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Clinico-epidemiological profile of patients with sexually transmitted infections at a tertiary care centre

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Abstract

Background: Sexually Transmitted Infections (STIs) are one of the most disastrous events of human health causing huge psychosocial and economic morbidity in young and sexually active adults. Population explosion, migration from rural to urban areas, commercial sex and lack of awareness has all led to enormous spread of STIs in the community. Their epidemiological profile varies from country to country and from one region to another within a country. This study highlights the pattern of STIs in patients as seen at our hospital for a period of 2 years.

Aim: To study the clinico-epidemiological profile of the patients with Sexually Transmitted Infections.

Methods and Material: This study was conducted at Dept. of Dermatology, Venereology and Leprosy at PDU Govt. Medical College and Hospital, Rajkot, Gujarat. This included 300 consecutive symptomatic STI patients presenting to the clinic between November-2013 to October-2015. Diseases were diagnosed on the basis of detailed history, clinical examination and relevant investigations.

Results: Most common age group affected was 21-30 years (39%). Incidence of STI was high among Males (75.33%). Married persons were more commonly affected (55.33%) as compared to unmarried. Herpes Genitalis (42.33%) was the most common STI followed by Genital warts (27.33%), Genital Molluscum Contagiosum (16.67%). The overall sero-prevalence of HIV among the STI patients was 19% and Herpes Genitalis was most commonly associated with sero-positivity.

Conclusion: Study concluded that bacterial STIs are having declining trend and viral STIs are having upward trend. The persistent and recurrent nature of viral infections is responsible for their increasing trend in the current STI scenario.

Keywords: Sexually transmitted infections, pattern of STI, viral STIs, bacterial STIs

Introduction

Sexually transmitted infections (STIs) are defined as constellation of infections and syndromes that are epidemiologically heterogeneous but all of which are almost always or at least often transmitted sexually^[1]. Most of the STIs are prevalent in India and constitute one of the major public health problems. STIs are diseases with tremendous health and economic consequences. The profile of the various diseases is variable, depending upon the socio-economic, cultural, geographic and environmental factors prevalent in different parts of the country. However, because of lack of adequate laboratory infrastructure in the country in most of health care setup, data available from all the regions are usually based on syndromic diagnosis. Moreover, the interest in STIs and their management have increased tremendously because of their proven role in facilitation of HIV infection, which, in turn, also increases susceptibility to other STIs^[2]. The emergence of human immunodeficiency virus (HIV) as a global pandemic has focused greater attention on the control of these diseases as they play an important role in the acquisition and transmission of HIV. Sexually transmitted diseases constitute a major public health problem throughout the world and their importance has been magnified with the emergence of Human immunodeficiency virus (HIV) infection as they play important role in acquisition and transmission of HIV. STDs are commonly more active than other prevailing infections in the community amongst the sexually active population and the epidemiological profile is very distinct and more dynamic than other diseases. In India, there is marked heterogeneity in the epidemiology of STD in different parts of the country. A proper knowledge of the pattern of STIs in different geographical regions is necessary for evolving proper control measures.

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Therefore, we planned this study to understand the pattern, clinical profile and trend of STIs with special concern on origin of STI (viral vs bacterial) [3].

Methods and Material

The present study is a prospective, open, observational study, carried out in the Department of Dermatology, Venereology and Leprosy at PDU Government Medical College and Hospital, Rajkot, Gujarat during a period of 2 years from November 2013 to October 2015. Subjects were clinically evaluated for STIs. All the symptomatic sexually transmitted infection patients attending the skin out patients department were included in this study. Information collected included routine clinical history, patient's age, sex, occupation, caste, duration; site and size of the lesion, number of lesions, spouse history, history of circumcision in males and treatment history (if any). All the patients were informed regarding the nature, course and prognosis of the disease. History of sexual exposure was elaborately taken in all the patients. All the details pertaining to type of sexual behaviour, number of sexual exposures, number of sexual partners, dhistory of /presence of lesions in sexual partners, type of exposures, use of barrier protection while having sexual exposure, history of sexual exposure with commercial sex workers, duration since last sexual exposure, and sexual orientations were noted. Chief complaints related to genitals, skin, its duration and associated complications were noted. Thorough general cutaneous examination and local examination including genitals, perianal region and oral cavity was done in each patient. Inguinal, femoral, epitrochlear, cervical and axillary lymph nodes were palpated and corresponding findings were recorded. Relevant laboratory investigations like Rapid Plasma Reagent (RPR) test and HIV ELISA test were carried out in all the patients attending the STI clinics. Gram's Stain and Giemsa Stain were done for the patients presenting with ulcers. Gram's Stain, Giemsa Stain, KOH Smear, Wet mount, Whiff's Test were done for all the patients presenting with urethral and vaginal discharge. Biopsy for the Hematoxylin & Eosin stain was done for the patient presenting with cutaneous lesions for clinicopathological correlation. Each and every patient were informed and educated about the disease, its management and prognosis. All patients were counselled about risk involved in unprotected sexual intercourse, risk of HIV transmission in the presence of other STIs, importance of treatment of partner and condom use. Partner identification and condom promotion were also done. Treatment was provided to the patient as per NACO's guidelines.

Results

During the two year study, 300 patients were diagnosed as having STIs. In the present study, most of the STI cases were in the 21-30 years age group accounting for 39%, followed by 31-40 years age group accounting for 34%. Males were more commonly affected (75.33%) with STI

than females (24.37%), with male to female ratio of 3:1. In this study, 55.33% patients were married. [Table 1] 82.33% patients of STI were of lower socio-economic class and 65% of patients had upto primary level of education only. Among males, labourers were more commonly affected (29.64%), followed by driver (27.43%). [Table 1] Maximum patients had heterosexual behaviour (90.66%), followed by homosexual (6%) and bisexual (3.34%). Unmarried patients having sexual exposures (71.55%) outnumber the married patients having extramarital sexual exposure history. Males (73.45%) outnumber females (28.38%) in having a positive sexual exposure history. Polygamic sexual exposure history was more commonly associated with males attending the STI clinics (57.23%) as compared to females (52.38%). Among all the patients, 64.17% of the patients had multiple times sexual exposure history which included unmarried patients and married patients having extramarital sexual exposures. About 68.45% patients had occasional use of condoms for contraception while having sex. Among male patients (including both married and unmarried) only 39.15% of patients were having sexual exposure with commercial sex workers while 60.85% were not having such history. [Table 2]

Among all male patients, 77% of the male patients attending the STI clinic were not circumscised. Among all the patients, only 16.33% of patients had history of STI in past while 83.67% were not having such history. [Table 3]

Herpes genitalis was the most common STI among the patients with 42.33%, followed by Genital warts with 27.33%, Genital molluscum contagiosum with 16.67%. [Table 4]

In the present study, 7 patients had similar disease in the partner and they were also investigated and given the same treatment accordingly, while 8 patients partner had a history of similar lesions in the past.

Maximum S.RPR reactivity of low titre 1:2 or 1:4 was seen among 4 patients of Herpes Genitalis which became non-reactive in follow up and high titre >1:8 with TPHA positivity was seen among the patients with Syphilis only.

Viral Infections including Herpes Genitalis, Genital warts and Genital Molluscum Contagiosum were the most common STI accounted for a total of 86.33% of all the cases.

HIV sero-positivity was seen in 19% of patients with STI. It was most commonly associated with Herpes Genitalis 12%, followed by Genital warts 4%, followed by Genital molluscum contagiosum 1%. [Table 3]

Among all the HIV sero-positive patients, CD4 count <200 cells/cumm was seen most commonly in Genital Molluscum Contagiosum (50%), followed by Genital Warts (33.33%), Herpes Genitalis (16.66%). and CD4 count was >200 cells/cumm mostly in Herpes Genitalis (68.62%), followed by Genital Warts (19.6%). In this study among all (n=57; 19% of the total) HIV sero-positive patients, 52 patients were on Anti Retroviral Therapy.

Table 1: Demographic profile of the STI patients

Epidemiologic Profile	Variable	Percentage of patients (%) (n = 300)	
Sex	Male	75.33	
	Female	24.67	
Marital status	Married	55.33	
	Unmarried	36.34	
	Widow/alone	4	
	Divorced	1.66	
	Remarried	2	
	Staying away	0.67	
	Socio-economic status	Lower	82.33
Middle		15.67	
Upper		2.00	
Occupation		Males	Females
	Labourer	29.64	8.1
	Farmer	15.92	1.35
	Driver	27.43	-
	Skilled workers	4.86	2.7
	Service class	9.29	2.7
	Students	10.18	1.35
	Unemployed	2.65	20.27
	Housewife	-	63.51

Table 2: Sexual Exposure Profile

Sexual Profile	Variable	Percentage of patients (%)
Sexual Behaviour (n = 300)	Heterosexual	90.66
	Homosexual	6
	Bisexual	3.34
Sexual Exposure History (n = 300)	Present	62.34
	Absent	37.66
Positive Sexual Exposure History	Males (n = 226)	73.45
	Females (n = 74)	28.38
Number of sexual partners among exposed (n = 187)	Monogamic	43.32
	Polygamic	56.68
Frequency of sexual exposure among exposed patients (n = 187)	Single time	35.83
	Multiple time	64.17
Use of barrier contraception among exposed patients (n=187)	Never	26.20
	Occasional	68.45
	Regular	5.35
Exposure with Commercial sex worker among males (n = 166)	Present	39.15
	Absent	60.85

Table 3: Risk factor profile

Variable	Percentage of patients (%)	
Circumcision (n = 226)	Done	23
	Not done	77
History of STI in past (n = 300)	Present	16.33
	Absent	83.67
HIV status	Sero-positive	19
	Sero-negative	81

Table 4: Prevalence of different STIs

STI	Male	Female	Total	Percentage (%)
Herpes genitalis	109	18	127	42.33
Genital warts	59	23	82	27.33
Genital molluscum contagiosum	37	13	50	16.67
Primary syphilis	3	0	3	1
Secondary syphilis	2	0	2	0.67
Gonorrhoea	3	0	3	1
Non-gonococcal urethritis	0	0	0	0
Granuloma inguinale	1	0	1	0.33
Chancroid	0	0	0	0
Lymphogranuloma venereum	0	0	0	0
Balanoposthitis (M) / balanitis (M) / candidiasis (F)	7	8	15	5
Reiter's disease	1	0	1	0.33

Trichomonas vaginitis	0	5	5	1.67
Bacterial vaginosis	0	6	6	2
Mixed VD	4	1	5	1.67
Total	226	74	300	100

Discussion

The numbers of new STI cases show a gradual decline overall, a common observation in various government health facilities [2, 4, 5, 6] which could be attributed to the better diagnostic and management facilities by active NACO intervention and increased awareness among the people about the STIs.

In our study, 39% patients belonged to the 21-30 years age group. 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 [6]. This is also the predominant age group observed to be having STI in other such Indian studies [6-11].

Males were more commonly affected (75.33%) with male to female ratio of 3:1 which is comparable to study done by Devi *et al.* [7] in which males (66.67%) were more commonly affected with male to female ratio of 2:1. Fewer females attend the STI clinics because of social stigma attached with disease, gender bias, lack of decision making power and financial constraints [7]. [Table 1]

In the present study, 55.33% patients were married as compared to a study done by Kavina *et al.* [12]. This indicates that married persons get indulged in extramarital sexual activity and acquire STI from there. STI being higher in married individuals further underlines the importance of contact tracing, counselling, and prompt management of the partners. [Table 1]

People belonging to lower socio-economic class (82.33%) were most commonly affected with STI as comparable to Nayyar *et al.* [13] study, 83.34%. This indicates that knowledge of the modes of transmission of STI was deficient among the patients belonging to lower socioeconomic class. [Table 1]

Among males, labourers were most commonly affected, followed by drivers. [Table 1] Drivers, construction labourers and other labourers are required to stay away from their families for long period and get involved in promiscuous behaviour. This implies that the drivers and labourers are working as a link population and spreading the disease in general population. The females are at a mercy of their counterparts and are silent sufferers as compared to males.

Among all patients, 90.66% patients were having heterosexual behaviour comparable to Vora *et al.* study [6] 97%, Narayan *et al.* study [4] 95.9% and Devi *et al.* study [7] 89.6%. [Table 2] Most of the people hide their sexual history in front of the doctor and such kind of behaviour is most commonly seen amongst homosexual individuals. Proper counselling and developing a good rapport with the patient can aid in eliciting the exposure history of the STI patients because eliciting the exposure history is very important for contact tracing, diagnosing and giving treatment to the patients.

Overall among the patients with positive sexual history, most of the patients had a history of polygamic sexual partners as compared to a study done by Nayyar *et al.* [13]. [Table 2] Sexual exposure with polygamic partners leads to

increased chance of acquiring the STI's.

The barrier contraception was used occasionally by 68.45% of the patients while having sex as comparable to Nayyar *et al.* study [13], 83.33%. [Table 2] The use of barrier contraception should be encouraged because it is easily available, cost effective and easy to use thing at the time of sexual exposure. Inconsistent and improper use of the barrier contraception may lead to acquisition of the STI which would have been prevented by just proper and regular use.

In the present study, most of the male patients were not circumcised, as compared to a study done by Nayyar *et al.* [13]. [Table 3] It is claimed that in males penile foreskin provides a portal of entry for pathogens of STI, as it is more susceptible to trauma during intercourse. The microenvironment provided by the occluded area of the preputial sac between the unretracted foreskin and the glans penis may be favourable for the survival of the micro-organisms. All these factors support the role of circumcision in prevention of STI [13]. And this is the reason behind low incidence of STI among the Jews and Muslims as they undergo circumcision in infantile and childhood period respectively.

In the present study, Herpes Genitalis was the most common STI followed by Genital Warts and Genital Molluscum Contagiosum which is comparable to Kavina *et al.* study [12], Devi *et al.* study [7] and Jain *et al.* study [9]. [Table 4] Because of recurrent and unremitting symptoms of the Viral STI's, these patients are prompted to report to a higher center. The use of over the counter antibiotics and syndromic management at primary level have resulted in declined incidence of the bacterial STIs. Marked decline in bacterial STIs, resulting in an apparent increase of the viral STIs, has been reported from various Indian studies [6, 7, 9, 10, 11].

S.RPR reactivity of low titre was seen with 4 patients of Herpes Genitalis which became nonreactive in follow up while high titre >1:8 was seen with syphilis only. The non syphilitic patients having reactive S.RPR might be incubating for the syphilis or the result may be as false positive test.

HIV sero-positivity was seen in 19% of patients in accordance with Nayyar *et al.* study [13], 22.22%. [Table 3] Sexually Transmitted Infections act as a co-factor in HIV transmission by increasing susceptibility to HIV.

Common STI associated with HIV was herpes genitalis, consistent with Devi *et al.* study [7] and Kavina *et al.* [12] study.

Conclusion

Viral STIs are increasing in incidence as compared to the bacterial STIs. The rural population should be made aware of the different types of STI, their modes of acquisition, risk factors for acquisition, preventive measures etc. Primary health centre medical officers should be adequately trained periodically regarding the syndromic management of the STI and continuously keep scrutiny for the referral of the patient to the higher center if needed. The education should be emphasized as low education leads indirectly to doing a

job that is considered as risk factors for the acquisition of STIs. Barrier contraception should be promoted as it is easy to use even by the village people. Steps should be taken for to find out some preventive approaches for the Viral STIs by the government.

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