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A clinico-demographic profile and sexual behaviour pattern in attendees of designated STI/RTI clinic having sexually transmitted infections with special reference to HIV seropositivity

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Abstract

Introduction: The dynamics of sexually transmitted infections (STIs) are influenced by sexual behaviour (age of first sexual exposure, number of sexual partner/s, sexual orientation, mode of intercourse, addiction, occupation, correct and consistent use of condom). The presence of the human immunodeficiency virus (HIV) influences the clinical pattern of STIs and the course of disease too. **Objective:** Our study was conducted to find the prevalence of STIs among attendees of a designated STI/RTI clinic (DSRC) with the description of clinico-demographic profile and sexual behaviour and association of HIV seropositivity with STIs. **Methods:** Ours was an institution-based cross-sectional study conducted at DSRC after obtaining ethics committee approval and consent from patients. Clinical diagnosis, demographic profile and sexual history were obtained after maintaining audio-visual privacy. **Statistical Analysis**: Medcalc, version 10.2 was used. **Results**: Among 167 patients attending DSRC during the study period, 76 having sexual dysfunctions were excluded. The major STIs diagnosed were primary syphilis (6.59%), secondary syphilis (2.2%), herpes genitalis (42.86%), condyloma acuminata (26.37%), molluscum contagiosum (5.49%), genital candidiasis (7.69%), bowenoid papulosis (3.3%), genital scabies (4.4%) and chancroid (1.1%). Sexual orientations were heterosexual (64.83%), lesbian (1.1%), gay (12.1%), bisexual (17.58%) and with an animal partner (4.4%). Among the total study population, 8.8% was rapid plasma reagin (RPR) reactive and 12.1% was Integrated Counselling and Testing Centre (ICTC) reactive. Among the total patients who used condoms (n = 49), only 15 (16.4% of total participants) used condoms correctly and consistently. Peno-vaginal mode of intercourse (n = 78) was found to be most common followed by oro-insertive (n = 42), oro-receptive (n = 34), ano-insertive (n = 24), ano-receptive (n = 17) and digital insertion (n = 20). **Conclusion:** Sexual behaviour influences the disease outcome in patients with reproductive tract infection (RTI)/STI.

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Full Text

Introduction

All sexually transmitted infections (STIs) are highly contagious and may remain asymptomatic as a potential source of infection. So, understanding the clinico-demographic profile of these diseases and the sexual behaviour pattern of affected individuals is necessary to understand the present trend as well as planning the disease control strategies.[1]

The rising or declining trend of STI is likely to be attributed to social norms, cultural beliefs and sexual practices which can vary from place to place and also with time frame.[2] The spread of human immunodeficiency virus (HIV) infection and subsequent behavioural change since the 90s have resulted in a significant alteration in the epidemiological pattern of STIs. As the mode of acquisition of STI and HIV are almost the same, the presence of HIV may influence the clinical pattern and course of STI/reproductive tract infections (RTIs). On the other hand, the presence of STIs modifies the rate of transmission of HIV.[3]

Despite the nature of the problem, there is a dearth of studies in India exploring the sexual behaviour pattern and treatment-seeking behaviour in STI/RTI patients.

To make more effective community-based strategies and maximize the effectiveness of health education programmes, we have conducted a study to assess how the sexual behaviour of attendees of urban designated STI/RTI clinics (DSRC) affects the clinical course of STI/RTIs. We also determined their prevalence, clinico-demographic profile and evaluated the association of STI/RTIs with HIV seropositivity.

Materials and Methods

The study was an institution-based cross-sectional study conducted in DSRC attached to dermatology outpatient department (OPD) of a rural-based tertiary care hospital over a period of 18 months (from April 2019 to September 2020) after obtaining due permission from the Institutional Ethics Committee.

Patients who gave consent and clinically had STI/RTIs were included and attendees having sexual disorders, e.g., venereophobia, erectile dysfunction, premature ejaculation, Dhat syndrome, loss of libido were excluded. Most of the female patients with STI/RTIs attended gynaecology OPD first and most of the male patients having STI/RTIs attended general surgery/medicine OPD first. Patients who were referred from other departments to DSRC were partially or completely treated and were counselled which influenced their sexual behaviour and clinical course. Most of the HIV seropositive patients got anti-retroviral therapy (ART) for several years and thus were excluded.[4] After the initial screening, a thorough clinical evaluation was done and routine tests like HIV test, rapid plasma reagin (RPR) test and hepatitis B surface antigen (HBsAg) test were done. The diagnosis was made based on a correlation of clinical findings and microbiological tests (viz. Gram staining, KOH mount of urethral discharge/cervico-vaginal discharge, wet mount of vaginal discharge, pH test of vaginal discharge). After confirmation of diagnosis, all cases were enlisted. Sexual behaviour pattern was recorded by interviewing the patients after ensuring audio-visual privacy. Clinico-demographic data and sexual behaviour patterns were recorded in the pre-designed, pre-tested case record form.

The sexual history was recorded to explore the age of first intercourse, time since last intercourse, sexual orientation, number of partners in a lifetime and last 3 months, correct and consistent use of condoms, sex under influence of alcohol or illicit drugs.

Sample size

The targeted sample size was 91 patients, based on the prevalence (p) of herpes genitalis to be 38% [5] with 10% allowable error (l) and 95% confidence limit (z value = 1.96) using Raosoft® software.

z2 p (1-p)/l2.

Analysis of data

The parametric data were analysed by using an unpaired t-test or analysis of variance (ANOVA) test and categorical data were analysed by using the Chi-square test or Fischer's test as applicable. Medcalc, version 10.2 was used for categorical statistical analysis and the P value ≤ 0.05 was considered statistically significant. Microsoft Excel was used for drawing the graph.

Results

During the study duration, all the walk-in (self-referral patients) clients of the STI/RTI clinic (n = 167) were screened till the required sample size was obtained [Figure 1].{Figure 1}

The participants of our study suffered from vaginal discharge (n = 3,3.3%), genital ulcer disease - non-herpetic (GUD-NH) (n = 9,9.9%), genital ulcer disease - herpetic (GUD-H) (n = 39,42.86%). Condyloma acuminata, genital molluscum contagiosum, bowenoid papulosis, genital scabies and candidal balano-posthitis were grouped under 'other syndromes' (n = 40,43.96%).

In our study population (n = 91), following diseases were found - primary syphilis (n = 6), herpes genitalis (n = 39), condyloma acuminata (n = 24), molluscum contagiosum (n = 5), genital candidiasis (n = 7), bowenoid papulosis (n = 3), condyloma lata (n = 2), genital scabies (n = 4) and chancroid (n = 1).

Clinico-demographic profiles of STI/RTI syndromes and diseases are shown in [Table 1] and [Table 2]. Among the participants, a total of 58 (63.70%) were male, a total of 32 (35.20%) were female and the male: female ratio was 1.75: 1. We found one (1.10%) transgender (male to female). The patients were mostly addicted to smoking (n = 24), alcohol (n = 24) and even injectable drugs (n = 3).{Table 1}{Table 2}

Occupation of the participants was classified into three groups-high risk (commercial sex workers, CSWs) (n = 4), bridge population (migrant workers, staying away from home, truck drivers) (n = 34) and low risk (n = 53). Primary syphilis, condyloma lata, condyloma acuminata, molluscum contagiosum, genital candidiasis and chancroid were more prevalent among bridge and high-risk populations [Table 2].

Patients with all syndromes and diseases were analysed regarding their sexual orientation [Table 3] and [Table 4].{Table 3}{Table 4}

Age of first sexual exposure was maximum for chancroid followed by bowenoid papulosis and was minimum for condyloma lata. Duration from last sexual exposure to the presentation of disease was minimum for genital molluscum contagiosum (5.2 ± 2.96) and maximum for primary syphilis (31.66 ± 8.57).

Considering individual diseases, the heterosexual route was (n = 59) preferred by most individuals. Herpes genitalis acquired by heterosexual route was most prevalent (49.15%), followed by condyloma acuminata (28.82%). One lesbian patient had herpes genitalis [Table 4]. In our study population, 11 (12.1%) were male having sex with male (MSM) patients and among them, molluscum contagiosum (27.27%) was found to be most common. Among the 15 (16.5%) bisexual patients, condyloma acuminata (33.33%) was more prevalent. Total of four patients (4.4%) had an animal partner and two (50%) of them had condyloma acuminata, one (25%) had molluscum contagiosum and the rest one (25%) had bowenoid papulosis.

In our study, most of the patients (n = 41) (45.1%) with STI/RTI syndromes had more than two partners in their lifetime. Vaginal discharge and GUD (both herpetic and non-herpetic) were more common in patients who had more than one sexual partner in their lifetime.

The number of partners in the last 3 months of most patients varied from that in a lifetime. Vaginal discharge patients had one partner in the last 3 months. A total four of GUD-NH syndrome patients had one partner, four had two partners and one had three partners in the last 3 months. Most of the GUD-H and others had one partner in the last 3 months.

Significant number of patients (42, 46.2%) did not use condom correctly and consistently ($P < 0.05$). Most of the patients with vaginal discharge (66.67%), GUD-NH (77.78%) and others (52.5%) have not used a barrier method of contraceptive (male/female condom). Mode of sexual intercourse for STI/RTI syndrome and diseases is shown in [Figure 2]a and [Figure 2]b.{Figure 2}

Discussion

From the available data, it is clear that day-to-day viral STIs are significantly increasing in number and bacterial diseases are declining [Table 5]. Though, a resurgence of syphilis is observed in recent years in comparison to the figures from the late 70s from both national and global perspectives.{Table 5}

In our study, the most prevalent disease was herpes genitalis (42.86%, n = 39) followed by condyloma acuminata (26.37%, n = 24) consistent with other studies by Devi et al.[15] and Subbarao and Akhilesh.[16] Though the prevalence of bacterial STIs/RTIs was less (chancroid-1.1%), there was evidence of a resurgence of syphilis (8.8%).

A high incidence of HIV seropositivity (12.1%) indicates a close association of STIs with HIV as observed in other studies.[17]

Regarding the clinico-demographic profile, the maximum number of patients were adults (mean age = 33.95 ± 10.16) in both males and females. Most of the attendees had a history of sexual debut at an early age (mean = 20.35 ± 2.71). The age of first exposure for condyloma lata (mean = 16 ± 0.71) and primary syphilis (mean = 18 ± 2.33) was before 18 years of age which is consistent with the Kolkata-based study by Taraphdar et al.[18] and behavioural surveillance survey NACO 2006.[19]

Regarding the number of sexual partners, GUD-H may not reveal the number of partners in the last 3 months, because it is the only disease that is related to the number of partners in a lifetime. There was one transgender (male to female) patient who was Integrated Counselling and Testing Centre (ICTC) positive, suffering from primary syphilis and had multiple sexual partners, similarly found by others.[20]

Considering occupation of patient, primary syphilis, molluscum contagiosum, candidiasis and chancroid were more common in bridge populations which include migrant labourers or migrant students, who stayed prolonged time away from family in an unfamiliar environment, indulged themselves in various addictions as well as in high-risk sexual behaviour with multiple partners and did not use condom similar to found by Mhalu et al.[21]

Addiction was found in a large number (58.26%) of patients in our study. Besides smoking, alcohol, tobacco chewing and injectable drug abuse (IDU) were prevalent among ICTC reactive patients. Sex under the influence of alcohol or illicit drugs is a well-established risk factor for STI.[22]

We found a total of eight patients (8.8%) reactive in the RPR test, among them six had primary syphilis and two had condyloma lata. Many of them had RPR reactive in low dilution like 1:32 titre and were ICTC reactive. Most of them had high-risk sexual behaviour like MSM and did not use a condom correctly and consistently supported by previous studies.[20]

Though a majority of our study population (53.8%) used barrier contraceptives but most of them had no knowledge regarding the correct and consistent use of condoms. In most of them, it got torn or slipped or rolled back during its use. In spite of using a condom correctly and consistently, nine patients had herpes genitalis and three patients had condyloma acuminata. This reveals condom is not the only way to protect from STIs.

Most of the patients (63.8%) preferred to be heterosexual as was found in studies by Devi et al.,[15] but the percentage of homosexuals (13.2%) was not very less. Most of the homosexuals preferred the ano-receptive or oro-receptive route. Prevalence of HIV and other STIs like syphilis, condyloma lata was higher in homosexuals than in heterosexuals, similarly found in other studies.[23] In our study, bestiality was found in 4.4% of patients, which was not only by their preference but also patients indulged themselves in this risky behaviour due to religious or cultural beliefs of the community they reside.

An increase in the number of sexual partners was significantly associated with risk factors including condomless anal intercourse and HIV consistent with the study conducted by Armstrong et al.[24] in Canada. But vaginal discharge syndrome was independent of the number of partners as it is mostly found in RTIs than in STIs.

Higher STI prevalence was found in people with a history of contact with high-risk individuals (CSW) compared to others similarly found by Thomas et al.[25]

A previous history of RTI/STI puts an individual at a higher risk of acquiring STI in the future consistent with the findings by Rodrigues et al., who reported that people with a past history of a genital ulcer ($P < 0.001$), genital discharge ($P < 0.006$) were at significantly higher risk of developing an STI in future.[25] We found people who did not use barrier contraceptives correctly and consistently, had a higher prevalence of STI and HIV (37.4%) compared to others (16.5%).

Limitations

The role of other factors like the presence of other non-STI diseases or conditions that may influence the sexual behaviour or clinical course of STIs was not evaluated in our studies. The data presented is from the walk-in (self-referral patients) to DSRC situated in the Dermatology department; and referred patients from the other departments (e.g. gynaecology OPD, surgery OPD, ICTC) are not presented in the study.

Conclusions

Our study revealed that the syndromes grouped under 'others' should have a better position in syndromic classification. Though the syndromic approach has been a major step in the management of STIs, but it needs to be periodically reviewed and adapted to the epidemiological patterns of STIs in a given setting. The present study revealed that periodic screening of attendees with venereophobia is necessary for the assessment of sexual behaviour along with focussed counselling sessions.

HIV and STIs are perfect examples of epidemiologic synergy as they are core transmitters of each other. Our study highlights oral and anal intercourse exposes more surface area of mucosa to HIV and STIs. More frequent screening may be appropriate depending on individual risk behaviours and local epidemiology of STIs.

An increase in awareness regarding the correct and consistent use of condoms should be made to prevent the transmission of HIV and other STIs.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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