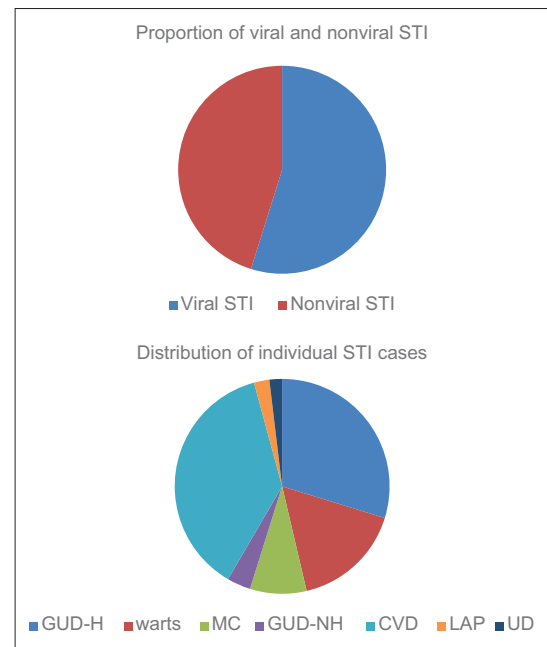


Figure 1: Overall distribution of sexually transmitted infection cases

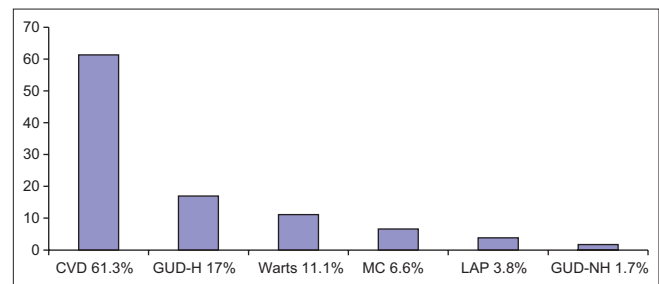


Figure 2: Distribution of sexually transmitted infection in females

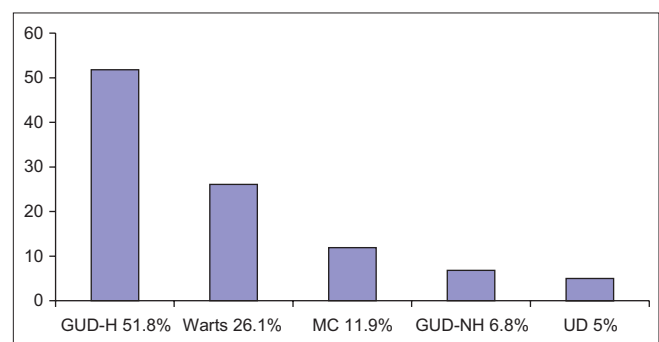


Figure 3: Distribution of sexually transmitted infection in males

as female patients tend to visit the gynecology department rather than STI clinic for genitalia-related complaints. The majority of patients were in the age group of 21–30 years. This is in concordance with other studies^[9] as this is the most sexually active and productive age group. Homosexuality/bisexuality seen in 2.7% predisposes to higher risk of acquiring/transmitting STI. Among those with more than one sexual partner, the majority indulged in unprotected intercourse. This again is an added

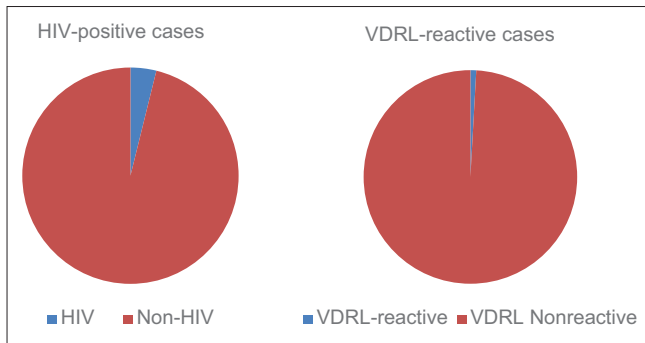


Figure 4: HIV and venereal disease research laboratory-reactive cases in the study population

risk factor. Moreover, around one-fourth of the male patients (23.5%) presenting with STI gave a history of contact with FSW. Other studies reported this figure to be 69.7%^[10] and 6.2%.^[11]

In males, genital herpes was the most common STI. In females, however, cervicovaginal discharge ranked the highest, followed by herpes and warts. Collectively, the viral STI predominated over the nonviral STI. There are many recent reports showing an emerging trend of viral STIs. In a study of the profile of STIs and HIV seropositivity in STI clinic attendees over a 15-year period at a regional sexually transmitted disease center in New Delhi, the viral STIs such as GUD-H, condyloma acuminata, and molluscum contagiosum were much more prominent than the bacterial STIs such as urethral or cervical discharge, syphilis, and GUD-NH.^[12] Similar results were found in studies conducted by Vora *et al.*,^[13] Devi *et al.*,^[10] Jain *et al.*,^[14] Chandragupta *et al.*,^[15] and Choudhry *et al.*^[16] A marked decline in bacterial STIs, resulting in an apparent increase in the viral STIs, has been reported from various other Indian studies.^[17,18] This can be partly attributed to the widespread use of broad-spectrum antibiotics for other diseases. This may result in partial or complete treatment of bacterial STI or may alter the course of the disease, resulting in overall decreased proportion of bacterial STI.

The prevalence of HIV including the PLH presenting with STI and the new seropositive cases detected was 3.6% in our study. This is slightly higher when compared to the statistics released by the NACO in 2011–2012 according to which the HIV prevalence rate in the general population in our country is 0.31% (2009) and STI clinic HIV prevalence is 2.46%.^[6] A hospital-based study conducted by Vora *et al.*^[13] showed even higher HIV prevalence (4.2%). The local factors including educational status, number of sexual partners, sexual orientation, knowledge of STI, and their prevention may play a role in this geographical variation of HIV prevalence.

As STI and HIV are cofactors in transmission of each other, it is essential to study their relation and plan the future strategies.

VDRL reactivity was seen in 0.9% of the total cases. Previous studies observed higher rates of VDRL reactivity; 9.95% by Vora *et al.*^[13] and 1.07% by Sarkar *et al.*^[7] Out of the total cases of GUD-NH, 17.6% showed VDRL reactivity. This is considerably lower as compared to the study conducted by Sharma *et al.*^[9] who reported 62.6% cases of GUD-NH to be RPR reactive. This further strengthens the declining trend of bacterial infections as mentioned earlier.

The key to effective control of STIs lies in prevention. Primary prevention can be achieved by higher literacy rates, introducing formal sex education in the school curriculum, and mass education about safe sex practices including avoidance of promiscuity and regular use of barrier contraceptive. A sizeable proportion of cases in our study had unprotected intercourse with more than one sexual partner. This highlights the dire need of sexual health awareness programs, especially targeted at the vulnerable population. Furthermore, secondary prevention, that is, rapid diagnosis and management of STIs, is definitely a feasible and effective way to reduce the overall burden of STI as well as to prevent HIV transmission.

CONCLUSION

The contemporary trend of STIs is relative rise in the proportion of viral STIs including genital herpes, warts, and molluscum contagiosum. Since STIs and HIV perpetuate each other, prompt diagnosis and adequate treatment of all cases of STIs is necessary to prevent HIV transmission.

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Conflicts of interest

There are no conflicts of interest.

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