

## Original Research Article

# Pattern of sexually transmitted infections in a district hospital from Himachal Pradesh

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### ABSTRACT

**Background:** Sexually transmitted infections (STIs) are a public health problem, which increase the HIV transmission and are a burden to the individual, his family and community. The prevalence of STIs varies widely across different regions in our country. There is immense need to study the pattern of STIs in various regions for proper planning and implementation of control strategies. The study was conducted with the objective to assess the pattern of STIs and their prevalence in a District hospital of Himachal Pradesh.

**Methods:** A retrospective hospital based study was carried out from clinical records of the STI clinic over a period of one year (January 2016 to December, 2016). Detailed history, demographical data and clinical features were recorded, and STIs were categorized into various syndromes as depicted by National AIDS Control Organization. The data collected was analyzed statistically, and compared with other studies from across the country.

**Results:** Cervical/vaginal discharge (80.4%) was the commonest STI followed by balanoposthitis (33.3%), lower abdominal pain syndrome (LAP) (17.1%), genital scabies (4.2%), herpes genitalis (3.7%), urethral discharge (1.9%), genital warts (0.98%), chancroid (0.61%), molluscum contagiosum (0.6%), syphilis (0.12%) and inguinal bubo (0.12%). Balanoposthitis was the commonest STI in males, followed by genital scabies, herpes genitalis, genital warts, chancroid and genital molluscum, urethral discharge and syphilis. In females, cervical/vaginal discharge was the most frequently reported STI followed by LAP, genital herpes, genital scabies, genital warts, chancroid, inguinal bubo and molluscum contagiosum.

**Conclusions:** The increase prevalence of cervical/vaginal discharge was due to increased referral from Gynaecology OPDs. Balanoposthitis was quite commonly reported in males. The increase in the viral STIs has been seen, which is consistent with other studies from different regions.

**Keywords:** Sexually transmitted infections, Pattern, Balanoposthitis, Herpes genitalis, Cervical/vaginal discharge

### 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> They are a major health problem throughout the world and their importance has been magnified with the advent

of Human Immunodeficiency Virus (HIV) infection. Study of prevalence of STIs is important to know about their incidence at a particular place and to plan and implement appropriate control strategies.<sup>2</sup> A number of regional studies are available from different parts of India,<sup>2-4,8-18</sup> but none from this region. The pattern of STIs in these studies varies widely. The present study was conducted to determine the pattern of STIs in a District level hospital from Himachal Pradesh and to find out any

changes in the pattern of STIs by comparing with previous studies.

## METHODS

All the patients attending the STI clinic of a District hospital from January, 2016 to December, 2016 were included in the study. Diagnosis was based on detailed history, clinical examination and relevant laboratory investigations. The data recorded included age, sex, marital status, socio-economic status. The patients were sent to STI counsellor for counselling. Serological tests including HIV antibody testing by enzyme-linked immunosorbent assay (ELISA) and rapid plasma reagin test (RPR) were done in all patients. 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 cervical/vaginal discharge, genital ulcer disease herpetic and non-herpetic, inguinal bubo, urethral discharge, lower abdominal pain, genital warts, genital molluscum etc. Partner notification and condom promotion was done. The results were compiled and data was analysed.

## RESULTS

A total of 1116 patients attended the STI clinic of our hospital in the year 2016, out of which 818 were diagnosed to have some STI. Out of these 12.5% were males (102/818) and rest 87.5% (714/818) were females, with male to female ratio being 1:7. The majority of the patients (48.2%) belonged to the age group of 25-44 years, followed by 20-24 years (30.7%), >44 years (13.8%) and <20 years (8.3%).

Balanoposthitis (36.3%) was the commonest STI in males, followed by genital scabies (29.4%), Herpes genitalis (20.6%), genital warts (5.8%), chancroid and genital molluscum (both 3.9%), urethral discharge (1.9%) and syphilis (0.9%). Donovanosis and inguinal bubo were not reported. In females, cervical/vaginal discharge (80.4%) was the most frequently reported STI followed by lower abdominal pain syndrome (LAP) (17.1%), genital herpes (1.3%), genital scabies (0.56%), genital warts (0.3%), chancroid, inguinal bubo and molluscum contagiosum, in the decreasing order (Table 1).

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

STI	Male (n=102) (%)	Female (n=714) (%)
Vaginal/ cervical/ both/-discharge	0	574(80.4)
Genital ulcer disease- Herpetic	21(20.6)	9(1.3)
Genital ulcer disease-non herpetic	Syphilis	1(0.9)
	Chancroid	4(3.9)
Urethral discharge (UD)	2(1.9)	0
Lower abdominal pain (LAP)	0	122(17.1)
Inguinal Bubo (IB)	0	1(0.14)
Genital warts	6(5.8)	2(0.3)
Genital molluscum contagiosum	4(3.9)	1(0.14)
Scabies	30(29.4)	4(0.56)
Balanoposthitis	34(33.3)	0

**Table 2: Percentage distribution of various STIs (Total STI cases=818, Male=102, Female=714).**

STI	Percentage (%)	
Vaginal/ cervical/ both/-discharge	80.4% (514/714)	
Genital ulcer disease- Herpetic	3.7% (30/818)	
Genital ulcer disease-non herpetic	Syphilis	0.12% (1/818)
	Chancroid	0.61% (5/818)
Urethral discharge (UD)	1.9% (2/102)	
Lower abdominal pain (LAP)	17.1% (122/714)	
Inguinal Bubo (IB)	0.12% (1/818)	
Genital warts	0.98% (8/818)	
Genital molluscum contagiosum	0.6% (5/818)	
Scabies	4.2% (34/818)	
Balanoposthitis	33.3% (34/102)	

The frequency of occurrence of genital herpes, chancroid, genital scabies, genital warts and molluscum in males was statistically significantly higher as compared to

females with p values of 0.001\*, 0.001, 0.001\*, 0.01\* and 0.00\* respectively.

Overall, cervical/vaginal discharge (80.4%) was the commonest STI followed by balanoposthitis (33.3%), LAP (17.1%), scabies (4.2%), herpes genitalis (3.7%), urethral discharge (1.9%), genital warts (0.98%), chancroid (0.61%), molluscum contagiosum (0.6%), syphilis (0.12%) and inguinal bubo (0.12%). STIs, which were not included in the syndromic management like *molluscum contagiosum*, genital warts, genital scabies and balanoposthitis were not uncommon (Table 2).

RPR was found to be reactive in 2 cases (the test was conducted in 567/818 cases, one of them having primary chancre, the other presenting with genital warts). One patient was found to be reactive for HIV.

Counselling 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 counsellor was advised in most of the patients. Partner notifications were undertaken in 28.4% cases. Partner management was done in 6.4% 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 a major contributor to fetal deaths, abortions, and the delivery of low birth weight babies.<sup>6</sup>

In the present study, most of the patients (48.2%) who were diagnosed to have some STI were in the age group of 25-44 years. This is the sexually active group and at a high risk of being behaviourally more vulnerable to STI acquisition, as they generally have higher number of sexual partners and more concurrent partnerships and change partners more often than older age groups.<sup>7</sup> This is also the predominant age group observed to be having STI in other Indian studies.<sup>8-18</sup> In our study, females (87.5%) outnumbered the males (12.5%), which was in strike contradiction to the earlier studies where the majority of the patients were males.<sup>8-18</sup> This might be due to increased referral to STI clinic from Gynaecological OPDs in our case as compared to other studies.

The overall most common STI in our study was cervical/vaginal discharge (80.4%) followed by balanoposthitis (33.3%), LAP (17.1%), scabies (4.2%), herpes genitalis (3.7%), urethral discharge (1.9%), genital warts (0.98%), chancroid (0.61%), molluscum contagiosum (0.6%), syphilis (0.12%) and inguinal bubo (0.12%). There are a number of studies done in the past to assess the pattern of STIs in different parts of the country. Sharma et al in a recent study in the north-west found that the overall most common STI was balanoposthitis (39.62%) followed by genital herpes

(17.5%), vaginal/cervical discharge (13.4%), genital molluscum (11.74%), genital warts (10.77%), genital ulcer disease (GUD)-non herpetic (4.59%), LAP (2.66%), and urethral discharge (2.55%) in decreasing order.<sup>8</sup> Saikia et al. in a study from Assam also found that the Candidiasis (vulvovaginitis in women and balanitis/balanoposthitis in men) was the most common STI (21.5%) followed by syphilis (17.2%), genital warts (15%), herpes genitalis (11.3%), non-gonococcal urethritis (NGU), and gonococcal urethritis.<sup>9</sup> In a study from Manipur, balanoposthitis (22%) was the commonest reported STD, followed by gonorrhoea (11.8%), NGU (11.2%), and syphilis (6.2%).<sup>10</sup> Jaiswal et al. did a retrospective data analysis in North Eastern India during 1995 - 1999. The commonest STD was chancroid (25.7%) followed by condylomata acuminata, NGU, lymphogranuloma venereum, syphilis, gonorrhoea, herpes genitalis, and balanoposthitis.<sup>3</sup> Another study in Chengalpattu, Madras has shown that the commonest STD was chancroid (24.4%) in men and syphilis (29%) in women while balanoposthitis (11.4%) ranked third in men.<sup>11</sup> Bhushan et al found that genital warts (12.4%) was commonest followed by gonorrhoea, chancroid, genital herpes and syphilis in a study in Chandigarh while in another study from Trivandrum, the commonest STD reported was syphilis, followed by herpes genitalis and condyloma acuminata.<sup>12,13</sup> Jain et al in their study from Haryana found that herpes genitalis was the most common STD (31.26%), followed by condyloma acuminata, syphilis, gonorrhoea and other diseases.<sup>14</sup> Choudhary et al. had similar results with herpes genitalis (28.7%) being the commonest infection followed by syphilis, wart, gonorrhoea, chlamydia, and others.<sup>15</sup> Devi et al. found that herpes genitalis (32.8%) was the most common ulcerative STI, while genital wart was the most common nonulcerative STI (17.1%).<sup>16</sup> Vora et al found that herpes genitalis was most common (24.37%), followed by genital warts, genital molluscum, Chancroid and syphilis, gonococcal urethritis and NGU.<sup>17</sup> A recent retrospective study from Kashmir found that, GUD was the presentation in 29.35% patients (herpes genitalis-50%, chancroid -24.07%, syphilis- 18.52%). 22.83% females presented with vaginal discharge (57.14% of which had vaginal candidiasis) and 13.04% males presented with urethral discharge (2/3 had NGU and 1/3 had gonococcal urethritis).<sup>18</sup>

In the present study, the commonest STI in males was balanoposthitis (36.3%), followed by genital scabies (29.4%) and Herpes genitalis (20.6%). In females, cervical/vaginal discharge (80.4%) was the most frequently reported STI followed by LAP (17.1%), and genital herpes (1.3%). A study by Sarkar et al found that herpes genitalis (51.9%) was the most common STI, followed by urethral discharge (13.8%), and condyloma acuminata (12.9%) among the male patients and combination of cervical and vaginal discharge (29.9%) followed by vaginal discharge (23.3%), cervical discharge (18.6%), genital ulcer disease (herpetic 8.4%) and condyloma acuminata (5.6%) in the females.<sup>4</sup>

Muruges et al also found balanoposthitis in males and vulvovaginitis females (19.85%) to be the commonest STI, followed by syphilis (15.95%), herpes genitalis (13.04%), chancroid, gonorrhoea and others.<sup>3</sup> Sharma et al found that, balanoposthitis (50.75%) was the most common STI, followed by genital herpes (19.87%), condyloma acuminata, and molluscum contagiosum, among the male patients. In the females, the most common STI was combination of cervical and vaginal discharge (61.04%) followed by molluscum contagiosum (20.2%), genital herpes (9.1%), and condyloma acuminata.<sup>8</sup>

Only 2 out of 567 patients in present study were tested positive for RPR and only one of them was HIV positive. There is quite a variation in the prevalence of HIV positivity in various studies, ranging from 1.63% to 9.62%.<sup>2,4,9,15-18</sup>

## CONCLUSION

The trend of STIs in this study is largely similar to various studies from different regions. The more number of females and the increased prevalence of cervical/vaginal discharge in our study were due to referral to STI clinic from the Gynaecology OPDs as well, in addition to Dermatology OPD. Viral STIs like genital herpes and genital warts are showing a gradual upward trend in all the studies, probably due to increased use of antibiotics for bacterial STIs. There is immense need to create the awareness in the masses regarding the STIs and the risk of HIV transmission. Health care providers need to be more cautious, and proper implementation of control strategies needs to be done.

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## REFERENCES

1. Marfatia YS, Sharma A, Joshipura SP. Overview of Sexually Transmitted Diseases. In: Valia RG, Valia AR, editors. IADVL Textbook of Dermatology. 3rd ed. Volume 59. Mumbai: Bhalani Publishing House; 2008: 1766–1778.
2. Jaiswal AK, Banerjee S, Matety AR, Grover S. Changing trends in sexually transmitted diseases in North Eastern India. *Indian J Dermatol Venereol Leprol*. 2002;68:65-6.
3. Muruges SB, Sugareddy, Raghunath S. Pattern of sexually transmitted diseases at Davangere. *Indian J Sex Transm Dis*. 2004;25(1):9-12.
4. Sarkar S, Shrimal A, Das J, Choudhury SR. Pattern of Sexually Transmitted Infections: A Profile from a Sexually Transmitted Infections Clinic of a Tertiary Care Hospital of Eastern India. *Ann Med Health Sci Res*. 2013;3(2):206–9.
5. New Delhi: Government of India. Operational guidelines for programme managers and service providers for strengthening STI/RTI services, National AIDS Control Organization, Ministry of Health and Family Welfare. 2007: 18.
6. STDs and Pregnancy–CDC Fact Sheet. Center for Disease Control, 2008. Available from: [www.cdc.gov/std/pregnancy/STD\\_Fact\\_act-Pregnancy.htm](http://www.cdc.gov/std/pregnancy/STD_Fact_act-Pregnancy.htm) . Accessed on 20 November 2016.
7. Wellings K, Nanchahal K, Macdowall W, McManus S, Erens B, Mercer CH, et al. Sexual behaviour in Britain early heterosexual experience. *Lancet*. 2001;358:1843–50.
8. Sharma S, Tiwari S, Paliwal V, Mathur DK, Bhargava P. Study of patterns of sexually transmitted diseases using a syndromic approach in the era of human immunodeficiency virus from a tertiary care hospital of the Northern India. *Indian J Sex Transm Dis*. 2015;36(2):158-61.
9. Saikia L, Nath R, Deuori T, Mahanta J. Sexually transmitted diseases in Assam: An experience in a tertiary care referral hospital. *Indian J Dermatol Venereol Leprol*. 2009;75:329.
10. Zamzachin G, Singh NB, Devi TB. STD trends in regional institute of medical sciences, Manipur. *Indian J Dermatol Venereol Leprol*. 2003;69:151-3.
11. Krishnamurthy VR, Ramachandran V. STD trends in Chengalpattu hospital. *Indian J Dermatol Venereol Leprol*. 1996;62:3-12
12. Kumar B, Sharma VK, Malhotra S. Pattern of sexually transmitted diseases in Chandigarh. *Indian J Dermatol Venereol Leprol*. 1987;53:286-91.
13. Nair TG, Asha LK, Leelakumari PV. An epidemiological study of sexually transmitted diseases. *Indian J Dermatol Venereol Leprol*. 2000;66:69-72.
14. Jain VK, Dayal S, Aggarwal K, Jain S. Changing trends of sexually transmitted diseases at Rohtak. *Indian J Sex Transm Dis*. 2008;29:23–5.
15. Choudhry S, Ramachandran VG, Das S, Bhattacharya SN, Mogha NS. Pattern of sexually transmitted infections and performance of syndromic management against etiological diagnosis in patients attending the sexually transmitted infection clinic of a tertiary care hospital. *Indian J Sex Transm Dis*. 2010;31:104–8.
16. Devi SA, Vetrichevvel TP, Pise GA, Thappa DM. Pattern of sexually transmitted infections in a tertiary care centre at Puducherry. *Indian J Dermatol*. 2009;54:347–9.
17. Vora R, Anjaneyan G, Doctor C, Gupta R. Clinico-epidemiological study of sexually transmitted infections in males at a rural-based tertiary care center. *Indian J Sex Transm Dis*. 2011;32:86-9.
18. Hassan I, Anwar P, Rather S, Sameem F, Majid I, Jabeen Y, et al. Pattern of sexually transmitted infections in a Muslim majority region of North India. *Indian J Sex Transm Dis*. 2015;36(1):30-4.

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