

## ORIGINAL ARTICLE

# TRENDS OF DIFFERENT SEXUALLY TRANSMITTED DISEASES IN A STD CLINIC OF A TERTIARY CARE HOSPITAL: COMPARISON BETWEEN VIRAL ORIGIN AND BACTERIAL ORIGIN STDs

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## ABSTRACT

**Background:** STDs (sexually transmitted diseases) are as old as diseases of great antiquity. At particular point of time and place, prevalence of STDs is cumulative result of sexual behaviour, tendency, awareness, interventions and immunological factors among concerned population.

**Aims:** An attempt has made to know the current trend of STDs in the time of global emergence of HIV (the human immunodeficiency virus) by a prospective study.

**Methods and Material:** From patients attending STD clinic of a tertiary care hospital, 150 consecutive patients having clinically diagnosed STDs were included in the study. Along with clinical diagnosis, all the patients' history and blood sample were collected. Sera were tested for the screening for HIV anti body and RPR (rapid plasma reagin) test. Data collected from this study is analysed here.

**Results:** Out of 150 total STD clinic attendants, 23.33% were HIV positive and only 4% were found positive for RPR test. Occurrence of more number of viral STDs (e.g. herpes genitalis, genital warts molluscum contagiosum) is noted as compare to others. The increase of viral origin STDs is observed in both the group-HIV positive group and non-HIV one.

**Conclusions:** Like any other infectious diseases, STDs are changing their trends as time passes. Regular prospective studies should be done to monitor the current changes in STDs and try to evaluate the responsible factors. To pick up the changes at correct time will be helpful for proper implementation of preventive and curative management.

**Key words:** STD, HIV, RPR, Viral, Bacterial

## INTRODUCTION

Sexually transmitted diseases (STDs) are a global health problem of great magnitude. The pattern of STDs differs from country to country and from region to region, especially in large countries such as India. STDs have severe and sometimes deadly consequences. These Diseases add billions of money to the healthcare costs each year.<sup>1</sup> Despite the fact that STDs are extremely widespread, most people remain unaware of the risks and consequences of all but the most prominent STD – HIV. <sup>2</sup> The spread of HIV infection in India is predominantly by heterosexual route and the prevalence of HIV infection among persons suffering from various STDs is on rise.<sup>3</sup>

There are no accurate statistical data on the morbidity and mortality rates due to STD in India as a whole,

although the attendance of patients with STD at the larger hospitals, gives some idea of the situation.<sup>1</sup> While extremely common, STDs are difficult to track. Many people with these infections do not have symptoms and remain undiagnosed. Even diseases that are diagnosed are frequently not reported and counted. These "hidden" epidemics are magnified with each new infection that goes unrecognized and untreated.<sup>2</sup>

In this study, the trend of STDs in STD clinic is presented with the special concern over the viral or bacterial origin of the STD.

## MATERIALS AND METHODS

The present study was conducted at STD clinic of B.J. Medical college and civil hospital Ahmedabad. The study groups comprised of 150 consecutive patients

having clinically diagnosed STD. Participants were examined for various STDs. A standard protocol was used to assess the medical history. Blood specimens were obtained and sera tested for anti HIV antibody using NACO guideline. <sup>4</sup> First ELISA was performed using Recombigen HIV-1/HIV-2 EIA kit (Enzaids by span diagnostic ltd, Surat) and Sera positive by first ELISA were retested by Immunocomb II HIV 1 and 2 and SD BIO HIV-1 /HIV-2 Assay (SD BIO Standard Diagnostics India) for confirmation. The sera were also screened for syphilis by RPR test (Carbogen, tulip diagnostic; Verna Goa) for the detection of anti lipoidal antibodies.

**RESULTS**

Out of 150 patients having STDs, 98 male and 52 female patients were included in the study for detecting a trend of STDs in STD clinic. These 150 patients were also screened for anti HIV antibody and rapid plasma reagin antibody to find out sero-epidemiological trends of HIV and syphilis. Out of 150 patients, 35 (23.33%) and 6 (4%) were positive for anti HIV antibody and rapid plasma reagin antibody respectively (Table 1).

**Table 1: Various STDs distribution among male and female patients**

STDs	Total	Male	Female	Anti HIV Ab positive	RPR Positive
Herpes	65	49	16	12	1
Genital wart	25	18	7	7	1
Molluscum contagiosum	10	3	7	3	0
Balanitis	6	6	---	1	0
Cervicovaginal discharge	15	---	15	4	0
Syphilis	5	5	0	2	2
Chancroid	3	2	1	0	1
Gonorrhoea	3	2	1	2	0
Undiagnosed STD/others	18	13	5	4	1
<b>Total</b>	<b>150</b>	<b>98</b>	<b>52</b>	<b>35</b>	<b>6</b>

Overall 65 (43.33%) cases diagnosed as genital herpes were highest in both sex group.-50% and 30.8% in male and female patients respectively. Among male

patients, other STDs in descending order were genital wart 18 (18.4%), undiagnosed/others STD 13 (13.3%), balanitis 6 (6.1%), syphilis 5 (5.1%) molluscum contagiosum 3 (3.1%), gonorrhoea 2 and chancroid 2 (each 2%). Among female patients, other STDs in descending order were cervico - vaginal discharge 15 (28.8%), genital wart 7 (13.5%), molluscum contagiosum 7 (13.5%), undiagnosed STD 5 (9.6%), gonorrhoea 1 and chancroid 1 (each 1.9%). (Table 1)

**Table 2: STD in HIV positive patients**

STDs in Anti HIV Ab positive	Total	Male	Female
Genital herpes	12	10	2
Genital wart	7	7	0
Molluscum contagiosum	3	0	3
Balanitis	1	1	--
Cervicovaginal discharge	4	--	4
Syphilis	2	2	0
Gonorrhoea	2	1	1
Undiagnosed STD	4	4	0
<b>Total</b>	<b>35</b>	<b>25</b>	<b>10</b>

The Distribution of STDs in HIV antibody positive are shown in Table 2. There is no significance difference between the HIV positive and HIV negative STD clinic patients (for all diseases, chi-square value <3.84, p>0.05). However, there was more cervico vaginal discharge than genital herpes among female group (Table 2).

Though there was not kept any bar for patients' age to reflect the current burden of STDs in the community as a whole, during this study patients encountered were majority of age group (> 95%) were between 15 – 49 years for the both sex.. Very few patients of above 49 years were founded and included in the studies. This data also shows that majority of the disease are presented before the age of 30 year. . (Table 3 and table 4)

**DISCUSSION**

In our study, patients attending STD clinic had shown large number of genital herpes and small number of syphilis and chancroid .Most early studies of STD in developing countries identified syphilis and chancroid as the main causes.

**Table 3: Age wise distribution of STDs among male patients**

Age group	Case	Anti HIV Ab positive	HER*	G.W†	M.C.‡	BAL§	SYP.	GON**	UND††
15-19	4	0	2	1	0	1	0	0	1
20-24	19	2	7	4	2	0	2	1	1
25-29	14	4	11	2	0	0	0	0	1
30-34	17	9	9	3	0	3	1	1	3
35-39	17	4	6	3	0	1	1	0	3
40-44	13	5	7	2	1	1	0	0	3
45-49	9	1	5	1	0	1	1	0	0
>=50	5	0	2	2	0	0	0	0	1
<b>Total</b>	<b>98</b>	<b>25</b>	<b>49</b>	<b>18</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>2</b>	<b>13</b>

**Table 4: Age wise distribution of STDs among female patients**

Age group	Case	Anti HIV Ab positive	HER.*	G.W.†	M.C.‡	CVD.‡‡	GON**	UND††
15-19	4	0	2	1	0	0	0	1
20-24	14	3	6	1	0	6	0	1
25-29	7	2	1	1	2	3	0	0
30-34	12	3	2	2	3	4	1	0
35-39	6	1	2	1	0	1	0	1
40-44	5	1	3	0	1	0	0	1
45-49	4	0	0	1	1	1	0	1
>=50	0	0	0	0	0	0	0	0
<b>Total</b>	<b>52</b>	<b>10</b>	<b>16</b>	<b>7</b>	<b>7</b>	<b>15</b>	<b>1</b>	<b>5</b>

**Table 3 & 4:** \*HER –Herpes; †G.W.-Genital wart; ‡M.C.-Molluscum contagiosum; §BAL- Balanitis; ||SYP-syphilis;\*\*GON-Gonorrhea; ††UND- Undiagnosed STD.

There are few references to genital herpes until studies investigating the etiology of GUD (genital ulcerative disease) in the early 1980s. Clinical cases of genital herpes even merited publication as case reports in the 1970s. <sup>5</sup>In Asia; chancroid was usually the most prevalent cause of GUD in most early studies. However, by the early 1980s genital herpes accounted for 17% of genital ulcers and 11% of purulent genital lesions in Singapore, <sup>6</sup>and 12% in Bangkok. <sup>7</sup> The spread of HIV since the 1980s and subsequent behaviour change have resulted in significant alterations in STI (sexually transmitted infection) epidemic patterns in which the relative importance of genital herpes has increased in many countries. The most noticeable example of this phenomenon has been in Thailand where the incidence of chancroid and syphilis was reduced from nearly 39 000 and 11 855 cases in 1987 to 1990 and 3645 respectively in 1993. In Singapore, genital herpes (72%) is now by far the most common cause of GUD followed by chancroid (16%) and syphilis (3%).<sup>8</sup> In Kuala Lumpur, Malaysia, HSV-2 was identified by culture and immunofluorescence in 19% and *H ducreyi* in 9% of STD clinic at tenders with GUD.<sup>9</sup>A survey of five STD clinics in Papua New Guinea identified genital herpes, diagnosed clinically, as the most common cause of GUD.<sup>10</sup> In a population of HIV positive Africans living in London followed up for a mean of 14 months, 42% developed genital herpetic lesions.<sup>11</sup>In Africa, increased access and availability of HSV-2 antibody tests have confirmed significant prevalence of HSV infection in Africa. Where, since the 1970s, the prevalence of HSV-2 in the general population increased by 30% to levels of 26% in women and 18% in men in 1988–94. Genital herpes is also a significant problem in central and South America. HSV-2 type specific antibodies were detected in 61% of Commercial sex workers in Mexico City, <sup>12</sup> 53% of STI patients in Caminos City, Brazil, <sup>13</sup>

In India, in Chandigarh, a fourfold increase in genital herpes was observed in STD clinic attendees from 1977 to 1990 <sup>14</sup> A more dramatic increase can be observed in the increased prevalence of HSV detected by culture in men with GUD in Durban from 7% in 1984<sup>15</sup> to 10% in 1989 and 40% in 1998.<sup>16</sup> It is not known whether these raised HSV rates are just in HIV positive cases or also in HIV negative cases (which might imply an

overall increase in HSV transmission secondary to the HIV epidemic).<sup>17</sup>retrospective data analysis of different STDs in North Eastern (NE) India during 1995 - 1999., revealed a sharp decline in the incidence of syphilis, chancroid, GONO, whereas a conspicuous upward trend in genital wart.<sup>18</sup>

This study shows that in female, age group 20-34 have more number of patients, It shows that is age of active sexuality and chance of getting STD is high. After this age, numbers of STDs are gradually decreased, this may be due to getting partial immunity against STD After age of 50, not a single case of active STD has been founded during this study, and this is probably not due to immunity but due to decreased sexual activity as age advances.

Trend of STDs in our population from the previous study <sup>20</sup> has been compared with this study Chart 1 and Table 5.

**Table 5: Prevalence of different STDs in an earlier study (2001-2005) and present study**

	Earlier Study	Present Study
HIV	7.34	23.33
STDs		
Herpes	32.37	43.33
Genital wart	10.09	16.67
Molluscum contagiosum	5.11	6.67
Balanitis	1.57	4.00
Cervicovaginal discharge	13.76	10.00
Syphilis	14.29	3.33
Chancroid	9.04	2.00
Gonorrhoea	10.88	2.00
Undiagnosed /others STDs	2.89	12.00

**CONCLUSION**

We know some disease of non-communicable type have shown their secular trends in which their frequency of occurrence among community changes with the time due to some known and unknown reasons. Similarly, history of infectious disease (e.g. leprosy, tuberculosis.) also shows changing pattern. <sup>19</sup>

Therefore, time-to-time studies from the different regions must be done to know the changes and so that an attempt can be made for their proper management. The disease those were found in earlier days of STD clinic has changed their pattern in occurrence. Further studies should be done regarding the strain of microorganism causing the diseases to know the changes taking place at microorganism level.

Some conclusions have been put forward from this study.

- 1) Decrease in syphilis prevalence (as lower rate of syphilis found clinically as well as serologically by RPR) as compared to earlier studies.
- 2) Trends of STD are more toward viral origin (e.g. genital herpes, warts or molluscum contagiosum) as compare to bacterial origin (e.g. syphilis, chancroid). This is probably due to the fact that most of the bacterial and treponemal STDs are treated at the primary level by virtue of large number of currently available antibiotics and these organisms are responding to antibiotics.
- 3) There is no statically significance difference in any type of STD among patients of HIV positive and HIV negative groups. This suggest that majority of STDs' microorganisms are wide spreaded in community asymptotically. Non-HIV group has been also encountered with them. so effective barrier contraceptive measures are very much in need today. Moreover, increased rate of self -reporting by patients in the propaganda era could have also played a role in the observed trend.

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