

# Pattern of Sexually Transmitted Infections: A Profile from a Sexually Transmitted Infections Clinic of a Tertiary Care Hospital of Eastern India

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## Abstract

**Background:** Sexually transmitted infections (STIs) are public health problems, which significantly increase the risk of HIV transmission. A proper understanding of the pattern of STIs in different geographical regions is important for proper planning of STI control. **Aims:** To determine the pattern of sexually transmitted diseases in a tertiary care hospital in Eastern India. **Subjects and Methods:** This is a hospital-based, cross-sectional study done in a tertiary care hospital of Eastern India. All the consecutive patients attending the STI clinic of a tertiary care hospital from January 2011 to December 2011 were included in the study, irrespective of age and sex. Thorough history was taken; proper clinical examination and relevant laboratory investigations were done. STIs were categorized in different syndromes as depicted by National AIDS Control Organization (NACO) in the syndromic management of STIs. The STIs, which were not included in the syndromic management, were also identified by clinical features and investigations. Partner notification and condom promotion was done. The statistical analysis used was Chi-square test using Medcalc<sup>®</sup> statistical software Version 9.3 (Belgium). **Results:** The commonest STI was genital herpes. Viral STIs like genital herpes, condyloma acuminata, *molluscum contagiosum* were more prevalent than the non-viral ones like genital ulcer disease non-herpetic, syphilis. STIs which were not included in the syndromic management like *molluscum contagiosum*, condyloma acuminata, genital scabies were common. HIV seropositivity in the study population (4.2%) was more than the NACO estimate. Condom promotion, partner notification, and partner management was not adequate. Occurrence of venereophobia was found to be significantly higher in male than in female attendees of STI clinic. **Conclusions:** The trend for viral STIs is increasing while that for bacterial STIs is decreasing. Proper training of the health care providers regarding minor STIs, condom promotion, partner notification and partner management, counseling regarding venereophobia should be undertaken to make STI control programs successful.

**Keywords:** Asia, Condyloma acuminata, Herpes genitalis, Human immunodeficiency virus, Sexually transmitted disease, Venereophobia

## 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.<sup>[1]</sup>

Unprotected sex with an infected partner is by far the most important risk factor for STI/HIV infection.<sup>[2,3]</sup> The introduction of new diagnostic technologies has increased recognition of viral STI, improved sensitivity in identification of bacterial STI, and expanded the repertoire of usable specimens. The use of urine and vaginal swabs has greatly expanded coverage of screening services and has led to the availability of true population-based estimates of the prevalence of STIs.<sup>[4]</sup> STIs constitute a major public health problem for both developing and developed countries. STIs increases the risk of transmission of HIV infection causing immense need to understand the patterns of STIs prevailing in the regions of a country for proper planning and implementation of STI control strategies.

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The present study aims to understand the pattern of STIs and the services provided by STI clinic among patients in tertiary care hospital in Eastern part of India over a period of 1 year.

## Subjects and Methods

All the consecutive patients attending the STI clinic of a tertiary care hospital from January 2011 to December 2011 were included in the study, irrespective of age and sex. Informed written consent was taken from all the patients or from parents (in case of minor).

Thorough history was taken, and proper clinical examination was done. The patients were sent to STI counselor for counseling. Serological tests including HIV antibody testing by enzyme-linked immunosorbent assay (ELISA) and rapid plasma reagin test (RPR) were done in all patients. Gram stain and KOH preparation for fungal element was done in those cases where it was applicable. Due to lack of logistic support, hepatitis B surface antigen testing was not done. STIs were categorized in different syndromes as depicted by National AIDS Control Organization (NACO) in the syndromic management of STIs.<sup>[5]</sup> The syndromes depicted by NACO were urethral discharge, vaginal discharge, genital ulcer disease herpetic and non-herpetic, inguinal bubo, lower abdominal pain, scrotal swelling etc.

The STIs which were not included in the syndromic management were also identified by clinical features and relevant laboratory investigations. Partner notification and condom promotion was done. The data were collected in a pre-designed case data sheet and were analyzed accordingly with Medcalc<sup>R</sup> statistical software Version 9.3 (Belgium). Chi-square test was done as a test of significance.

## Results

Four-hundred and ninety seven patients attending the STI clinic were included in this study, which accounts for 1.1% of total out-patient department attendance of our institute.

In the study population, 75.4% (375/497) were males, 24.3% (121/497) were females, and 0.2% (1/497) was transgender (TG), with female to male ratio 1:3.90. Majority of patients attending STI clinic belonged to the age group 24-44 years 66.4% (330/497), followed by the >44 years age group 18.7% (93/497), 20-24 years age group 13.3% (66/497), and <20 years age group 1.6% (8/497).

Among the male patients attending the STI clinic, the proportion of patients having STI was 61.6% (231/375), while in female, the proportion was 88.4% (107/497). Genital ulcer disease herpetic 51.9% (120/231) was the most common STI among the male patients having STI, followed by urethral discharge 13.8% (32/231), and condyloma acuminata 12.9% (30/231) [vide Table 1].

In the females, the most common STI was combination of cervical and vaginal discharge 29.9% (32/107), followed by vaginal discharge 23.3% (25/107), cervical discharge 18.6% (20/107), genital ulcer disease herpetic 8.4% (9/107), and condyloma acuminata 5.6% (6/107) [vide Table 1]

Occurrence of genital herpes in males was statistically significantly higher compared to females ( $P < 0.01$ ), while the occurrence of *molluscum contagiosum* ( $P = 0.76$ ), condyloma acuminata ( $P = 0.06$ ) was statistically similar in male and female patients.

Venereophobia, i.e., morbid fear of venereal disease, was more common among the males (17.33%) than the females (4.13%) attending the STI clinic, and the difference was significant ( $P < 0.01$ ).

RPR test was conducted in 56.1% (279/497) patients, out of which three 1.07% (3/279) were found reactive. Among the study population, 4.2% (21/497) were found to be HIV-positive, in which 85.7% (18/21) were males and 14.9% (3/21) were females.

The overall commonest STI was genital herpes. Viral STIs like genital herpes, condyloma acuminata, *molluscum contagiosum* were more prevalent than the non-viral ones like genital ulcer disease non-herpetic, syphilis. STIs, which were not included in the syndromic management like *molluscum contagiosum*, condyloma acuminata, genital scabies were not uncommon.”) [vide Table 2]

Counseling regarding risk involved in unprotected sexual contact, vulnerability to acquire HIV infection in presence of other STIs, need for partner treatment, use of condom etc., by STI counselor was advised in all the patients, but few of them

**Table 1: Patterns of STIs in present study among male and female attending STI clinic**

| STIs                               | Male<br>(n=231) (%) | Female<br>(n=107) (%) |
|------------------------------------|---------------------|-----------------------|
| Urethral discharge                 | 32 (13.8)           | 0                     |
| Cervical discharge                 | 0                   | 20 (18.6)             |
| Vaginal discharge                  | 0                   | 25 (23.3)             |
| Cervical and vaginal discharge     | 0                   | 32 (29.9)             |
| Syphilis                           | 3 (1.2)             | 0                     |
| Genital ulcer disease non-herpetic | 10 (4.3)            | 2 (1.8)               |
| Genital ulcer disease herpetic     | 120 (51.9)          | 9 (8.4)               |
| Inguinal bubo                      | 2 (0.8)             | 0                     |
| Lower abdominal pain syndrome      | 0                   | 6 (5.6)               |
| Molluscum contagiosum              | 12 (5.1)            | 4 (3.7)               |
| Condyloma acuminata                | 30 (12.9)           | 6 (5.6)               |
| Genital scabies                    | 12 (5.1)            | 2 (1.8)               |
| Phithirus pubis                    | 2 (0.8)             | 1 (0.9)               |
| Balanoposthitis                    | 10 (4.3)            | 0                     |

STIs: Sexually transmitted infections

**Table 2: Common viral and other STIs (total STI cases=338, M=231, F=107)**

|                                    |                 |
|------------------------------------|-----------------|
| Common viral STIs                  |                 |
| Genital ulcer disease-herpetic     | 38.1% (129/338) |
| Condyloma acuminata                | 10.6% (36/338)  |
| Molluscum contagiosum              | 4.7% (16/338)   |
| Common non-viral STIs              |                 |
| Urethral discharge                 | 13.8% (32/231)  |
| Cervical discharge                 | 18.6% (20/107)  |
| Genital ulcer disease-non-herpetic | 9.1% (31/338)   |
| Genital scabies                    | 4.1% (14/338)   |
| Phthirus pubis                     | 0.8% (3/338)    |

STIs: Sexually transmitted infections, M: Male, F: Female

8.65% (43/497) had denied it. All the patients counseled were offered condoms, but only 34.2% (170/497) of them took them. Partner notifications were undertaken in 30.6% (152/497) cases. Partner management was done in 3.6% (18/497) cases.

## Discussion

STI have a tremendous impact on public health. They are responsible for significant proportion of infertility in both sex, morbidity, economic loss to the family, and increased susceptibility to HIV infection. STI are major contributor to fetal deaths, abortions, and the delivery of low birth weight babies.<sup>[6]</sup>

STI is not only a medical problem but also causes significant social stigma. Early diagnosis and appropriate treatment will definitely curb the transmission of HIV/AIDS. To achieve this, syndromic approach to STI management came into effect.<sup>[7,8]</sup> This syndromic approach is an approach where the health care providers diagnose and treat patients on the basis of signs and symptoms (syndrome) rather than specific STIs. In the developed countries, there has been a steady increase in STI, especially the viral STIs and genital Chlamydia infections. In the present study, the genital ulcer disease herpetic was the most common one. Syphilis was found only in three cases. Urethral discharge was present in 13.85% patients, which is similar to the previous reports.<sup>[9]</sup> In the STI clinic in UK, a 9% increase in the incidence of STIs was observed between 1996 and 1997.<sup>[10]</sup> A rapid decline in the incidence of syphilis has been noted in white communities with, however, stable or even increase in rates among the blacks.<sup>[11]</sup> There has been a constant decline of gonorrhoea among the heterosexual men and all women in America.<sup>[12]</sup>

In our study, males constituted 75.45% and females constituted 24.24% (female to male ratio 1:3.09). The most common STI found to be herpes genitalis followed by genital warts, and HIV was positive in 4.2% of patients, whereas, A retrospective data analysis of 1000 STI patients from 1994 to 1998 at Medical College, Trivandrum was carried out.<sup>[13]</sup> Males constituted 61.1% and females 38.9% of the study population. The commonest STD was syphilis, both in men and women,

followed by herpes genitalis and condyloma acuminata. The prevalence of herpes genitalis and condyloma acuminata increased, but there was a definite decline in the prevalence of gonorrhoea. HIV was detected in 3.2% of the patients.

A retrospective data analysis was carried out to find the trends in frequency and distribution of different STIs in North Eastern (NE) India during 1995-1999.<sup>[14]</sup> HIV infections accounted for 9.62% of the total STI patients. In the present study, HIV seropositivity among STI patients was 4.2%, that is higher than the national average (2.5%) as per recent NACO estimates.<sup>[15]</sup> But, there was a wide variation for seropositivity for HIV among STI patients, 8.21% in Zamzachin, *et al.*,<sup>[16]</sup> study, 9.62% in Jaiswal, *et al.*,<sup>[12]</sup> study, and 17.2% in Saikia, *et al.*,<sup>[17]</sup> study. This difference could be attributed to the high prevalence of HIV infection and intravenous drug abuse in the North-eastern part of India.

VDRL reactivity was seen in 2.15% of the total ulcerative STI patients, which is contrary to the reports of Vora R, *et al.*,<sup>[18]</sup> and Mewada, *et al.*,<sup>[19]</sup> where the incidence of VDRL reactivity was 19.41% and 53.3%, respectively. This clearly indicates that there is definitely decline in the incidence of syphilis in recent times.

Changing trends of the profile of STIs and HIV seropositivity in STI clinic attendees over a 15-year period at a Regional STD Center in New Delhi were analyzed.<sup>[20]</sup> The STI profile and HIV seropositivity were compared between 1990-1993 (A), 1994-1997 (B), 1998-2001 (C), and 2002-2004 (D). Of the 78,617 STD attendees, 12,709 (16.2%) had STIs.<sup>[21]</sup> Similar to our study, i.e. the viral STIs like genital ulcer disease herpetic, condyloma acuminata, *molluscum contagiosum* etc., were much more prominent than the bacterial STIs like urethral or cervical discharge, syphilis, genital ulcer disease non-herpetic was found. In that study during period A, genital discharges and during B, C and D, genital ulcerative diseases were predominant. Syphilis was the commonest STI. There was significant rise in the cases of syphilis, herpes genitalis, and genital warts and reduction in that of chancroid, lymphogranuloma venereum (LGV), donovanosis, candidiasis, trichomoniasis, and bacterial vaginosis cases. A rising trend was observed in the HIV seropositivity during the different periods. The association of HIV seropositivity was consistently more in patients presenting with genital ulcers, especially syphilis, and rose significantly from A (0.6%) to C (8.8%), but became stationary during D. Bacterial STDs like chancroid and gonorrhoea are showing a declining trend, but the viral STDs like herpes genitalis and condylomata acuminata are showing upward trend.<sup>[21]</sup>

Condom promotion (34.2%), partner notification (30.6%), and partner management (3.6%) were not adequate in this study. But, these were important for STI control. These may be due to poor counseling and inadequate training of health care providers.

Venereophobia is an anxiety-related disorder that includes fear to STIs, abnormal disease conviction, and factitious STIs and AIDS.<sup>[22]</sup> In the present study, venereophobia was present in 17.33% males and 4.13% females having STIs, and the difference was statistically significant ( $P = 0.0004$ ). As this was an institution-based study, it was very difficult to predict the exact scenario of STIs in the community. For this, a community-based study is required.

Due to logistic support, hepatitis B surface antigen testing and other serological test for syphilis were not done. The RPR and HIV testing center were not attached to our department in our institute.

But, this study was done in a tertiary care hospital where many patients attend dermatology clinic. We had good counseling facilities in a well-privacy maintained room. We were the main referral center for HIV testing, so lot of patients with STI report to our institute.

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