

Pattern of sexually transmitted infections: A profile from a rural- and tribal-based sexually transmitted infections clinic of a tertiary care hospital of Eastern India

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ABSTRACT

Introduction: Prevalence of Sexually transmitted infections (STI's) in developing nations is very high where the measures for STI treatment and prevention are limited. Enormous variation in clinical presentation make STI's very difficult to be studied epidemiologically. To know the exact prevalence of STI's is very important for a region or community for planning preventive strategies. The aim of the present study is to observe the pattern of sexually transmitted infections among the tribal and non-tribal population attending a rural and tribal base tertiary care Centre. **Method:** All the consecutive STI patients irrespective of age and sex attending the STI clinic were included. Thorough clinical examination and relevant investigations were done to know the different STI's present in them. They were divided into tribal and non-tribal group as per history and comparison of patterns of STI's done among the two groups. **Result:** Around 34% of STI patients were tribal. Majority of patients belong to 20-40 years of age. Sex ratio of tribal group was 1:0.86 and non-tribal group was 1:2.64. The difference is statistically significant. Commonest STI in both the group was Genital ulcer disease Herpetic but the occurrence of urethral discharge, genital scabies, and inguinal bubo were among the tribal group. Per vaginal discharge was the commonest STI among the female in both the groups. VDRL positivity was 1.16% and HIV positivity was 0.36% among STI clinic attendees. **Conclusion:** Tribal females need special attention for prevention of STI in tribal community.

Keywords: Female, herpetic, nontribal, sexually transmitted infection, tribal

Introduction

Sexually transmitted infections (STIs) include diseases that are transmitted by sexual intercourse. They are loosely defined as constellation of infections and syndromes that are epidemiologically heterogeneous, but all of which are almost or at least often transmitted sexually.^[1]

The classical venereal diseases are most often transmitted through sexual contact and truly sexually transmitted diseases (STDs). Nowadays the term STI is preferred, since it covers all the

infections that may not cause clinical disease of genitals but transmitted by sexual interaction. However, for practical purpose, both STD and STI are used synonymously.

STDs have been known to humanity since ancient times with written references in biological, Hindu, and Greek records. Till date, STIs remain a major public health problem for both developing and developed countries. Unprotected sexual intercourse with an infected partner is by far the major risk factor for STI transmission. In addition, STI increases the risk of human immunodeficiency virus (HIV) transmission.^[2]

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With enormous variation in their clinical presentation, severity of morbidity cause, association of sexual behavior variation in their prevalence and transmissibility, and tendency to keep it secret, STIs are difficult to be studied epidemiologically. Previously, there were lack of diagnostic tool for identification of STIs, but in recent days introduction of newer diagnostic technologies and screening has lead to proper identification of STIs, which helps to know true prevalence-based estimates of prevalence of STIs.^[3] To know the exact prevalence of STIs is of immense importance for a region or a country for planning and implementing STI control strategies to prevent HIV transmission.

Aims

To know the pattern of STIs in STI clinic of a tertiary care institute of eastern India and also to understand prevalence of STIs in the tribal population among STI clinic attenders.

Subjects and Methods

All the consecutive patients attending STI clinic of a rural- and tribal-based tertiary care hospital of eastern India from March 2016 to February 2017 irrespective of age and sex were included in this study. Informed written consent was taken from patients or from their parents (in case of minor).

Proper history taking and through clinical examination were done. The patients were sent to STI counselor for counseling. HIV testing, rapid plasma regain, and hepatitis B surface antigen were done in all cases; gram staining and potassium hydroxide (KOH) preparation for fungal element was done in those patients where it is applicable. STIs were classified in different syndromes as described by National AIDS Control Organization (NACO).^[4] The STIs which were not included in the syndromic approach were identified by their clinical appearances and relevant laboratory finding. Condom promotion and partner notification were done. Data were collected in a prestructured case data sheet and analyzed using appropriate Medcalc software version 10.2.0.0" by Acaciaaan 22, B-8400, Ostend, Belgium. Chi-square test was done as a test of significance. The study population is divided into nontribal and tribal groups, and the pattern of STI was identified in both the groups.

Results

In all, 3295 patients (males 1890 and females 1405) attending the STI clinic were included in the study which accounts for 1.67% of total outpatient department attendance. Ages of STI clinic attendees ranged from 16 to 66 years with a mean of 36.12 and standard deviation of 1.98 years. A total of 1890 of them were males and 1405 were females with a female-to-male ratio of 1:1.34. STI clinic attendees were 34.35% (1101/3295). Tribal population among STI clinic attendees was 75.6% (2491 patients of 3295) whom were diagnosed to have STIs. Among patients with STI, 63.5% (1582/2491) were males, 36.33 (905/2491) were females, and 0.16 (4/2491) were transgender with a sex ratio of 1:1.71.

The age of patients with STI ranged from 16 to 62 years with a mean of 36.12 years. The majority of patients with STI belonged to age group 20–30 years (45.84%, 1142/2491) followed by 30–40 years (30.14%, 751/2491), 10–20 years (8.63%, 215/2491), 40–50 years (8.10%, 202/2491), 50–60 years (4.09%, 102/2491), and the remaining (3.17%, 79/2491).

Among patients with STI, 34.16% (851/2491) were tribal and 65.84 (1640/2491) were nontribal. Ages of tribal patients ranged from 16 to 62 years with a mean age of 32.16 years and standard deviation of 2.02 years, whereas ages of nontribal patients with STI ranged from 17 to 66 years with a mean of 38.21 years and standard deviation of 2.21 years.

Sex ratio of tribal STI patient was 1:0.86 (395 males and 456 females), and this ratio was 1:2.64 (449 females and 1187 males) in the nontribal population. Therefore, tribal females are more predominantly involved with STI than nontribal female and this difference was statistically significant ($P < 0.0001$).

Among male nontribal patients, the commonest STI was genital ulcer disease – herpetic (47.51%), followed by genital wart (11.54%), molluscum contagiosum (11.12%), urethral discharge (11.12%), genital scabies (7.16%), penile candidiasis (4.46%), genital ulcer disease – nonherpetic (4.04%), and so on.

Whereas among male tribal patients with STI, the commonest STI was genital ulcer disease – herpetic (19.75%) followed by urethral discharge (16.45%), genital scabies (15.44%), inguinal bubo (9.87%), genital wart (9.62%), genital ulcer disease – nonherpetic (9.62%), penile candidiasis (7.59%), pediculosis pubis (6.07%), and so on [Table 1].

In female, nontribal STI group, the commonest STI was a combination of vaginal and cervical discharge (24.99%) followed by vaginal discharge (21.83%), cervical discharge (19.59%), genital ulcer disease – herpetic (6.9%), genital wart (5.56%), lower abdominal pain syndrome (5.12%), inguinal bubo syndrome (3.56%), and so on [Table 1].

Whereas in female tribal patients with STI, the majority of patients suffered from per vaginal discharge [combination of vaginal and cervical discharge (15.78%) patients and vaginal discharge (14.03%) of cases] followed by lower abdominal pain syndrome (12.5%), genital ulcer disease – herpetic (4.82), genital wart (3.94), molluscum contagiosum (3.07%), and so on [Table 1]. The difference in the occurrence of urethral discharge among nontribal male patients with STI and tribal male patients was statistically significant ($P < 0.0001$).

VDRL test was performed in 2224 STI clinic attendees out of which 722 were tribal and 1502 were nontribal. VDRL was positive among 1.16% of STI clinic attendees. Among VDRL-positive patients, 1.38% (10 of 722) were tribal and 1.06% (16 of 1502) were nontribal. Syphilis was observed in only six patients; out of these, five were nontribal and one was tribal.

HIV positivity was noted in 0.36% (12 of 3295) of STI clinic attendees; among them 9 were males and 3 were females. Among 12 HIV-positive attendees, 10 were nontribal and 2 were tribal.

Different psychosexual problems were noted among STI clinic attendees. Among them, Dhat syndrome, venerophobia, erectile dysfunction, and premature ejaculation were common [Table 2].

Discussion

STIs have tremendous impact on national health. They are responsible for a significant proportion of maternal morbidity, ectopic pregnancy, abortion, infertility, infant death, and low birthweight baby.^[5] STIs increase to susceptibility of malignancy and HIV infections. Early diagnosis and appropriate treatment will definitely reduce HIV/AIDS transmission. To achieve this, NACO adopted syndromic approach in STI management where not only the experts but also base-level health workers can diagnose and the treat patients on the basis of basic signs and symptoms rather than specific STIs.^[6]

In this study, males constituted 57.36% and females 42.64% of STI clinic attenders with a sex ratio of 1:1.34. Viral STIs were common than nonviral STIs. HIV was positive in 0.36% cases. These data are more or less similar to the study performed by Sarkar *et al.* in a city-based, STI clinic except prevalence of HIV positivity (which is 4.2% in the study done by Sarkar *et al.*),^[7] Whereas pattern of STIs carried out in Medical College Trivandrum between 1994

and 1998 summed the commonest STD was syphilis followed by genital herpes and genital wart.^[8] These data clearly showed that there is an increase in viral STIs (genital herpes, genital wart) and decline in prevalence of gonorrhoea.

In developing countries, there is a constant increase in viral STIs and genital chlamydiae infection. In this study, the commonest STI was genital ulcer disease – herpetic; syphilis was found only in 0.18% of cases. VDRL reactivity was seen in 1.16% of patients with STI which in contrary to reports of Vora *et al.*^[9] and Mewada *et al.*,^[10] where incidence of VDRL reactivity was 19.4% and 53.3%, respectively; this clearly denotes there is a definite decline in syphilis in recent days. There is a rapid reduction in White communities with stable or even increase among the Black races.^[11] Urethral discharge was noticed in 16.45% of tribal patients with STI and 11.12% in nontribal patients with STI cases in this study which is similar to previous reports.^[7,11] This difference was statistically significant ($P < 0.0071$).

HIV infection was observed among 9.62% of patients with STI in a retrospective data analysis of north eastern India.^[12] HIV seropositivity was 0.36% in this study, and it is still lower than national average (2.5%) as per NACO estimates.^[13] This difference could be attributed to high prevalence of HIV infection and intravenous drug abuse in north east India.

There are wide variations in seropositivity for HIV among patients with STI, like 8.21% in Zamzachin *et al.*,^[14] and 17.2%

Table 1: Patterns of sexually transmitted infections

STDs	Tribal (n=851), n (%)		Nontribal (n=1640), n (%)		Transgender (n=4), n (%)
	Male (n=395)	Female (n=456)	Male (n=1187)	Female (n=449)	
Urethral discharge	65 (16.45)	0	132 (11.12)	0	0
Cervical discharge	0	72 (15.78)	0	88 (19.59)	0
Vaginal discharge	0	64 (14.03)	0	98 (21.83)	0
Vaginal + cervical discharge	0	105 (23.02)	0	110 (24.49)	0
Genital ulcer disease nonherpetic	38 (9.62)	22 (4.82)	48 (4.04)	30 (6.81)	1
Genital ulcer disease herpetic	78 (19.75)	36 (7.89)	564 (47.51)	31 (6.9)	3
Lower abdominal pain	0	57 (12.5)	0	23 (5.12)	0
Inguinal bubo	39 (9.87)	24 (5.26)	22 (1.85)	16 (3.56)	0
Genital wart	38 (9.62)	18 (3.94)	137 (11.54)	25 (5.56)	0
Molluscum contagiosa	22 (5.57)	14 (3.07)	132 (11.12)	14 (3.11)	0
Genital scabies	61 (15.44)	31 (6.79)	85 (7.16)	8 (1.78)	0
Pediculosis pubis	24 (6.07)	11 (2.41)	14 (1.17)	6 (1.33)	0
Penile candidiasis	30 (7.59)	0	53 (4.46)	0	0

STDs: sexually transmitted diseases

Table 2: Psychosexual problems among sexually transmitted infections in clinic attendees

	Nontribal (n=2194), n (%)		Tribal (n=1101), n (%)	
	Male (n=1467)	Female (n=703)	Male (n=545)	Female (n=556)
Venerophobia	38 (2.55)	22 (3.12)	21 (3.85)	8 (1.46)
Dhat syndrome	42 (2.82)	0	16 (2.93)	0
Erectile dysfunction	41 (2.75)	0	31 (5.68)	0
Premature ejaculation	32 (2.15)	0	18 (3.3)	0
Erectile dysfunction with premature ejaculation	30 (2.01)	0	17 (3.11)	0
Loss of libido	12 (0.8)	34 (4.83)	6 (1.1)	14 (2.56)

in Saikia *et al.*^[15] Changing trends of STI profile was depicted by Narayan *et al.* in their study. STI profile was compared between 1990 and 1993 (A), 1994 and 1997 (B), 1998 and 2001 (C), and 2002 and 2004 (D), and it showed that during period A genital discharge and during periods B, C, and D genital ulcerative disease was predominant. A rising trends was in HIV seropositivity during different periods. The association of HIV seropositivity was consistently more in patients presenting with genital ulcers and increased significantly for A (0.6%) to (8.8%) but became stationary during D.^[16] Bacterial STDs like chancroid and gonorrhoea showed a declining trend, whereas viral STIs such as genital herpes and genital wart showed an increasing trend. Likewise, this study showed predominant viral STIs and a minimum number of bacterial STIs. This is probably attributed to the availability of broad-spectrum antimicrobial for bacterial STIs even if they were prescribed by general practitioners.

Bankura Sammilani Medical College is located in the district of Bankura in West Bengal having plains of Bengal in the east and Chota Nagpur plateau on the west. This Chota Nagpur plateau is the habitat of different tribes including cole, vill, munda Santali, and so on. The catchment area of this hospital includes Bankura, Purulia, and a part of west Midnapur district which were also situated within the plateau of Chota Nagpur. Though it was commonly believed that STIs are more prevalent in city and adjacent areas, it was not at all uncommon in rural areas. In India, illiterates and those with primary-level education and lower income group form major proportion of STI clinic attendees.^[17]

There are some ethnic variations as well like several population-based cross-sectional studies in the United States showed increased rates of gonorrhoea, Chlamydia, and genital herpes infection in African-Americans.^[18] Higher prevalence of human papillomavirus infection has been noted in African-American than White or Hispanics.^[19] Eight percent of tribal population in Gaochiroli District, Maharashtra, in 1998 was found to be VDRL-positive because 30% of tribal population in the district was involved in sex trade.^[20]

Conclusion

In this study, the majority of STI occurred in the age group of 20–40 years. STI was more prevalent among females in tribal group. Viral STIs were more common as a whole. In tribal group, urethral discharge was higher than nontribal group. HIV positivity in this study was lower than national average. Percentage of genital scabies, inguinal bubo, and genital ulcer disease nonherpetic was higher in male nontribal patients with STI, whereas in female tribal patients with STI percentage of lower abdominal pain syndrome is higher. Per vaginal discharge was prevalent in tribal more than the female nontribal group.

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Conflicts of interest

There are no conflicts of interest.

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