Trend of sexually transmitted infections in HIV seropositive and seronegative male patients attending STD clinic at a tertiary care centre

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Abstract

Introduction: HIV infection is emerging as one of the major health problems faced by the clinicians across the world, more so because of the co-existence of many sexually transmitted infections (STIs) among HIV infected patients. Untreated STIs increases the risk of both acquisition and transmission of HIV infection by ten folds. Hence, the present study was undertaken to determine the current trend of STIs among male patients attending STI clinics and their association with HIV infection.

Methods and Material: A total of 100 patients who visited the STD clinic with complaints of sexually transmitted infections were included in the study. A detailed history, clinical examination and relevant investigations including HIV test were done to diagnose the infection. The results were tabulated by dividing the study subjects into two groups (HIV positive and Negative group).

Results: Most of the patients were in reproductive age group, majority of them had multiple sex partners, and condom usage rate was very low. Viral infections like Genital herpes and genital wart were the most common STI s. A significant association was seen between viral STI s and HIV infection. No significant association were seen between ulcerative STI s and HIV infections.

Conclusions: Trend of STIs has gradually changed over the years, with decline in the incidence of bacterial infections and increase in the prevalence of viral infections. There is increased association of viral STI s with HIV positive patients.

Key-words: Human Immuno deficiency virus, Sexually transmitted infections, Herpes simplex virus, Human papilloma virus.

Key Messages: Information, education and counselling regarding safe sex practices in high risk groups, who are at risk of acquiring and transmitting HIV & STIs, plays a key step in prevention and control of STDs. Early diagnosis and prompt institution of Anti-retroviral therapy in HIV patients will go a long way in improving the quality of life and reducing the morbidity and mortality in these populations.

Introduction

Human Immunodeficiency Virus (HIV) and Sexually Transmitted Infections (STIs) are posing a serious threat to mankind in both developed and developing countries worldwide. They have a major demographic, economic and social impact particularly in Asia and Africa. Heterosexual promiscuity, homosexuality, multiple sex partners and lack of awareness regarding protected sexual exposure are some of the high risk behaviour, hence information, education and communication (IEC) activities on safe sexual practices should be strengthened.

Also the interest in STI s and their management have increased tremendously because of their proven role in facilitation of HIV infection.[1] which, in turn, also increases susceptibility to other STIs. Most of the STIs, both ulcerative and non-ulcerative, are prevalent in India and constitute one of the major health problem.[2] The profile of various diseases is variable, depending upon the socioeconomic, cultural, geographic and environmental factors prevalent in different parts of the country.[3,4]

However, not much data is available regarding the current trend of STIs in this part of the world, and how their epidemiological and clinical picture is being modified in the context of ongoing HIV/AIDS epidemic, especially during the last decade. Aim of the present work is to study the pattern of STIs among HIV positive and HIV negative male patients attending STI clinic and to observe whether there is any difference between these two groups.

Objectives of the study

1. To study the trend of STIs in our hospital.
2. To study the association of STIs among HIV positive and negative patients.
3. To determine the risk factors for STI s among the study population.

Materials and Methods

Study Design: It was a prospective study design.

Study Setting: Study was conducted at STD clinics of Victoria and Bowring hospitals of Bangalore Medical College and Research Institute, Bangalore, on a total of 100 male patients infected with sexually transmitted infections (STIs) who attended our STD clinic at Victoria and Bowring hospitals from May 2012 to May 2013.

Study population: Male patients of all age groups who presented with complaints suggestive of STIs were included in the study.

Study Duration: 1 year (May 2012 to May 2013).

Sample Size: A study conducted by Rizwan SA et al, the commonest self-reported STI symptom was burning micturition (34.9%),[5] this was taken to calculate sample size with the absolute precision at 10%, alpha 5% with design effect of 1, the sample size derived was 88 which was calculated using the OpenEpi (Version 3.03), we collected sample of 100 for this study.

Sampling Method: A convenient sampling method was used to collect data.

Data Collection: The study was conducted after taking ethical clearance from the Institutional Ethics Committee, Bangalore Medical College and Research Institute, Bangalore. After taking informed written consent from the study participants, the data was collected from those who were willing to participate in the study by using predesigned patient information proforma. The proforma included details about sociodemographic factors (age, occupation, residence, education, marital status), clinical history (presenting illness, history of STI s similar or other illness in the past, sexual history including high risk behaviours like multiple sex partners, homosexuality, sexual practices like oral and anal sex, use of condoms) and examination of the patient (head to toe examination) which was used to arrive at a clinical diagnosis. To confirm the diagnosis, investigations such as ELISA for HIV 1&2 antibodies and VDRL for all the patients, Gram's staining for H.ducreyi, Tzanck smear for herpes simplex virus, Wet mount for protozoans, KOH mount for candida, Dark field microscopy for treponemes, Bubo aspiration and smear for lymphogranuloma venereum were done.

Based on the HIV status the study population was divided into two groups, first 50 patients tested positive were included under HIV positive group and first 50 patients tested negative were included in the HIV negative group.

Data Analysis: Data was entered in Microsoft Excel and descriptive statistics and Fischer's exact test were analysed using EpiData Analysis V2.2.2.182.

Results

A total of 100 male patients were included in the study and majority of the patients belonged to reproductive age group (20-50 years) with the mean age of 37.21 years. (Table 1).

Among the study subjects, 78% of them were married and remaining were un-married indicating that STIs are more common among married men. About 77% of them had multiple sex partners- 43% were HIV positive and 34% were HIV negative (Graph 1).

Around 67% of the patients were belonging to urban areas and most of them were educated less than matriculation (10th standard). Most of them were working in less skilled jobs and also jobs which require travel for long periods. Over all condom usage rate was 43%, among HIV positives it was 34% and among HIV negatives it was 52% which was low among HIV positives.

Among the total patients, 95% are heterosexuals, 2% are homosexuals and 3% are bisexuals.

Out of all the cases viral STIs were most common in which genital herpes was the commonest (46%) (Table 2).

Among the 50 HIV positive cases, 21 had genital herpes (42%) which was the most common STI, followed by 8 cases of mixed viral & bacterial STIs, 8 cases of genital wart (16%), 5 cases of molluscum contagiosum (10%), 4 cases of syphilis (8%), 2 cases of candidal balanoposthitis (4%) and 2 cases of urethral discharge (4%).

Among the 50 HIV negative cases, 25 had genital herpes (50%) which was the most common STI, followed by 8 cases of candidal balanoposthitis(16%), 7 cases of urethral discharge(14%), 5 cases of genital wart (10%), 2 cases of molluscum contagiosum (4%), 2 cases of chancroid (4%) and 1 case of syphilis (2%).

Among all the cases, proportion of viral & non-viral STI's were 74% & 26% respectively, among HIV positive group this was 84% & 16% and in HIV negative group 64% & 36% respectively, which showed a significant association of viral STIs with HIV positive group (p value 0.039) (Table 3).

Among all the cases, proportion of ulcerative STI s were 49% and non- ulcerative were 44% and 7% were mixed. Among HIV positive group, 44% had ulcerative STIs, 42% had non-ulcerative STIs & 14% had mixed lesions. In HIV negative group, 56% and 44% were having ulcerative and non-ulcerative STIs respectively and a p value was 0.54 indicating no significant association of ulcerative infections with HIV (Table 4).

The ratio of genital ulcer disease (GUD) (60%) to urethral discharge syndrome (UD) (10%) was 6:1, in HIV positive group it was 64% & 6% (10.67:1) and in HIV negative group 56% & 14% (4:1) respectively. The p value for the association was 0.3 and it was not significant (Table 5).

Table 1: Age distribution of study population

Age in years	Total no of cases	Percentage
21-30	32	32
31-40	32	32
41-50	28	28
51-60	8	8

Graph 1: Number of sexual partners among the study subjects

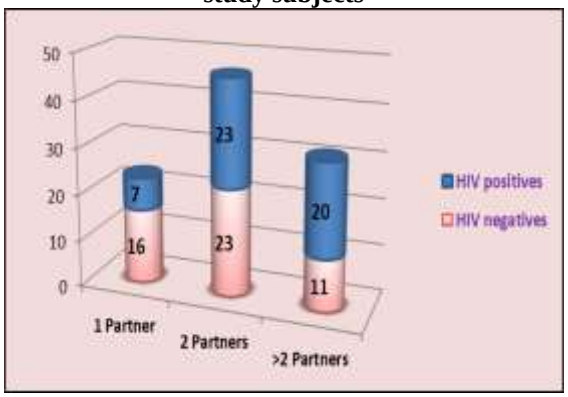

Table 2: Etiological distribution of STIs among the study population

Diagnosis	HIV positive	HIV negative	Total
Genital herpes	21	25	46
Genital wart	08	05	13
Mixed STIs	08	00	08
Molluscum contagiosum	05	02	07
Syphilis	04	01	05
Candidal balanoposthitis	02	08	10
Urethral discharge	02	07	09
Chancroid	00	02	02
Donovanosis	00	00	00
LGV	00	00	00
Total	50	50	100

Table 3: Proportion of viral and non-viral STIs among the HIV positive and negative study population

Category	HIV positives	HIV negatives	Total
Viral STIs	40	32	72
Non-viral STIs	08	18	26
Mixed STIs	02	00	02
Total	50	50	100

p value=0.039 (Fischer exact test)

Table 4: Proportion of ulcerative and non-ulcerative cases among the HIV positive and negative study population

Category	HIV positives	HIV negatives	Total
Ulcerative STIs	22	27	49
Non-ulcerative STIs	21	23	44
Mixed ulcerative & non-ulcerative	07	00	07
Total	50	50	100

p value=0.54 (Fischer exact test)

Table 5: Table showing Genital ulcer disease Vs urethral discharge syndrome among the HIV positive and negative study population

Category	Genital ulcer disease	Urethral discharge syndrome	Total
HIV positive group	32	03	35
HIV negative group	28	07	35
Total	60	10	70

p value=0.30 (Fischer exact test)

Discussion

In our study majority of them belong to the reproductive age group with a mean age of 37.21 years, among HIV positive group, it was 37.78 years and among HIV negative group, it was 36.64 years. In a study by Sabyasachi et al[6], mean age of patients in HIV positive group was 30.60 years (range: 16−54 years) and in HIV negative group it was 27.75 years (range: 13−57 years) which was comparable with our study.

78% of patients in our study were married. In another study by Jain et al[7] most (93.2%) of the female patients were married, whereas only 50% of the male patients were married which was slightly higher in our study.

In HIV positive group number of patients having two and more than two partners was 43 and in HIV negative group it was 34. In another study by Sabyasachi et al[8] conducted on 200 fish spawn traders it was found that 3% of the subjects had no sexual partner, 2% had sexual contact only with spouse, 15% had 1-3 sex partners apart from spouse, 11% had 4-7 sex partners, 10.5% had 8-10 partners and 58.5% had more than 10 partners.

Educational status of majority of patients (88%) was less than matriculation. In another study patients having high school level education accounted for 36.7% cases which is much less compared to our study.[9]

Condom usage rate is 34% among HIV positives, 52%among HIV negatives and overall it was 43%. A survey on condom usage revealed that, 42% of the surveyed males did not use a condom; 23% did not leave a space at the receptacle tip; and 81% did not use a water-based lubricant which is comparable with our study.[10]

In our study 48% worked in private sector, 14% of them were drivers, 13% un-employed, 9% coolie, 6% in public sector, 5% security and 5% farming. This is comparable with other studies; a study conducted by Shendre et al showed 28% of the total cases of STD could be attributed to the unskilled profession and 50% to the job requiring frequent travel.[11]

Genital herpes was the most common STI seen (46%), In HIV positive group 42%, and in HIV negative group 50%. In another study conducted by Sarkar et al,[12] also showed similar observations; overall commonest STI was genital herpes. Viral STIs like genital herpes (38.1%), condyloma acuminata (10.6%), molluscum contagiosum (4.7%) were more prevalent than the non-viral ones like genital ulcer disease non-herpetic & syphilis (9.1%), urethral discharge (13.8%).

The proportion of viral & non-viral cases were 74% & 26% respectively, in HIV positive group this was 84% & 16% and in HIV negative group 64% & 36% respectively, which showed a significant association of viral STI s with HIV positive group. In another study by Vora et al[13] at Gujarat in 2011, viral infections (herpes genitalis, genital warts, and molluscum contagiosum) accounted for 62.2% of cases and 37.8% cases were non-viral which is almost comparable with our study.

Ulcerative STI s were 49%, non- ulcerative 44% and few cases of mixed ulcerative & non- ulcerative 7%. In HIV positive group it was 44% ulcerative, 42% non-ulcerative & 14% mixed. In HIV negative group it was 56% ulcerative & 44% non-ulcerative respectively, but when p value was taken it did not show any significant association.

The ratio of genital ulcer disease (GUD) (60%) to urethral discharge syndrome (UD) (10%) was 6:1, in HIV positive group it was 64% & 6% (10.67:1) and in HIV negative group 56% & 14% (4:1) respectively, but when p value was taken it did not show any significant association.

In another study by Banerjee et al[1], the ratio of genital ulcer disease and urethral discharge was 3:1 in HIV positive group (99 cases versus 32 cases) and roughly 2:1 in HIV negative group (91 cases versus 47 cases).

Conclusion

Trend of STIs has gradually changed over the years, with decline in the incidence of bacterial STIs and increase in the prevalence of viral STIs. There is increased association of viral STI s with HIV infection. Still there are considerable percentage of people with multiple sex partners, lack of awareness about protected sex. There is a need to spread awareness about safe sex practices, risks associated with HIV and STIs to decrease the prevalence and transmission.

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