A Five Year Retrospective Study of Pattern of Sexually Transmitted Diseases in a Tertiary Care Hospital in North Kerala

Rajiv S[1], Hashba B P[2]

ABSTRACT

Introduction: Knowledge about the changing pattern of sexually transmitted diseases (STDs) in different geographical regions is necessary for evolving proper strategies for control of these diseases. Aim: To study the changing pattern of STDs during a five-year period from 2012-2016 among patients who attended the Department of Dermatology, Venereology and Leprosy, Pariyaram Medical College, Kerala.

Material and Methods: Data of patients with STDs who attended our department during the 5 year period were analysed.

Results: There were 240 patients with male to female ratio of 1.4:1. Marital contact alone was reported in 88.8% females. All the heterosexuals and bisexuals were males. Genital ulcer diseases (68.3%) were the most common STD, of which 51.2% were latent syphilis, followed by condyloma acuminata (24.58%). Of the HIV screened patients 3.01% were found to be positive. The pattern of STDs showed minor variation during the five year period with decline in herpes genitalis and increase in syphilis cases.

Conclusions: The majority of the patients had genital ulcer diseases. Spouses were the most common source of infection for female patients. There was increase in syphilis cases and decline in herpes genitalis during the study period.

Keywords: Changing Pattern, North Kerala, Sexually Transmitted Diseases

INTRODUCTION

Sexually transmitted diseases (STDs) constitute a major public health problem worldwide, for both developing and developed countries. In developing countries STDs are ranked among the top five diseases for which adults seek health care services.[1] However, changes in social behavior have altered the pattern of STDs with certain STDs getting stabilized and certain others showing downhill trend. After the advent of human immunodeficiency virus (HIV) and AIDS, the impact and importance of STDs have again come to the forefront.[2] A thorough understanding of the clinical profile and pattern of various STDs prevailing in different regions is necessary for proper planning and implementation of STD control strategies.[3] The present study highlights the pattern of STDs in patients who attended the Department of Dermatology, Venereology and Leprosy, Pariyaram Medical College, Kannur, Kerala during the period 2012-2016.

MATERIAL AND METHODS

A retrospective chart review of the data collected from the STD register of 240 patients who had attended the outpatient department of the Department of Dermatology, Leprology and Venereology, Pariyaram Medical College, Pariyaram, Kannur, Kerala for various complaints during the 5 year period from 2012 to 2016 was carried out. In this study all the patients who had either clinical evidence of STIs or serological evidence of STIs were included. Patients with problems like non-venereal genital dermatoses like pearly penile papules and who did not have any evidence of STIs were excluded from the study. Also those patient records with missing data were excluded. All patients were clinically evaluated by qualified venereologists, details of the epidemiological features i.e., age, marital status, sexual orientation, nature of sexual contact were recorded and diagnosis were made based on the clinical history, examination and available lab tests. Gram stain, wet mount and KOH mount was done for vaginal discharge, gram stain for urethral discharge and for genital ulcer Tzanck smear and Gram stain were done. Dark field examination was not done due to non-availability. HIV screening was done in 199 patients after counseling. Partner screening was done for 25 patients.

STATISTICAL ANALYSIS

The data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 17 software. Descriptive statistical tools like mean and standard deviation for continuous data, frequencies and percentage for categorical data, and inferential statistical tools like t-test for continuous data and chi-square test for categorical data were used. p value of less than 0.05 was considered significant.

RESULTS

The total number of cases was 240 of which 141 were males (58.75%) and 99 were females (41.25%). The total number of cases during each year remained more or less same during the study period. During the first year of the study, the number of cases was 52 while in the fifth year it was 47. Males outnumbered females in a ratio of 1.4:1, but the ratio varied from year to year. The mean age of patients in the study population was 41.8 years. The mean age was 43.6 years for males and 32.6 years for females.

Of the 240 patients, 206 (85.83%) were married, 18 (7.5%) were unmarried, 6 (2.5%) were widowed, 1(0.42%) was divorced, 3 (1.25%) were separated and 6 (2.5%) were divorced and remarried. In this study majority of males (88.6%) and females (81.8%) were married. Of those unmarried, 83.3% were males. Out of the 240 patients, majority were heterosexuals (92.5%). Only 6(2.5%) were homosexuals and 12(5.0%) were bisexuals.

[1]Professor, [2]Junior Resident, Department of Dermatology, Academy of Medical Sciences, Pariyaram, Kannur, Kerala, India

Corresponding author: Dr Rajiv S, Department of Dermatology, Academy of Medical Sciences, Pariyaram, Kannur, Kerala. Pin 670503, India

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Year	2012		2013		2014		2015		2016	
No.of cases	52		47		53		41		47	
Sex distribution	M	F	M	F	M	F	M	F	M	F
	28	24	23	24	34	19	24	17	32	15
Sex ratio	1.17:1		0.96:1		1.79:1		1.41:1		2.13:1	
Average age (years)	44.64	31.42	45.48	34.58	46.24	31.16	38.88	35.71	42.53	30.07
Marital status										
Unmarried	3	0	0	0	2	1	5	2	5	0
Married	24	22	23	21	32	14	19	11	27	13
Widow	0	1	0	1	0	0	0	3	0	1
Divorced	0	0	0	1	0	0	0	0	0	0
Separated	1	0	0	1	0	0	0	1	0	0
Polygamous	0	0	0	0	0	0	0	0	0	0
Divorced and remarried	0	1	0	0	0	4	0	0	0	1
Sexual orientation										
Heterosexual	22	24	23	24	31	19	19	17	28	15
Homosexual	1	0	0	0	1	0	2	0	2	0
Bisexual	5	0	0	0	2	0	3	0	2	0
Nature of sexual contact										
Premarital (PMC) alone	3	0	0	0	2	1	5	2	6	0
Marital (MC) alone	6	24	11	20	11	16	7	13	11	15
Extramarital (EMC) alone	1	0	0	2	0	0	0	0	0	0
PMC+MC	4	0	3	0	12	0	4	0	10	0
PMC+MC+EMC	1	0	1	0	2	0	0	0	2	0
MC+EMC	13	0	8	2	7	2	8	2	3	0

Table-1: Age, sex, marital status, sexual orientation, nature of sexual contact (n=240)

Disease	Number of cases	Percentage
GUDs	164	68.33%
Gonorrhea	1	0.41%
NGU	3	1.25%
Condyloma acuminata	59	24.58%
Others	23	9.58%
Mixed infection	17	7.08%

Table-2: Pattern of STDs

All the homosexuals and bisexuals were males. The pattern was fairly constant throughout the five year period.

A history of premarital contact alone was obtained from 19 patients, of whom 13 were males and 3 females, marital contact alone from 134 of which 46 were males and 88 were females, extramarital contact alone from 3 patients (1 male and 2 females). History of both premarital and marital contact was obtained from 33 male patients (13.75%), while 45 (18.75%) had marital and extramarital contact (39 males and 6 females). Of the patients with premarital and extramarital exposure majority were males during the five year period. There was no much year wise variation in the nature of sexual contact during the study period.

Most common STD found in this study was genital ulcer diseases (GUDs) which accounted for 164 cases, out of which 84 were latent syphilis. The second most common was condyloma acuminata which constituted 59 cases. There were 17 cases of candidiasis (9 were co infections with other STDs), 3 cases each of bacterial vaginosis, non gonococcal urethritis (NGU) and genital molluscum contagiosum, and 1 case of gonorrhea (Table 1).

Among patients with GUDs, 92 (38.3%) had syphilis, 75 (31.25%) had herpes genitalis and 5 (2.08%) had chancroid. Latent syphilis was the most common type of syphilis found in this study, accounted for 84 cases. 4 patients had asymptomatic neurosyphilis, 3 had primary chancre and 1 had secondary syphilis.

17 patients had mixed infections of which 1 patient had mixed chancre, 3 each had co-infection with syphilis- herpes genitalis, syphilis-condyoma acuminata and condyoma acuminata-candidiasis, 4 had herpes genitalis-candidiasis co-infection, 1 each had syphilis-candidiasis, genital molluscum contagiosum-candidiasis and herpes genitalis- condyoma acuminata co-infections.

HIV screening was done in 199 patients of whom 6 were detected to be positive. Among those found HIV positive 5 were males and 1 was female. 4 of these patients were married, 1 was unmarried and 1 was widowed. Associated diseases were latent syphilis in 2 patients, herpes genitalis in 2 patients and candidiasis in 2 patients but none were statistically significant. No significant association was found between GUDs and HIV infection (p=0.99) (tables 2 and 3).

Partner screening of 25 patients were done and detected same disease in the spouse of 22 patients of which majority had herpes genitalis followed by condyloma acuminata. The total number of STDs showed minor variation in the pattern from 2012-2016, with increase in syphilis cases and decline in herpes genitalis (figure 1).

DISCUSSION

In this study, males outnumbered females in a ratio of 1.4:1 though there was variation in the male to female ratio from year to year. This pattern of male preponderance was maintained yearly except during the second year where there was marginal increase in the female patients compared to males. Similar pattern of male preponderance was reported in other studies too.[1-4] The average age of the study population was 41.8 years

GUDs	Number of cases	Percentage (GUDs)	Percentage (Total)
Syphilis	92	56.1%	38.33%
Primary chancre	3	1.8%	1.25%
Secondary syphilis	1	0.6%	0.41%
Asymptomatic neurosyphilis	4	2.4%	1.66%
Latent syphilis	84	51.2%	35%
Herpes genitalis	75	45.7%	31.25%
Chancroid	5	3.04%	2.08%

Table-3: Pattern of GUDs

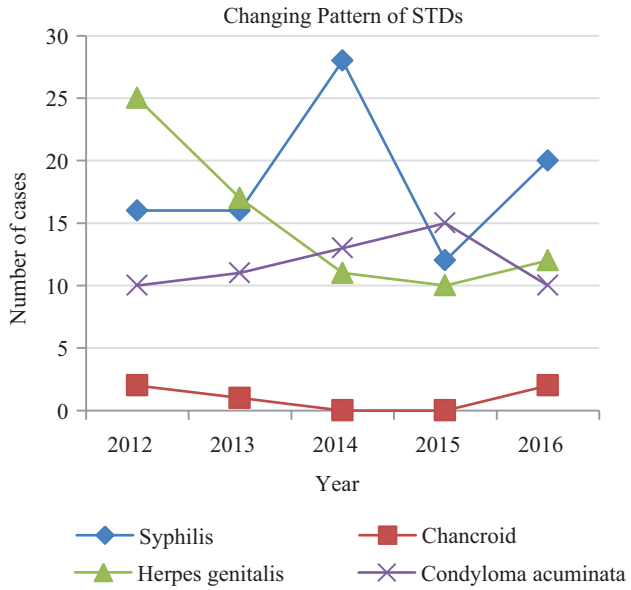

Figure-1: Changing pattern on STDs from 2012-2016

with females mostly in their 3rd decade and males in their 4th decade. The average age of our study population was found higher compared to a study conducted in South Kerala by Narayanan et al.[3] There was only little variation in the age profile of the patients during the study period.

The majority of the males and females in this study were married. 7.5% of the study population was unmarried of which 83.3% were males. Marital contact alone was the nature of sexual contact in majority of the females (88.8%), while only 32.6% males gave this history. This shows that the major source of infection for female patients was their spouse while the major source for males was premarital and extramarital exposures. Similar finding was reported in a study by Narayanan B.[3] The pattern of the nature of sexual contact was more or less similar during the study period. In this study, we found that all the homosexuals and bisexuals were males.

The most common STD was genital ulcer diseases (GUDs) which constituted 68.3% of the total cases. Of the GUDs, syphilis was most common, accounting for 56.1% of GUDs followed by herpes genitalis (45.7%) and chancroid (3.04%). Latent syphilis was the most common type of syphilis found in this study which is in concordance with a retrospective study from Thiruvananthapuram (1995-2005).[5] Narayanan B also reported syphilis as the most common STD, however the commonest type of syphilis was secondary syphilis.[3] There was only 1 case of secondary syphilis found in this study. Herpes genitalis was the most common STD reported by Sarkar et al in their study conducted in 2011 in Eastern India[4] and by Choudhry et al in their study from Delhi in 2008.[6] After GUDs, condyloma acuminata was the next common STD found in our study accounting for 24.58% of the total cases. In a study by Devi et al genital warts were the most common non-ulcerative STD.[7] Genital herpes and condyloma acuminata were the two most common infections reported from a study from North Kerala (study period: 2012-2013).[8] Candidiasis accounted for 17 cases most of which were co-infections with other STDs. Gonorrhoea and NGU were found to be rare, and there were no cases of lymphogranuloma venereum and donovanosis reported during our study period, which could be due to the use of over-the-counter antibiotics, or due to syndromic management which caused the actual decline of these bacterial STDs.

HIV screening was done in 82.9% of the study population, 3.01% were found to be positive. Associated diseases were latent syphilis in 2 patients, herpes genitalis in 2 patients and candidiasis in 2 patients but none were statistically significant. In a study from South Kerala, 7.1% were found to be HIV positive with syphilis being the most common associated STD.[3] Increased association of HIV infection and GUDs has been reported in various studies.[3,8-11]

Partner screening of 25 patients were done and detected same disease in the spouse of 22 patients of which the most common was herpes genitalis followed by condyloma acuminata.

In our study the total number of STDs showed minor variation in the pattern from 2012-2016, with increase in the syphilis cases and decline in herpes genitalis cases. Declining trend of STDs especially bacterial STDs were found in studies by Narayanan B and Sayal et al. which was contrary to that found in our study.[3,11] The increased number of latent syphilis cases in our study could be attributed to the compulsory screening for VDRL and TPHA for visa requirements to Middle East countries and also screening prior to major surgeries. Also widespread use of penicillins and cephalosporins for common infections render a partial cure in early syphilis and these patients may remain as late latent syphilis cases. The study population in our study was 240 during the five year period (2012-2016) which was very small compared to other studies. Whether this is due to actual decrease in the incidence of STDs or due to other factors is uncertain. Syndromic management and increased availability of treatment facilities for STDs at peripheral centers might have contributed to decline in the number of patients with STDs approaching higher centers.

CONCLUSION

The majority of the patients had genital ulcer diseases. Spouses were the most common source of infection for female patients. There was increase in syphilis cases and decline in herpes genitalis during the study period.

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