

PATTERN OF SEXUALLY TRANSMITTED INFECTIONS AMONG MEN HAVING SEX WITH MEN ATTENDING STI CLINIC IN A RURAL TERTIARY CARE CENTRE IN SOUTH INDIA

Dermatology

Balachandar. J	Assistant Professor, Dept of Dermatology, Venereology & Leprosy, Govt Vellore Medical College, Vellore
Vasanthamoorthy. R*	Associate Professor, Dept of Dermatology, venereology & leprosy, Govt. Thiruvannamalai Medical College, Thiruvannamalai *Corresponding Author
Dharmambal. C	Associate Professor, Dept of Dermatology, Venereology & Leprosy, Govt Vellore Medical College, Vellore

ABSTRACT

Background: In this rapidly spreading infectious disease era, the study of sexually transmitted infections among the high risk group population especially Men having sex with Men (Viraj v patel et al 2012) needs special attention as it pave the way for realising the social and psychological behavior of the individual and society. But the data on the socio-psycho behaviors and STIs among MSM in India were meagre and is the need of hour to plan the strategies of STI/HIV prevention (AIDS Care. 2013)

Aims and objective: To study the pattern and epidemiological aspects of Sexually transmitted infections in men having sex with men (MSM) attending STI clinic in Govt Vellore medical college, Vellore, Tamilnadu.

Materials and methods: Retrospective observational study of pts who were registered at STI clinic, Govt. Vellore Medical College, Vellore between January 2017 and Dec 2018. Inclusion criteria: All male patients with history of sexual contact with men (Men having sex with Men) attended our opd were included. Exclusion criteria: Female patients and Male patients with history of sexual contact exclusively with females were excluded

Results: 127 pts were identified to be Men having sex with Men. 55% were of rural and 45% were of urban origin. Predominant age group was 20 to 40 yrs. Viral infections seem to be the predominant STI in MSM

Conclusion: There is a high prevalence of STIs among men having sex with men which is a very important factor for STI/HIV transmission in society. HIV and anogenital warts were found to be the most common Viral STIs among MSM

KEYWORDS

STIs, HIV, Men having sex with Men, sexual contact, transmission

Men having sex with Men are largely invisible and marginalized, high risk behavior group who plays a major role in the silent spread of sexually transmitted infections including HIV (Steven M Goodreau et al). It has been estimated that a substantial number of Men in India have same sex/bisexual behavior. Knowing the pattern of sexual transmitted infections among MSM will lead to better programmatic implementation of preventive measures to curtail the spread of STI/HIV. In this study, efforts have been made to assess the pattern of STIs among MSM as well as to document their sexual behavior, who attended the out patient STD clinic of Govt. Vellore Medical college Hospital, Vellore from Jan 01 2017 to 31 Dec 2018.

OBJECTIVES OF THE STUDY

1. To study the pattern of sexually transmitted infection among high risk group (MSM) attending a STD referral centre
2. To study the prevalence of HIV infection in MSM.
3. To study the Age wise distribution of STIs in MSM.

Materials And Methods

Study Design

Retrospective observational study

Sample

The study population composed of 127 patients who attended our OPD with history of homosexual and bisexual behavior, who were registered during the period from 1st January 2017 to 31st December 2018 in the Govt. Vellore medical college, Vellore

Methods

The study patients' card were analyzed for their presenting complaints, sexual history, past history of venereal diseases and other systemic illnesses and treatment taken. All the patients had undergone a complete physical and genital examination. All those patients were clinically analyzed for the genital manifestation entered in their card and supported by laboratory diagnosis.

Screening for sexually transmitted diseases were done. Serological tests for syphilis including blood VDRL, TPHA and card test for HIV performed were analyzed.

In the case of genital ulcers, the following tests were done.

1. Dark ground examination for Treponema pallidum
2. Gram's stain for Hemophilus ducreyi and Candida
3. Tissue smear and Leishman stain for Klebsiella granulomatis.
4. Tzanck test for Giant multinucleated epithelial cells.

In the case of genital discharge, the following tests were done.

1. Gram's stain to identify Neisseria gonorrhoeae.
2. Wet film for Trichomonas vaginalis
3. 10% potassium hydroxide preparation for Candida albicans

In addition the examination of urine, culture of Neisseria gonorrhoeae from specimens of urethral discharge and urine were done.

In case of genital growth, histopathological examination of biopsy specimen was done for appropriate cases. Pus and discharge from ulcers were subjected to culture and sensitivity in needed cases. Routine baseline laboratory analysis including complete blood count, renal function tests, liver function tests, random blood sugar, chest X-ray, ultrasonogram abdomen were done for needed patients.

In needed symptomatic patients, opinion from concerned specialists like dermatology, dental, ophthalmology, chest clinic, cardiology, neurology and gastroenterology were obtained. They were offered standard syndromic management as per NACO guidelines.

RESULTS

Total number of patients attended our OPD during the period of study: **14178**

Patients with MSM behavior: **127**

1) Age Group

Table 1

Age	Homosexual	Bisexual	Total	Percentage
10-20	9	0	9	7.1
21-30	76	11	87	68.5
31-40	14	3	17	13.4
41-50	4	9	13	10.2
>50	1	0	1	0.8
Total	104	23	127	100.00%

Most patients in our study who had high risk behavior belonged to sexually active age group. [68.5%]

2) Domicile

Table 2

Place	Homosexual	Bisexual	Total	Percentage
Rural	58	12	70	55.12
Urban	46	11	57	44.88
Total	104	23	127	100%

Patients from rural areas around vellore outnumbered (55.12%) when compared to those who came from vellore (44.88%)

3) Educational Status

Table 3

Literacy	Homosexual	Bisexual	Total	%
Illiterate	3	0	3	2.4%
Primary	28	6	34	26.8%
Secondary	51	17	68	53.5%
College	22	0	22	17.3%
Total	104	23	127	100%

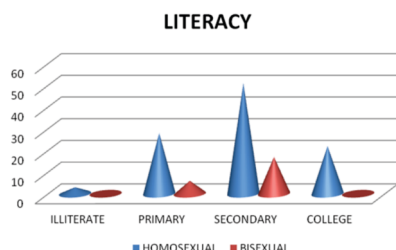


Chart 1- Educational Status Of MSM

Most of the patients with high risk behavior had higher education. (70.8%). Most of them are literate

4) High Risk Sexual Behavior

Table 4

Exposure	Homosexual	Bisexual	Total	%
ORORECEPTIVE	4	0	4	3.1
ORO, ANORECEPTIVE	65	0	65	51.2
OROINSERTIVE	15	13	28	22.1
ORO-ANOINSERTIVE	20	10	30	23.6
TOTAL	104	23	127	100%

About 54% of patients practiced receptive sexual behaviour which played a major role in the transmission of sexually transmitted infections

5) Condom Usage

Table 5

Condom Usage	Homosexual	Bisexual	Total	%
Never	13	3	16	12.6
Occasionally	72	19	91	71.7
Mostly	19	1	20	15.7
Always	0	0	0	0
Total	104	23	127	100

Though majority of our patients had basic education, still, when it comes to sexual behavior, most of them practiced unsafe sex. (84.3%)

6) Marital Status

Table 6

Status	Homosexual	Bisexual	Total	%
Married	1	19	20	15.75
Unmarried	103	4	107	84.25
Total	104	23	127	100

Most of the patients were unmarried (84.25%) which implies an important role in target intervention, to avoid the spread of HIV/STI in the community

7) Presenting Complaints.

Table 7

Complaints	Homosexual	Bisexual	Total	Percentage
Ulcer	2	1	3	2.4

Discharge	4	1	5	3.9
Growth	6	1	7	5.5
Burning Micturition	11	0	11	8.7
Others	1	0	1	0.8
Screening	80	20	100	78.7
Total	104	23	127	100

Many patients, who came for routine screening (78.7%) when completely examined with appropriate investigations, were found to have significant sexually transmitted infections.

Sexually transmitted infections in Men having Sex with Men

Table 8

Infection	Homosexual	Bisexual	Total	%
Primary Syphilis	0	0	0	0
Sec. Syphilis	1	0	1	0.8
Latent Syphilis	4	1	5	3.9
Gonorrhea	1	0	1	0.8
Chancroid	0	0	0	0
Venereal Granuloma	0	0	0	0
NGU	12	1	13	10.2
Herpes Genitalis	2	0	2	1.6
Anogenital Warts	6	2	8	6.3
NSU	0	0	0	0
Balanoposthitis	2	1	3	2.4
MC	0	0	0	0
Scabies	0	0	0	0
HIV	10	3	13	10.2
Total(n=127)	38	8	46	36.2

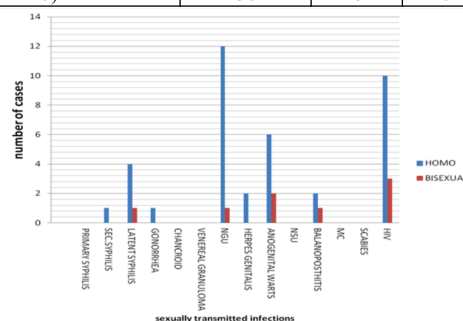


Chart 2- Pattern of STIs in MSM

Age Wise Prevalence Of STI

Table 9

Age (years)	Homosexual	Bisexual	Total	%
10-20	4	0	4	8.7
21-30	28	2	30	65.2
31-40	6	2	8	17.4
41-50	0	4	4	8.7
TOTAL	38	8	46	100

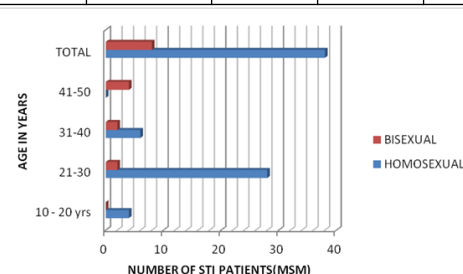


Chart 3- Age Wise Prevalence Of STI In MSM

DISCUSSION

Though the most common mode of transmission of STIs/HIV in developing countries like India remains heterosexual due to westernization and industrial development in urban areas, there is a change in trend of the sexual behavior leading to same sex behavior (MSM). Knowingly or unknowingly they will transfer their infections to their innocent partners after marriage. Hence education of this young people remains a major challenge in the prevention of sexually transmitted infections and HIV/AIDS.

Our study highlights the importance of surveillance, early diagnosis and combined strategies to control and manage the STIs in the high risk group. STI clinics in India are important places where patients can be educated about the condom usage, safe sexual behaviour, prevention and treatment of sexually transmitted infections.

Demographics

Approximately 0.9 % (127/14178) of the total out patients who attended our OPD during January 2017- December 2018 had high Risk MSM behaviour. Most of the patients with MSM behaviour (82%) were in the age group of 20-40 years. Most of these persons were residing in rural area (55%). Homosexuals remained unmarried when compared to Bisexuals. In due course these persons will get married, due to our social customs, and seek sex clandestinely outside the marriage⁷. As a result of this, this high risk population was more prone to get sexually transmitted infections and got more chance to spread this infection in the society.

Most patients in our study were literate (97%). Atleast they were able to read. This remains a positive factor in educating the patient about the risk of sexual behaviour, STI/HIV AIDS. Even Media has got a big role in bringing a great behavioural modification in this high risk population. (Asekun-Olarinmoye OS et al) But in spite of the literacy status, most patients who attended our study revealed that they are practicing unsafe sexual behaviour (84%).(Fenton KA, Johnson AM, McManus S, et al) 16% were using condoms in contrast to 12% reported in one study. Most MSM were using condoms occasionally only, due to the fear of rejection by their partners. This places them at a higher risk for acquiring STI/HIV AIDS. So counseling is most needed in these patients to bring a change in the condom usage among these patients. (Jenny E. Ostergren, et al)

Regarding sexual behaviour, most of the respondents in our study had performed receptive intercourse (anal, oral) (54%) compared to 65% of penetrative intercourse in another study⁸³ which provides a good nidus for the growth of sexually transmitted infections. In spite of this, only one third has developed significant overt STI (36.2%) and the remaining may be in incubatory period. Hence screening of this MSM population regularly atleast once in 6 months will be a better option in the prevention, early diagnosis and treatment of STI/HIV AIDS.

Homosexual behaviour is more seen in our patients, in contrast to the two studies conducted among MSM in Chennai (venkatesh Chakrapani et al.) where bisexual behavior was more common. Most of them remain unmarried. In due course of time they will get married and play a vital role in transmission of STIs. They remain the major precipitating factor in the spread of silent epidemic of STI/HIV infection.

Pattern Of Sexually Transmitted Infections Among MSM

Most of STIs were seen in younger age persons (74%) and majority of them had homosexual behaviour. 36% of our patients with high risk behaviour had atleast one significant STI when compared to 41% in another study (naco 2002).

Among the STIs, viral STIs are the most common infection (Yuji Feng et al). Viral STIs were seen in 18.1%. Among the viral infections HIV is the most common (10.2%), followed by Anogenital warts (6.3%), Anogenital Herpes (1.6%). These viral infections were very difficult to cure. After treatment of these infections asymptomatic carrier state exists in the patient, which in turn helps in the spread of infection to the community. Bacterial STIs were seen in 5.5% of patients. The following pattern is seen in Bacterial STIs in decreasing order of frequency – Latent Syphilis (3.9%), Secondary Syphilis (0.8%), Gonorrhoea (0.8%). Among the Bacterial STIs, latent Syphilis remains the significant STI encountered in the study. This awakens us about the importance of screening of the patients with VDRL and ELISA for HIV. Other infections encountered in our study include balanoposthitis (2.4%), non gonococcal urethritis (10.2%)

Among patients presenting with burning micturition, the cause is identified in only one case. More sophisticated investigations like Nucleic acid Amplification test and Polymerase Chain Reaction are needed to rule out other causes.

The HIV infected MSM concealed their HIV status and had unsafe sexual behaviour with their partners. When it comes to the receptive partner affected with HIV, the situation is still getting worse. They

intentionally conceal their HIV status, to earn their livelihood. They sell sex for money along with free subscription of HIV. Sometimes even if they resist, they were forced by the partners to have unsafe sex. Hence educating MSM alone would not help in the control of STI/HIV. The whole community should be educated regarding the benefits of safe sexual behaviour and consequences of unsafe sex like STIs/HIV.

Difficulties were encountered in tracing and treating the partners of those patients. Even if they had regular sex partners, the patients never concealed their partner either for screening or treatment. Hence partner notification is one area, which has to be explored in detail among MSM population. (Suzan-Monti Met al)

CONCLUSION

1. Viral sexually transmitted infections (18.1%) are on the rise compared to the bacterial infections (5.5%) in the Men having Sex with Men. Among viral infections, HIV is the commonest, and among bacterial infections, latent syphilis is common. Hence regular screening with VDRL and ELISA for HIV is a must in MSM
2. 13 patients (10.2%) of the total MSM were HIV positive
3. HIV infection is more seen in Bisexual men (13.04%) than Homosexual men (9.6%). Overall, the prevalence of HIV is common in this high risk group (MSM), when compared to the general population.
4. Sexually transmitted infections among MSM are more seen in younger adult in sexually active reproductive group (74%). Hence, the main target population among MSM, which needs to be focused in order to prevent STI/HIV, is this young population.
5. Sexually transmitted disease management in MSM requires the expert clinician to be conversant with risk assessment, the clinical presentation, and current diagnosis of certain infections, and to be familiar with new therapeutic agents. Successful STI care of MSM can be achieved because many infections are easily diagnosed and curable with simple single dose therapy. The current challenges lie in effective risk reduction and optimizing preventive care in a cost-effective manner. New molecular-based diagnostic studies will offer insights into the etiology of several clinical syndromes, but the basis of care will always rely on the same critical components of medicine: listening and talking to patients.

REFERENCES

1. Asekun-Olarinmoye OS, Asekun-Olarinmoye E, Adebimpe WO, Omisore AG. Effect of mass media and Internet on sexual behavior of undergraduates in Osoygo metropolis, Southwestern Nigeria. *Adolesc Health Med Ther*. 2014;5:15-23 <https://doi.org/10.2147/AHMT.S54339>
2. Fenton KA, Johnson AM, McManus S, et al Measuring sexual behaviour: methodological challenges in survey research 4. Sexually Transmitted Infections 2001;77:84-92.
3. Jenny E. Ostergren, I. * B.R. Simon Rosser, 2 and Keith J. Horvath *Cult Health Sex*. 2011 Feb; 13(2): 123–140. Reasons for Non-use of Condoms among Men-who-have-Sex-with-Men: A Comparison of Receptive and Insertive Role-in-Sex and Online and Offline Meeting Venue doi: 10.1080/13691058.2010.520168
4. Matthew J. Mimiaga, a, b, c, * Katie Brooks Biello, b, c Murugesan Sivasubramanian, d Kenneth H. Mayer, c, e Vivek Raj Anand, d and Steven A. Safren, c Psychosocial risk factors for HIV sexual risk among Indian men who have sex with men AIDS Care. 2013 Sep; 25(9): 1109–1113. doi: 10.1080/09540121.2012.749340
5. National Baseline High Risk and Bridge Population Behavioral Surveillance Survey. Part 2. Men who have Sex with Men and Injecting Drug Users. National AIDS Control Organisation. [India]..2002.
6. Steven M Goodreau and Matthew R Golden Biological and demographic causes of high HIV and sexually transmitted disease prevalence in men who have sex with men *Sex Transm Infect*. 2007 Oct; 83(6): 458–462. doi: 10.1136/sti.2007.025627
7. Suzan-Monti M1,2, Cotte L3, Fressard L1,2, Cua E4, Capitain C5, Meyer L5, Pialoux G6, Molina JM7, Spire B1,2; ANRS IPERGAY Study Group. Factors associated with partner notification of STIs in men who have sex with men on PrEP in France: a cross-sectional substudy of the ANRS-IPERGAY trial. *Sex Transm Infect*. 2018 Nov; 94(7): 490–493. doi: 10.1136/ssextrans-2017-053304. Epub 2018 Jan 29.
8. Venkatesan Chakrapani. Sekar B (2001) Demographic and Clinical characteristics of males who Have sex with males (MSM) attending a community based STD clinic in Chennai. Poster presentation at III International conference on AIDS. AIDS India 2000, Chennai, India Dec 15, 2001. Conducted by Tamil Nadu Dr. MGR Medical University, Chennai
9. Victoria Frye, Mary H. Latka, Beryl Koblin, Perry N. Halkitis, Sara Putnam, Sandro Galea, and David Vlahov The Urban Environment and Sexual Risk Behavior among Men who have Sex with Men *J Urban Health*. 2006 Mar; 83(2): 308–24.
10. Viraj V. Patel, Kenneth H. Mayer, * and Harvey J. Makadon ** Men who have sex with men in India: A diverse population in need of medical attention *Indian J Med Res*. 2012 Oct; 136(4): 563–570.
11. Yuji Feng, MD, PhD, * Zunyou Wu, MD, PhD, † Roger Detels, MD, MS, * Guangming Qin, MD, ‡ Li Liu, MD, ‡ Xiaodong Wang, § Jun Wang, § and Linglin Zhang, MD ‡ HIV/STD prevalence among MSM in Chengdu, China and associated risk factors for HIV infection *J Acquir Immune Defic Syndr*. 2010 Feb; 53(Suppl 1): S74–S80. doi: 10.1097/QAI.0b013e3181c7dd16