

Original Research Article

# Clinicoepidemiological profile of sexually transmitted disease (STD) patients presenting in a tertiary care center

Gunjan Gupta<sup>1</sup>, Jitendra Singh Bist<sup>2</sup>, Rahul Sudan<sup>3\*</sup>, Kewal Krishan<sup>4</sup>, Neeti Kumari<sup>5</sup>

<sup>1,4</sup>Senior Resident, <sup>2</sup>Professor, <sup>5</sup>Associate Professor, Department of Dermatology, Venerology and Leprology,

<sup>3</sup>Senior Resident, Department of General Medicine, Shri Guru Ram Rai Institute of Medical and Health Sciences, Shri Mahant Indires Hospital (SGRRIMHS, SMIH), Dehradun, Uttarakhand, India

\*Corresponding author email: [rahulsudan6368@gmail.com](mailto:rahulsudan6368@gmail.com)

	International Archives of Integrated Medicine, Vol. 6, Issue 2, February, 2019. Copy right © 2019, IAIM, All Rights Reserved. Available online at <a href="http://iaimjournal.com/">http://iaimjournal.com/</a>	
	ISSN: 2394-0026 (P)	ISSN: 2394-0034 (O)
	Received on: 15-01-2019	Accepted on: 20-01-2019
	Source of support: Nil	Conflict of interest: None declared.
<b>How to cite this article:</b> Gunjan Gupta, Jitendra Singh Bist, Rahul Sudan, Kewal Krishan, Neeti Kumari. Clinicoepidemiological profile of sexually transmitted disease (STD) patients presenting in a tertiary care center. IAIM, 2019; 6(2): 7-12.		

## Abstract

**Background:** Sexually transmitted infections (STIs) constitute a major health problem in the developing countries and prevalence of STIs varies from region to region in our country.

**Aim:** To study the pattern and prevalence of sexually transmitted infections and HIV seropositivity among patients presenting in a tertiary care center.

**Materials and methods:** A retrospective data was collected in the department of Dermatology at Shri Guru Ram Rai Institute of Medical and Health Sciences (SGRRIMHS), Shri Mahant Indires Hospital (SMIH), a tertiary care center in Dehradun, Uttarakhand, India, from January 2011 to December 2018. A total of 525 patients were analyzed in this study.

**Results:** A total of 525 patients were enrolled in our study. STIs were more common in men, with male (365): female (160) ratio of 2.2:1. Maximum numbers of patients were in the age group of 25 to 34 years. Unskilled workers (22.28%) and housewives (20.00%) constituted major proportion. Majority of the cases presented with warts (38.09%) followed by molluscum contagiosum (20.95%) and herpes genitalis (19.61%). But herpes genitalis (27.39%) was found to be the most common STD seen among males and warts (68.75%) among the females. HIV seropositivity was seen among 20 (3.80%) patients and was most commonly associated with herpes genitalis infection (60.00%).

**Conclusion:** Increased prevalence of viral STDs like herpes genitalis, genital warts and molluscum contagiosum was seen in our study. Widespread use of antibacterial lead to falling trend of bacterial STDs.

### **Key words**

Sexually Transmitted Diseases (STDs), Sexually Transmitted Infections (STIs), Extra Marital Contacts (EMCs), Premarital Contacts (PMCs), Lympho Granuloma Venereum (LGV), Herpes genitalis, Molluscum contagiosum.

### **Introduction**

Sexually transmitted diseases (STDs) are group of infectious diseases caused by viruses, bacteria, fungi, parasites, protozoa or arthropods that are generally acquired by sexual contact. STDs include more than 30 different conditions, among which the most common are gonorrhoea, chlamydial infection, syphilis, trichomoniasis, chancroid, genital herpes, genital warts, human immunodeficiency virus and hepatitis B [1].

The WHO estimates that worldwide more than one million people acquire a sexually transmitted infection every day and 500 million people each year.

Sexually transmitted infections (STIs) constitute a major health problem in the developing countries and pose a serious threat to overall health status of a country. The epidemiological profile of STIs differs from country to country and from one region to another within a country, depending upon demographic, socioeconomic, cultural, environmental and health factors [2-5]. Moreover, the incidence and distribution of these diseases is also influenced by lifestyle and susceptibility of the individual, pathogenicity of the microbes, prevailing therapy and disease control measures [6]. Diagnosis of STIs is quite difficult because of its nonspecific presentation so World Health Organization (WHO) has placed emphasis on syndromic approach. Syndromic approach provides a useful mechanism for STI services to be integrated in every nook and corner of a country. It is cost effective, avoids delay in the diagnosis and treatment of STIs and caters huge population but it has a disadvantage that in many cases it can lead to overtreatment,

thus increasing the economic burden of the STI management programs. [7]. Adolescents, although accounting for only 25% of the sexually active population, are the most affected, as they represent almost 50% of the newly acquired STD cases [8].

From the last few years, it has been seen that incidence and prevalence of both STIs and HIV has increased so this study highlights the patterns and prevalence of various sexually transmitted diseases and HIV seropositivity among patients of STDs.

### **Materials and methods**

**Aim:** To study the pattern and prevalence of sexually transmitted infections and HIV seropositivity among patients presenting in a tertiary care center.

**Study design:** This study was conducted in the department of Dermatology at Shri Guru Ram Rai Institute of Medical and Health Sciences, Shri Mahant Indires Hospital (SGRRIMHS, SMIH), a tertiary care center in Dehradun, Uttarakhand, India, from January 2011 to December 2018.

#### **Study population**

**Inclusion criteria:** All newly diagnosed patients of STD at STD clinic from January 2011 to December 2018 were included.

**Exclusion criteria:** Patients of STD who developed complications like sepsis and required hospitalization were not included in this study.

**Consent:** An informed consent was taken from all the patients.

**Ethical Clearance:** The study was cleared by Institutional Ethical Committee.

**Evaluation:** This study involved retrospective analysis of data collected from outpatient attendance register of STD clinic from January 2011 to December 2018. The study was approved by the Institutional Ethical committee. All the patients were diagnosed on the basis of history, clinical examination and relevant laboratory tests. Data regarding age, sex, occupation, residence, marital status, history of premarital or extramarital sexual contact was taken. All the patients were subjected to routine baseline investigations like CBC, KFT, LFT, Urine routine examination. Specific investigations included Venereal Disease Laboratory Test (VDRL) quantitative and qualitative, gram staining, tzank smear, potassium hydroxide (KOH) mount, wet film examination and HIV testing by ELISA.

## Results

Of the 525 patients, there were 365 males and 160 females. Males outnumbered females with male: female ratio of 2.2:1. Three hundred patients were from rural background and two hundred twenty-five were from urban background. The age of presentation ranged from 5 to 64 years and maximum numbers of patients were in the age group of 25 to 34 years while the children constituted only 0.38%. Unskilled workers (22.28%) and drivers (14.85%), constituted major proportion among males and housewives (20.00%) constituted major proportion among females (**Table – 1**). 418 patients (79.61%) were married and 107 patients (20.38%) were unmarried. History of extramarital /premarital contact was seen among 120(22.8%) of married males (**Table – 2**). After analyzing the collected data, it was found the majority of the cases presented with genital warts 200 (38.09%) followed by molluscum contagiosum 110 (20.95%) and herpes genitalis 103(19.61%). But herpes genitalis (27.39%) was most common STD seen among males and warts (68.75%) among females. Fifty-five patients were found to be positive for syphilis (VDRL reactive). Candidiasis was seen among 22 (4.19%) of patients. HIV seropositivity was seen

among 20 (3.80%) patients and most of them were males (75.00%). HIV was most commonly associated with herpes genitalis infection both in males and females (60.00%). Less prevalence of gonococcal and non-gonococcal urethritis, bacterial vaginosis, chancroid, Lympho Granuloma Venerium (LGV) was seen in our study (**Table - 3, 4**).

**Table – 1:** showing Epidemiological profile of 525 patients.

Feature	No. of patients	%
<b>Sex</b>		
Male	365	69.52
Female	160	30.47
<b>Rural/ Urban distribution</b>		
Rural	300	57.14
Urban	225	42.85
<b>Age distribution (in years)</b>		
5-14	2	0.38
15-24	147	28
25-34	187	35.61
35-44	85	16.19
45-55	64	12.19
>55	40	7.61
<b>Occupation</b>		
Skilled worker	70	13.33
Unskilled worker	117	22.28
Army person	50	9.52
Housewives	105	20
Business man	62	11.80
Service man	43	8.19
Drivers	78	14.85

## Discussion

Total 525 patients were enrolled in our study. Male predominance was seen in our study which is consistent with the previous studies [9]. Low percentage of females does not signify that STIs are less prevalent among females but it may be due to social stigma associated with the disease and early recognition by males. Most the patients were from rural background which signifies that low socioeconomic status influences the outcome of the disease. In our study, majority of cases were in the age group of 25 to 34 years, which is consistent with most other studies [10-12]. Only

0.38% of total patients were children (age less than 14 years) because child sexual abuse is much less in our country than in the western countries.

In our study, 79.61% patients were married as compared to 68.4% in other studies [13]. More number of STDs among married persons is because of social stigma of attending STI clinic by unmarried persons. History of

extramarital/premarital contact was seen among 65.87% patients in the study conducted by Santosh Kr Singh, et al. [14] and only among 22.8% patients in our study and none of the unmarried patients gave history suggesting any kind of sexual exposure, mainly due to fear of getting exposed by medical personal. Heterosexual contact was the commonest type of sexual contact seen in 94% our patients compared to 95.9% by Naryanan, et al. [15].

**Table – 2:** showing Marital status and EMC/ PMC contact.

Marital status	No. of patients	%	No. of patients with extra/ pre-marital contacts (%)
Married	418	79.61	120 (22.8)
Unmarried	107	20.38	-
Total	525	100	120

**Table – 3:** showing Prevalence of different STIs during 8-year study period.

Etiological agent	2011	2012	2013	2014	2015	2016	2017	2018	Total no. of males	Total no. of female	Total no. of patients
Herpes Genitalis	5	8	10	13	15	19	15	18	100	3	103 (19.61%)
Genital Warts	10	9	20	25	30	32	46	28	90	110	200 (38.09%)
Molluscum Contagiosum	10	11	8	12	10	25	14	20	95	15	110 (20.95%)
Syphilis	12	8	10	10	3	2	5	5	48	7	55 (10.47%)
Chancroid	0	2	0	3	0	0	0	0	5	0	5 (0.95%)
LGV	0	0	0	1	00	0	0	0	1	0	1 (0.19%)
Candidiasis	2	5	4	0	3	3	2	3	15	7	22 (4.19%)
Non Gonococcal Urethritis	0	0	0	0	0	0	1	00	1	0	1 (0.95%)
Gonococcal urethritis	2	0	0	3	1	1	1	2	10	0	10 (1.90%)
Bacterial vaginalis	0	3	3	2	2	3	2	3	0	18	18 (3.42%)

**Table – 4:** showing HIV seropositivity among patients having STDs.

Etiological agent	HIV seropositive patients
Herpes genitalis	12 (60.00%)
Genital warts	2 (10.00%)
Molluscum contagiosum	3 (15.00%)
Syphilis	3 (15.00%)

Arora Chetna, et al. [16] in their study found that herpes genitalis (31.8%) was most common STI encountered among males and Talukdar K, et al. [17] found that genital warts (35.70%) was most common among females, similar results were obtained in our study. The study conducted by Mishra, et al. [18] found that genital ulcer was most common among males and discharge was common among females. Similarly higher incidence of herpes genitalis was reported by Parmar, et al. (27.9%) and Kumar, et al. (19.7%) [19, 20] but the study conducted by Manas, et al. [21] found low incidence of herpes infection. Higher incidence of genital warts was found in studies conducted by Kumar, et al. (25.2%), Gupta, et al. (18.11%), and Aggarwal, et al. (19.35%) [22, 23]. Molluscum contagiosum was second most common STDs found in our study which is comparable with previous study conducted by Ray, et al. [24]. Syphilis was the most common bacterial infection observed in our study with the prevalence of 10.4% as compared to 19.4% observed by Vora et al. [25]. HIV seropositivity was seen among 3.8% of patients which is comparable to national average 2.5% for STD clinics as per NACO estimates [26]. The decreasing trend of bacterial STIs could be attributed to the 'Syndromic treatment' of STIs by peripheral health workers and private practitioners along with widespread use of broad-spectrum antibiotics. Moreover, recurrent symptoms of viral STDs prompt these patients to report voluntarily to a higher centre in search of treatment.

## Conclusion

Most of the STIs are asymptomatic and present a large burden of disease and debility so every measure should be made to improve the health knowledge and education among people. Patients have to be counseled about the nature of the disease, its transmission and prevention. Rising trend of viral STDs and falling trend of bacterial STDs should be worth noting. However, syndromic approach provides the opportunity of treating STI without delay in present scenario.

## References

1. WHO. STIs. Available online: [http://www.who.int/topics/sexually\\_transmitted\\_infections/en/](http://www.who.int/topics/sexually_transmitted_infections/en/) (Accessed on 20 January 2015).
2. Khanna N, Pandhi RK, Lakshn Pal S. Changing trends in sexually transmitted diseases in Chandigarh. *Indian J Sex Transm Dis.*, 1996; 17: 79-81.
3. Dallabetta GA, Gerbase AC, Holmes KK. Problems, solutions, and challenges in syndromic management of sexually transmitted diseases. *Sex Transm Infect.*, 1998; 74 Suppl 1: S1-11.
4. Khandpur S, Agarwal S, Kumar S, Sharma VK, Reddy BS. Clinicoepidemiological profile and HIV seropositivity of STD patients. *Indian J Sex Transm Dis.*, 2001; 22: 62-5.
5. Narayanan B. A retrospective study of pattern of sexually transmitted diseases during a ten-year period. *Indian J Dermatol Venereol Leprol.*, 2005; 71: 333-7.
6. Vinod K Sharma. Sexually transmitted diseases and HIV/ STDS. A textbook of Indian Association for the study of sexually transmitted diseases, 2<sup>nd</sup> edition, 2009, p. 6.
7. UNAIDS/WHO. Sexually Transmitted Diseases: Policies and Principles for Prevention and Care. Geneva: UNAIDS, UNAIDS/01.11E; 1999.
8. Siracusano S, Silvertri T, Casotto D. Sexually transmitted diseases: Epidemiological and clinical aspects in adults. *Urologia*, 2014; 81: 200-208.
9. Devi SA, Ventrivchevvel TP, Pise GA, Thappa DM. Pattern of sexually transmitted infections in a tertiary care centre at Puducherry. *Indian J Dermatol.*, 2009; 54: 347-349.
10. Garg BR, Baruah MC, Sait MA. Pattern of sexually transmitted diseases at JIPMER, Pondicherry. *Indian J Sex Transm Dis.*, 1985; 6: 41-3.

11. Chaudary SD, Bhatia KK, Bansal RK, Jain VK. Pattern of sexually transmitted diseases in Rohtak. *Indian J Sex Trans Dis.*, 1988; 9: 4-7.
12. Garg BR, Lal S. Changing pattern of sexually transmitted diseases. *Indian J Sex Transm Dis.*, 1982; 3: 41-2.
13. Nair TG, Asha LK, Leelakumari PV. An epidemiological study of sexually transmitted diseases. *Indian J Dermatol Venereol Leprol.*, 2000; 66: 69-72.
14. Singh SK, Kumar N, Gupta AK, Mohan L, Sushantika, Mohammad A. An epidemiological study of sexually transmitted diseases cases at clinic, Gorakpur. *Int J Res Dermatol.*, 2018; 4: 185-9.
15. Narayanan B. A retrospective study of the pattern of sexually transmitted diseases during a ten-year period. *Indian J Dermatol Venereol leprol.*, 2005; 71: 333-7.
16. Arora C, Mishra B, Malik JS. Study of STD pattern and its associated risk factors – A hospital study. *J Commun Dis.*, 2006; 38: 70-3.
17. Talukdarn K, Chopra A, Mitra D, Mitra B. Disease pattern among sexually transmitted infection clinic attendees. A hospital-based study. *Indian J Dermatol.*, 2018; 63: 502-505.
18. Mishra A, Verma P, Marathe N, Srivastava D. Study of the profile of patients with STDs attending an STD clinic in J.A.H. Gwalior. *Indian J Community Med.*, 2008; 33: 263-4.
19. Kumar B, Handa S, Malhotra S. Changing trends in sexually transmitted disease. *Indian J Sex Trans Dis.*, 1995; 16: 24-7.
20. Parmar J, Raval RC, Bilimoria. Clinical profile of STDs in a civil hospital, Ahmedabad. *Indian J Sex Transm Dis.*, 2004; 25: 13-6.
21. Manas C, Ramadasan P. Profile of sexually transmitted diseases in and around Jabalpur. *Indian J Sex Transm Dis.*, 2004; 25: 13-6.
22. Murugesh SB, Sugareddy, Raghunath. Pattern of sexually transmitted disease at Davengere. *Indian J Sex Trans Dis.*, 2004; 25: 10-2.
23. Thappa DM, Singh S, Singh A. HIV infection and sexually transmitted diseases in a referral STD centre in south India. *Sex Transm Infect.*, 1999; 75: 191.
24. Ray K, Bala M, Gupta SM, et al. Changing trends in sexually transmitted infections at a regional STD centre in north india. *Indian J Med Res.*, 2006; 124: 559-68.
25. Vora R, Anjaneyan G, Doctor C, Guota R. Clinicoepidemiological study of sexually transmitted infections in males at a rural based tertiary care centre. *Indian J Sex Transm Dis.*, 2011; 32(2): 86-9.
26. NACO. Department of AIDS control- Ministry of health and family welfare. Current epidemiological situations of HIV/AIDS. Annual report 2009-2010. Available at: [http://nacoonline.org/upload/AR%20200910/NACO\\_AR\\_English%20corrected.pdf](http://nacoonline.org/upload/AR%20200910/NACO_AR_English%20corrected.pdf). Accessed on: Jan 8<sup>th</sup>, 2016.