



HIV Serosurveillance Profile in Men Sex Men: Targeted Intervention Group

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ABSTRACT

Background: *HIV is the plague of the running century. It has changed the fate of our society. Emergence of HIV threatened the economical, developmental, social welfare and public health progress not only in India but also all over the world. serosurveillance studies play a major role in success of health care programmes.*

Objective: *the present was undertaken to study the serosurveillance profile in MSM targeted intervention group in AP. Material and Methods: This study was conducted over a period of 12 months from April 2004 to April 2005. Serum samples are received from the voluntary organizations SAATI, vijayawada which is working for the welfare of MSM groups. Age, location, migration, literacy of the seropositive patients was considered.*

Results: *During this period consecutive non repetitive 250 serum samples received from MSM clients were tested for the serosurveillance of HIV by HIV TRIDOT KIT manufactured by J.Mitra & Co., Ltd. Among them HIV test by TRIDOT was positive in 33(13.2%) samples. samples of age group 20-29 yrs showed highest positive percentage (15.2%) and lowest positive percentage below 20yrs age group showed (6.6%).*

Conclusion: *our study findings are contrary to the belief. Therefore it is recommended that large sample based studies may be taken up in which may throw better light on the seroprevalance and clinical presentation of HIV among MSM.*

Key words: *HIV, Serosurveillance, MSM, Intervention*

INTRODUCTION

The first cases of acquired immunodeficiency syndrome (AIDS) were reported in the United

States in the spring of 1981. AIDS was first recognized in men who have sex with men.⁽¹⁾ .By

1983 the human immunodeficiency virus (HIV), the virus that causes AIDS, had been isolated. Early in the U.S. HIV/AIDS pandemic, the role of substance abuse in the spread of AIDS was clearly established. Injection drug use (IDU) was identified as a direct route of HIV infection and transmission among injection drug users. The largest group of early AIDS cases comprised gay and bisexual men (referred to as men who have sex with men (MSMs). Early cases of HIV infection that were sexually transmitted often were related to the use of alcohol and other substances, and the majority of these cases occurred in urban, educated, white MSMs.⁽²⁾ Most early studies established that unprotected anal intercourse was a particular risk, especially to the passive, receptive partner. The estimated risk from a single exposure is 0.1- 0.3%.⁽¹⁾

The primary route of HIV transmission for MSMs is through sexual contact, which may occur while the participants are engaged in substance abuse, including IDU. Within this group, the focus of the pandemic among MSMs has shifted from older, white, urban men to poorer African American and Hispanic men, men with substance abuse problems (including IDU), and young men. Repeated studies have found that MSMs who abuse alcohol, speed, MDMA (3,4-methylenedioxymethamphetamine), cocaine, crack cocaine, inhalants, and other noninjection street drugs are more likely than those who do not use substances to engage in unprotected sex and become infected with HIV. One hypothesis about the reason for higher rates of HIV/AIDS among MSMs is that substance abuse may increase sexual risk taking.

This is because substance abusers experience decreased inhibition, new learned behaviors (such as using substances and then having unprotected anal intercourse), low self-esteem, altered perception of risk, lack of assertiveness to negotiate safe practices, and perceived powerlessness⁽³⁾.

As of June 1999, more than half of all cumulative male adult and adolescent AIDS cases were among MSMs who reported sexual risk only (57 percent) or sexual risk and IDU (8 percent). Of cumulative HIV cases among adult and adolescent males, 45 percent reported sexual risk only and 6 percent reported sexual risk and IDU ⁽²⁾. Even though the cumulative total of AIDS cases among MSMs is still highest in white men, new AIDS cases among MSMs indicate that the disparity between cases among whites and among minorities is narrowing.

As with injection drug users, minority MSMs are disproportionately affected by HIV disease. African American and Hispanic MSMs, compared with their white counterparts, are more likely to inject drugs, to be substance abusers, to be poor, to be paid for sex, and to engage in higher rates of unprotected anal intercourse ^(4,5). Sociocultural factors, combined with some community values (e.g., machismo, family loyalty, sexual silence) and lack of access to health care and substance abuse treatment, strongly compete with safe sex and drug practices among gay and bisexual men of color ⁽⁶⁾.

Sex networks and sexual mixing patterns are hypothesized to explain the higher risk of HIV infection related to substance abuse among

MSMs. MSM substance abusers may form tight groups characterized by higher HIV seroprevalence rates, higher sexual mixing, greater IDU, and more trading of sex for money, food, and drugs. These factors are another way to account for higher HIV risk-taking sexual behaviors among MSM substance abusers⁽⁷⁾

CONTROL

The emphasis is on risk reduction by avoiding unprotected penetrative intercourse with partners of unknown status. Despite knowledge of the major routes of infection, there has been only limited success in reducing sexual transmission. The use of condoms and vaginal antiseptics could have impact but the need to be available and acceptable to the local population. In the areas of the world with low levels of infection, early efforts to encourage safe practices had an effect on the spread of the virus among MSM.⁽¹⁾

MATERIALS AND METHODS

This prospective study was conducted over a period of twelve months. During this period consecutive non repetitive 250 serum samples received from MSM clients were tested for the presence of HIV by HIV TRIDOT KIT manufactured by J.Mitra & Co.,Ltd. .

PRINCIPLE

HIV antigens are immobilized on a porous immunofiltration membrane. Sample and reagent pass through the membrane and are absorbed into the underlying absorbent. As the patient sample passes through the membrane, HIV antibodies if

present, bind to the immobilized antigens. Conjugate binds to the F_c portion of the HIV antibodies to give distinct pinkish purple DOT(s) against a white background.

PROCEDURE

Add three drops of Buffer solution to the centre of the device and add a drop of patients sample using a dropper provided. Add 5 drops of Buffer solution. Add 2 drops of liquid conjugate directly from the conjugate vial. Add 5 drops of buffer solution and read results. It is important to allow each solution to soak in the test device before adding the test solution.

INTERPRETATION

If only one DOT (control dot) appears the specimen is non reactive for antibodies either to HIV-1 or HIV-2.interpret the sample non reactive. if two DOTS one for control and other for HIV-1 appear the specimen is reactive for antibodies to HIV-1. if two DOTS one for control and other for HIV-2 appear the specimen is reactive for antibodies to HIV-2.if all the three DOTS, one each for control,HIV-1andHIV-2 appear the specimen is reactive for antibodies to HIV-1 and HIV-2. If no DOT appears after the test is complete, either with clear background or with complete pinkish/purple background the test indicates ERROR. This indicates a procedural error or deterioration of specimen/reagents or particulate matter in the specimen. The specimen should be tested on a new device

RESULTS

During the study period extending from April 2004 to April 2005, serum samples (250) received from voluntary organization SAATI which is working for the welfare of the MSM groups, Vijayawada. The work is carried out in Department of Microbiology, Siddhartha Medical college, Vijayawada.

Among the 250 samples processed, HIV test by TRIDOT was positive in 33(13.2%) samples. Maximum no. of samples received from clients between age group 20-29 yrs(125) and minimum no. of samples received from the age group below 20yrs⁽¹⁵⁾. Highest positivity percentage is seen among the age group 20-29yrs(15.2%) and lowest positivity is seen among the age group below 20yrs(6.6%).(table-1).the lowest positivity among the age group below 20yrs may be due to limited MSM practices compared to above age groups.

Based on location distribution, 33 samples showed HIV positivity (13.2%).among them maximum

samples collected from rural(150) and minimum samples collected from urban(100).among them highest prevalence shown by urban (17%) compared to rural(10.6%). (Table-2) .

Based on migration status, among 250 samples processed, maximum no of serum samples collected from non migrants(246) and minimum no of serum samples collected from migrants⁽⁴⁾.HIV positivity was seen in non migrants (33) compared to migrants which is Nil. highest positivity percentage was 13.4% seen among non migrants.(table-3).

Based on literacy rate, highest samples received from illiterates(105),among them 96 serum samples showed HIV positive and minimum no. of samples are collected from Graduation and above were 12 samples, where No positivity of HIV was observed. Highest positive percentage seen among illiterates (15.2%) compared to Graduation and above which is Nil.(Table-4)

TABLE 1.Age wise distribution

Age in years	Number of samples	No of positive cases	Percentage%
Below 20yrs	15	1	6.60%
20-29 yrs	125	19	15.2%
30-44 yrs	86	10	11.62%
45 above	24	3	12.5%
Total	250	33	13.2%

2.Location distribution

Location	Samples	Positive	Percentage%
Urban	100	17	17%
Rural	150	16	10.6%
Total	250	33	13.2%

3.Status of migration

Status	Samples	Positive	Percentage%
Migrated	4	Nil	Nil
Non migrated	246	33	13.4%
Total	250	33	13.2%

4.Literacy status

Literacy status	Samples	Positive	Percentage%
Illiterate	105	16	15.2%
Literate till 5 th	55	6	10.9%
Literate till 12 th	25	11	14.6%
Graduation and above	12	Nil	Nil
Total	250	33	13.2%

DISCUSSION

This is the first study on MSM from AP. Previously there are no reports of MSM from this state. Our study findings are contrary to the belief. Therefore it is recommended that large sample based studies may be taken up in which may throw better light on the seroprevalance and clinical presentation of HIV among MSM. The present studies are crucial in health care planning, prevention and treatment strategies for generating reliable information.

This prospective study was conducted over a period of 12 months from April2004 to April2005. During this period a total of 250 serum samples collected from SAATI welfare for MSM were tested for serosurveillance profile in MSM targeted intervention group. Total sero surveillance of HIV among MSM was found to be 13.2%. Sero prevalence was found to be highest in the age group of 22-29 years (15.2%) and lowest in the age group below 20 years (6.6%).

In our study lowest prevalence rate of HIV was seen among the age group below 20 years. This may be due to limited MSM practices compared to above age groups.

Currently, injection drug users represent the largest HIV-infected substance-abusing population in the United States. HIV/AIDS prevalence rates among injection drug users vary by geographic region, with the highest rates in surveyed substance abuse treatment centers in the Northeast, the South, and Puerto Rico⁽¹⁾. IDU practices are quick and efficient vehicles for HIV transmission. The virus is transmitted primarily through the exchange of blood using needles, syringes, or other IDU equipment (e.g., cookers, rinse water, cotton) that were previously used by an HIV-infected person. Lack of knowledge about safer needle use techniques and the lack of alternatives to needle sharing (e.g., available supplies of clean, new needles) contribute to the rise of HIV/AIDS.

Another route of HIV transmission among injection drug users is through sexual contacts within relatively closed sexual networks, which are characterized by multiple sex partners, unprotected sexual intercourse, and exchange of sex for money ⁽⁸⁾. The inclusion of alcohol and other noninjection substances to this lethal mixture only increases the HIV/AIDS caseload ^(9,10).

However, the prevalence of unprotected anal intercourse differs by whether the HIV+ man is the insertive or receptive partner. Among HIV+ MSM in Los Angeles County, 22% reported unprotected anal insertive (UAI) sex, whereas 27% reported unprotected anal receptive (UAR) intercourse ⁽¹¹⁾. Of particular concern among HIV+ MSM are the immunosuppressant effects of alcohol use. Studies have shown that alcohol use reduces neutrophil and T cell-dependent immune functions ^(12,13). Alcohol may increase viral replication, affecting the immunopathogenic mechanisms of HIV-1 ⁽¹⁴⁾. A relationship between alcohol use and accelerated HIV disease has been identified in multiple studies. Thus, alcohol use is a cofactor that negatively impacts the course of HIV infection and pathogenesis ⁽¹⁵⁾.

Our study provides an evidence for the serosurveillance of HIV among MSM in this state. It is recommended that this study should be included in different diagnosis, and proper diagnostic work up should be done to arrive at the proper diagnosis so that timely and adequate treatment may be given to the patient as delay in treatment is associated with high mortality. Thus knowledge of serosurveillance of HIV among

MSM and its effects shall help health care providers to recognize and control disease in better way.

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